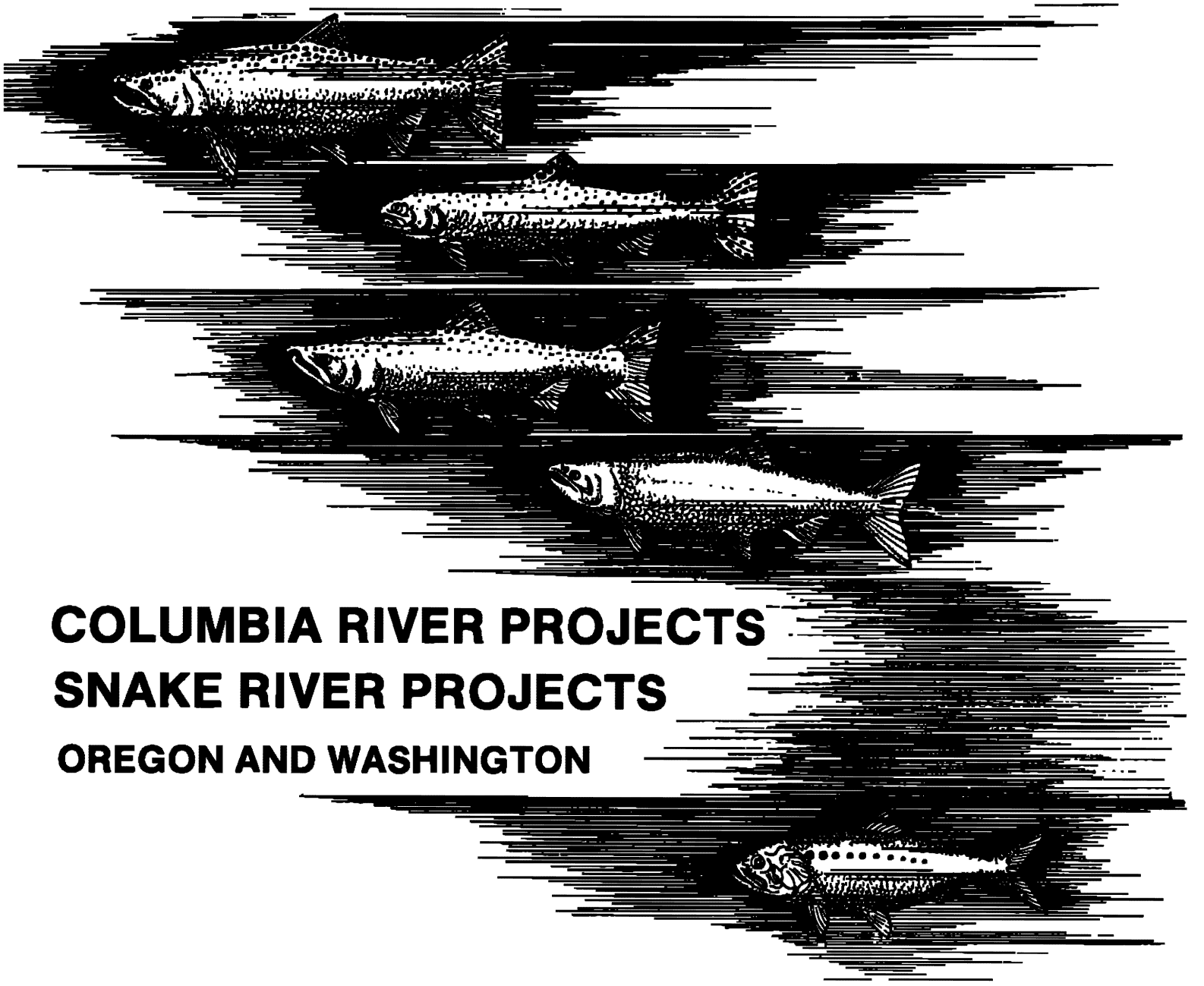
US Army Corps
of Engineers
Portland & Walla Walla Districts

ANNUAL FISH PASSAGE REPORT-1983



COLUMBIA RIVER PROJECTS
SNAKE RIVER PROJECTS
OREGON AND WASHINGTON

1983

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 PASSAGE REPORT
COLUMBIA AND SNAKE RIVER PROJECTS
CALENDAR YEAR 1983

BONNEVILLE DAM - 1983

1983 Fish Counting Schedule

1 Jan - 14 Mar	No counting.
15 Mar - 31 Mar	Both ladders counted for one 8-hour shift each 0800-1600 hours, Pacific Standard Time. [1]
1 Apr - 31 Oct	Both ladders counted for two 8-hour shifts each day. Either 0400-2000 hours Pacific Standard Time, or 0500-2100 hours Pacific Daylight savings Time. [1]
1 Nov - 15 Nov	Both ladders counted for one 8-hour shift each 0800-1600 hours, Pacific Standard Time. [1]
16 Nov - 31 Dec	No counting.

1983 Fish Ladder Operating Schedule

Second Powerhouse	1 Jan - 28 Feb	Second Powerhouse fishway out of service for construction of Fisheries Engineering Research Laboratory.
	1 Jan - 1 Mar	Upstream Migrant Transportation channel out of service for construction of Fisheries Engineering Research Laboratory.
	1 Mar - 14 Nov	Ladder in service.
	2 Mar - 31 Dec	Upstream Migrant Transportation Channel in service.
	15 Nov - 31 Dec	Second Powerhouse fishway out of service for maintenance.

[1] Counting was conducted 50 minutes per hour with a 1.2 factor applied to compensate for rest periods at all the projects in this report except Little Goose dam.

Second Powerhouse (cont.)	15 Nov - 31 Dec	Cascades Island section of the Second Powerhouse ladder out of service for maintenance.
Bradford Island	1 Jan - 7 Jan	B Branch out of service for annual maintenance.
	8 Jan - 22 Jan	In service.
	23 Jan - 13 Mar	A-Branch out of service for installation of conduit for downstream migrant bypass.
	15 Mar - 31 Dec	Ladder in service.

1983 Downstream Migrant Facilities Operating Schedule

Second Powerhouse	1 Jan - 1 Mar	Downstream Migrant Channel out of service for maintenance.
	2 Mar - 16 Mar	Downstream Migrant Bypass System in service.
	17 Mar - 18 Mar	Downstream Migrant Channel out of service 26.5 hours for weir gate maintenance.
	19 Mar - 21 Mar	Downstream Migrant Bypass System in service.
	22 Mar	Downstream Migrant Channel out of service 12.3 hours for weir gate maintenance.
	23 Mar	Downstream Migrant Bypass System in service.
	24 Mar - 25 Mar	Downstream Migrant Bypass system out of service 36.5 hours for weir gate maintenance.
	26 Mar - 3 Dec	Downstream Migrant Bypass System in service.
	4 Dec - 31 Dec	Downstream Migrant Bypass System out of service for annual maintenance.

FISHWAY ACTIVITIES

The Corps Portland District Fisheries Field Unit conducted studies to evaluate adult fish passage. The entrances to the fishways of both power houses were monitored using electronic fish detectors. Individual fish were tracked by 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 practice of transporting juvenile salmonid fish past dams on their downstream migration. 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 fish trap on the second powerhouse fish ladder to collect late spawning "bright" fall chinook as part of a continuing program to establish a bright fall chinook egg bank. They trapped 3,501 between September 1 and September 30. These fish were transported to the Bonneville fish hatchery and were not counted at the second powerhouse fish counting station.

THE DALLES

Fishways - 1983-1984

Counters Start 1 Apr 83

Counters Finish 21 Nov 83

East Ladder	Jan 1	Thru	Jan 7	Ann. Inspection
East Ladder	Dec 12	"	Dec 31	Ann. Inspection
North Ladder	Dec 5	"	Dec 9	Ann. Inspection
F1	Jan 1	Thru	Jan 10	Fishway Inspection
	Feb 2	"	Feb 2	Vac. Bkr.
	Sep 6	"	Sep 6	Brushes
	Dec 14	"	Dec 31	Fishway Inspection
F2	Jan 1	Thru	Jan 13	4 yr. Overhaul
	Sep 7	"	Sep 7	Brushes
	Dec 8	"	Dec 31	Ann. Main.

JOHN DAY

Fishways - 1983-1984

Counters Start 1 Apr 83

Counters Finish 1 Nov 83

North Ladder	OOS	7 Dec 83	0930
North Ladder	In Service	15 Dec 83	1400
South Ladder	OOS	4 Jan 83	0930
South Ladder	OOS	9 Jan 84	0818
South Ladder	In Service	27 Jan 84	1518
South Ladder	In Service	10 Jan 83	1445

Powerhouse Fish Turbines

	In Service	Standby	Out of Service
1-	7384.2	1.9	1373.9
2-	5835.1	4.3	2920.6
3-	7328.7	38.8	1392.5
		North Fish Pumps	
1-	4491.9	3212.1	1056.0
2-	5174.4	2691.4	894.2
3-	4456.3	3173.7	1130.0
4-	5367.3	2188.7	1204.0
5-	3201.7	2814.5	2743.8
6-	1002.9	748.8	7008.3

McNARY DAM - 1983

1983 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

1983 Fish Ladder Operating Schedule

North Ladder	1 Jan - 23 Jan	In service
North Ladder	24 Jan - 27 Jan	Out of service for annual inspection and maintenance
North Ladder	28 Jan - 31 Dec	In service
South Ladder	1 Jan - 30 Jan	In service
South Ladder	31 Jan - 3 Feb	Out of service for annual inspection and maintenance
South Ladder	4 Feb - 4 Dec	In service
South Ladder	5 Dec	Out of service for diffuser inspection
South Ladder	6 Dec - 18 Dec	In service
South Ladder	19 Dec - 31 Dec	Out of service for diffuser repair and annual maintenance

1983 Fishway 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.

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.

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 2 April to 22 September.

ICE HARBOR DAM - 1983

1983 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

1983 Fish Ladder Operating Schedule

North Ladder	1 Jan - 21 Feb	In service
North Ladder	22 Feb - 28 Feb	Out of service for annual inspection and maintenance
North Ladder	1 Mar - 31 Dec	In service
South Ladder	1 Jan - 13 Feb	In service
South Ladder	14 Feb - 17 Feb	Out of service for annual inspection and maintenance
South Ladder	18 Feb - 31 Dec	In service

1983 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.

Sluiceway gates 1A, 2A, 3A, 4A, 5A, and 6A were automated with electric hoists for operating the sluiceway as a juvenile bypass system. BioSonics, Inc., evaluated the sluiceway with hydroacoustic equipment to determine its efficiency as a bypass system. The sluiceway operated 5 April through 26 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 - 1983

1983 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

1983 Fish Ladder Operating Schedule

North Ladder	1 Jan - 13 Feb	In service
North Ladder	14 Feb - 15 Feb	Out of service for annual inspection, maintenance, and removal of electronic impedance tunnel equipment
North Ladder	16 Feb - 31 Dec	In service
South Ladder	1 Jan - 6 Feb	In service
South Ladder	7 Feb - 10 Feb	Out of service for annual inspection and maintenance
South Ladder	11 Feb - 31 Dec	In service

1983 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.

Walla Walla District conducted a sonar monitoring program to monitor the effectiveness of spills for passing downstream migrating juvenile salmonids.

LITTLE GOOSE DAM - 1983

1983 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

1983 Fish Ladder Operating Schedule

Project Ladder	1 Jan - 2 Feb	In service
Project Ladder	3 Feb - 10 Feb	Out of service for annual inspection and maintenance
Project Ladder	11 Feb - 31 Dec	In service

1983 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 1983 to count fish as they moved past the fish counting window to give an estimate of total project passage.

Fish pump number 3 was out of service on 8 June to repair a damaged ratchet assembly.

The juvenile collecton system was in operation from 3 April to 8 July.

LOWER GRANITE DAM - 1983

1 Jan - 28 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

1983 Fish Ladder Operating Schedule

Project Ladder	1 Jan - 10 Jan	In service
Project Ladder	11 Jan - 25 Jan	Out of service for annual inspection and maintenance
Project Ladder	26 Jan - 31 Dec	In service

1983 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.

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 collection system was in operation from 1 April to 30 July.

TABLE 1
FISH ESCAPEMENT AT MAIN STEM DAMS
COLUMBIA AND SNAKE RIVERS 1979 to 1983

SPECIES	BONNEVILLE	THE DALLES	JOHN DAY	MCNARY	ICE HARBOR	LOWER MONUMENTAL	LITTLE GOOSE	LOWER GRANITE	PRIEST RAPIDS	ROCKY REACH
1979										
CHINOOK*	276,306	150,647	118,154	95,275	13,929	11,288	12 515	12 548	38,166	14,891
Spring*	51,462	27,297	21,981	21,153	9,247	7,921	7,880	7,539	7,750	2,186
Summer*	34,217	32,298	23,572		2,608	2,083	3,445	3,572	22,689	9,986
Fall*	190,627	91,052	72,601	49,961	2,074	1,284	1,190	1,437	7,727	2,719
Jacks	55,955	42,886	41,364	25,442	2,422	1,916	1,982	2,578	5,603	3,608
STEELHEAD	113,979	83,364	55,877	50,304	23,117	17,794	21,049	25,046	8,415	4,896
SOCKEYE	52,628	32,791	43,630	37,792	30	31	72	25	45,662	28,747
COHO*	45,328	8,726	5,061	12,800	398	194	390	158	311	244
Adults	29,612	3,890	3,891	6,519	125	20	200	50	282	
Jacks	15,716	4,836	1,170	6,281	273	74	190	108	29	
SHAD	1,039,857	1,398,224	646,187	361,024	10,489	4,908	121	75	20,196	0
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	2,088	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	13,668	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*	30,510	6,941	2,562	3,736	82	63	120	17	433	522
Adults	21,935	2,536	943	1,725	25	19	8	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	9,221
Spring*	78 144	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*	220,131	108,590	91,192	57,299	3,519	2,378		2,202	13,091	2,885
Jacks	74,898	60,163	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	1,004,820	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		86,234	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	[illegible]	0
ASSUMED DATES FOR CHINOOK RUNS (SEE TEXT FOR DETAILS ABOVE)										
SPRING	15 Mar - 31 May	1 Apr - 3 Jun	1 Apr - 5 Jun	1 Mar - 8 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
1938-1983

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
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	243,834	213,779	100,527	15,176	48	29	555,452
TOTAL	16,226,660	6,592,171	4,039,464	1,313,597	38,244	1,292	28,211,428
46-YEAR AVERAGE	352,753	143,308	87,814	28,556	831		613,292

TABLE 3

MONTHLY TOTALS OF SALMONII AND SHAD COUNTED OVER BONNEVILLE DAM
1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	144	25,540	31,154	12,793	10,665	25,524	116,879	20,458	677	-	243,834
STEELHEAD	-	-	465	1,253	1,638	6,017	67,144	83,289	48,920	4,636	417	-	213,779
SOCKEYE	-	-	-	-	1	52,134	48,004	381	5	2	-	-	100,527
COHO	-	-	-	-	-	-	51	315	7,237	5,020	2,553	-	15,176
CHUM	-	-	-	-	-	-	-	-	16	2	30	-	48
PINK	-	-	-	-	-	-	-	-	15	14	-	-	29
TOTAL SALMONID	-	-	609	26,793	32,793	70,944	125,864	109,509	173,072	30,132	3,677	-	573,393
SHAD	-	-	-	-	78,106	1,224,342	116,283	952	112	37	1	-	1,419,833

TABLE 4

DISCHARGE AND WATER QUALITY DATA
BONNEVILLE DAM - 1983

DATE	JANUARY			FEBRUARY		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	175.1	3.0	42.0	228.0	3.2	41.0
2	162.7	3.0	42.0	222.5	3.2	41.0
3	171.2	4.5	41.0	255.3	3.0	41.0
4	180.7	5.0	41.0	261.2	3.0	41.0
5	209.9	4.2	42.0	219.1	4.0	41.0
6	267.7	3.0	42.0	176.8	4.0	41.0
7	297.6	3.0	42.0	228.8	4.0	41.0
8	214.6	3.0	42.0	240.5	3.6	40.0
9	220.8	2.0	41.0	241.0	3.5	40.0
10	196.0	1.8	41.0	251.2	3.6	40.0
11	214.0	2.6	41.0	247.5	4.0	41.0
12	184.8	2.6	41.0	239.9	4.0	41.0
13	235.5	2.0	41.0	192.9	4.0	41.0
14	254.1	2.0	41.0	203.0	4.0	40.0
15	231.6	1.8	41.0	219.1	4.0	40.0
16	195.7	1.5	41.0	239.7	3.5	42.0
17	210.0	1.5	41.0	228.5	3.5	41.0
18	234.5	1.5	41.0	249.7	3.5	41.0
19	240.6	2.3	43.0	265.1	2.9	42.0
20	225.8	1.5	41.0	273.3	1.5	42.0
21	221.4	1.3	41.0	288.7	1.5	42.0
22	194.6	1.3	41.0	300.9	1.2	42.0
23	180.8	1.0	41.0	300.3	1.5	42.0
24	201.2	1.0	41.0	300.0	1.2	43.0
25	207.1	1.0	41.0	295.2	1.2	43.0
26	217.3	1.5	41.0	285.7	1.5	43.0
27	220.2	2.0	41.0	287.0	1.5	43.0
28	221.2	2.6	41.0	318.6	1.5	44.0
29	205.3	2.6	41.0			
30	164.2	3.0	42.0			
31	186.0	3.0	42.0			

TABLE 5

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MARCH 1983

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										329.3	99.1	1.5	44.0
2										341.7	109.8	1.4	44.0
3										349.1	119.4	1.4	44.0
4										358.9	138.5	1.5	44.0
5										355.2	171.7	1.6	44.0
6										328.2	171.0	2.0	44.0
7										347.0	163.1	2.0	45.0
8										362.8	152.2	1.6	46.0
9										358.8	171.5	1.6	46.0
10										355.3	170.2	1.0	45.0
11										340.7	172.2	1.0	45.0
12										345.9	169.2	1.0	45.0
13										354.1	174.2	1.2	45.0
14										363.5	181.0	1.2	46.0
15								13		370.2	182.3	1.3	46.0
16	3							28		372.7	180.5	1.0	46.0
17	1							44		382.4	179.8	1.2	46.0
18	2							42		387.9	180.6	1.4	46.0
19	2							36		384.0	174.1	1.1	47.0
20	3							32		371.8	175.4	1.2	47.0
21	3							32		356.1	181.5	1.1	47.0
22	2							23		345.0	181.4	1.2	47.0
23	9							26		340.0	181.5	2.0	47.0
24	8			1				21		338.3	181.5	2.0	47.0
25	2							23		335.0	181.6	2.2	48.0
26	18			1				17		300.3	180.9	2.0	47.0
27	17							31		294.4	179.7	2.5	47.0
28	35							40		320.1	78.8	2.2	47.0
29	11							19		353.7	68.4	2.2	47.0
30	8							20		363.9	71.3	2.2	47.0
31	17			1				18		346.8	53.4	1.2	47.0
TOTALS	141			3				465					
AVERAGES	9			1				27		350.1	154.1		

TABLE 6

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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	38							39		345.9	51.5	1.2	48.0
2	50							35		349.3	52.9	1.3	48.0
3	50							45		312.0	25.1	1.3	48.0
4	119			1				34		285.9	.0	1.5	49.0
5	234			2				26		284.7	.0	1.5	48.0
6	151			2				26		309.8	50.0	1.5	49.0
7	130			6				22		299.5	51.1	1.5	48.0
8	321			2				35		260.5	119.9	1.8	49.0
9	448			1				33		231.3	119.8	2.0	49.0
10	262			1				27		267.7	119.6	2.0	49.0
11	368			1				42		276.8	86.9	1.8	49.0
12	453			2				40		260.9	1.8	2.0	49.0
13	519			4				53		297.0	.0	1.8	49.0
14	705			4				55		273.0	15.0	1.5	50.0
15	1,055			3				52		260.6	.0	1.7	50.0
16	1,464			8				52		249.8	.0	1.7	50.0
17	2,235			17				50		245.6	.6	1.7	50.0
18	1,559			15				61		250.5	12.6	1.8	50.0
19	1,190			13				47		259.0	17.9	2.1	52.0
20	1,218			9				43		228.6	12.7	2.2	52.0
21	1,350			18				31		199.5	.0	2.4	52.0
22	2,163			24				58		207.0	2.6	2.3	52.0
23	1,316			14				61		276.7	61.3	2.3	52.0
24	955			18				41		297.0	55.8	2.3	52.0
25	1,245			15				53		310.5	53.2	2.3	53.0
26	950			20				38		356.6	76.2	2.3	53.0
27	1,092			20				36		344.5	55.4	2.0	53.0
28	1,165			29				42		331.9	57.6	2.0	53.0
29	1,134			25				45		320.5	46.0	2.0	53.0
30	1,293			34				31		308.4	52.0	2.5	53.0
TOTAL	25,232			308				1,253					
AVERAGES	841			11				42		283.4	39.9		

TABLE 7

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	1,235			27				40		307.5	53.7	2.5	53.0
2	1,455			37				46		304.3	30.3	2.0	53.0
3	1,215			37				41		316.4	50.0	1.8	53.0
4	1,350			62				32		308.7	40.7	1.8	53.0
5	1,655			67				42		305.5	26.5	1.8	54.0
6	1,346			63				35		305.4	30.5	1.8	54.0
7	1,071			43				49		331.8	54.0	2.0	54.0
8	1,349			65				49		328.1	45.9	1.7	54.0
9	866			48				29		324.5	45.1	1.0	54.0
10	817			57				25		337.3	66.7	1.3	54.0
11	1,118			74				35		359.4	69.7	1.5	54.0
12	1,420			74				44	1	310.7	73.5	1.8	54.0
13	1,679			79				42		309.0	82.7	2.0	55.0
14	1,568			81				41		310.9	119.8	2.1	55.0
15	1,586			68				40	2	290.0	119.6	2.2	55.0
16	1,104			71				32	1	286.4	122.0	2.2	55.0
17	1,120			49				34		265.9	122.5	2.2	55.0
18	888			67				52	7	278.5	120.2	2.0	55.0
19	898			66				49	7	266.9	119.5	2.1	59.0
20	876			60				53	67	285.5	119.4	2.2	55.0
21	696			38				51	143	264.1	119.4	2.3	58.0
22	591			50				70	144	270.1	119.6	2.3	59.0
23	487			49				76	226	288.0	119.2	2.3	59.0
24	424			49				86	3,455	314.0	118.9	2.3	59.0
25	477			48				68	9,821	326.1	118.8	2.3	61.0
26	426			51				76	8,685	359.9	119.7	2.3	61.0
27	386			35				76	13,023	388.1	132.6	2.3	61.6
28	301			31				72	11,418	395.8	150.0	2.0	62.0
29	399			28			1	99	15,127	393.6	150.0	2.0	62.0
30	375			35				78	9,622	399.1	150.8	2.0	62.0
31	347			20				76	6,357	405.3	150.9	2.0	62.0
TOTAL	29,525			1,629			1	1,638	78,106				
AVERAGES	952			53			1	53	4,594	320.5	95.6		

TABLE 8

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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		357		21				71	3,473	402.3	150.6	2.0	62.0
2		219		15				107	11,657	408.2	151.0	2.0	62.0
3		251		31			1	77	11,722	388.4	150.8	2.0	62.0
4		315		34			5	87	12,083	369.6	151.0	1.9	62.0
5		356		36			9	76	13,146	358.0	151.1	1.8	62.0
6		286		37			9	73	13,746	358.9	150.6	2.0	62.0
7		337		30			10	93	22,955	356.4	151.3	2.0	62.0
8		408		47			18	100	45,878	338.2	151.1	2.0	62.0
9		316		41			46	120	37,339	345.1	150.7	2.0	62.0
10		357		36			45	114	21,298	324.5	150.4	2.0	62.0
11		381		33			79	144	19,802	328.6	151.4	1.7	61.0
12		298		34			150	115	25,652	329.7	154.6	1.7	61.0
13		276		39			194	125	25,542	327.2	151.7	1.7	62.0
14		405		50			315	145	45,829	302.1	133.5	1.7	61.0
15		431		50			499	131	38,105	268.4	121.8	2.0	62.0
16		394		48			508	157	37,789	260.2	123.1	2.6	63.0
17		350		38			646	131	60,880	286.6	118.7	2.6	63.0
18		373		45			869	155	40,781	258.4	85.2	2.4	63.0
19		416		47			1,035	185	72,689	246.0	64.5	2.3	62.0
20		427		43			1,243	197	83,468	250.0	69.7	2.8	63.0
21		320		36			1,688	185	76,368	268.0	85.2	2.8	63.0
22		338		79			2,003	200	77,813	249.5	74.0	3.0	64.0
23		392		111			3,137	248	55,264	261.3	102.5	3.0	63.0
24		390		95			4,002	214	53,538	246.6	64.1	2.9	63.0
25		484		118			5,536	362	40,188	195.5	45.5	2.8	63.0
26		399		82			4,963	285	105,400	208.1	29.8	2.7	63.0
27		359		133			5,925	358	37,330	225.8	32.4	2.7	63.0
28		463		116			6,467	611	81,459	214.0	.7	2.7	63.0
29		439		135			6,757	536	39,182	203.3	.0	2.6	64.0
30		432		164			5,975	615	13,966	206.5	6.5	2.8	64.0
TOTALS		10,969		1,824			52,134	6,017	1,224,342				
AVERAGES		366		61			1,862	201	40,811	292.8	104.3		

TABLE 9

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		335		188			5,712	721	15,461	199.1	16.0	3.4	64.0
2		314		139			4,810	603	14,300	195.0	37.7	3.4	64.0
3		313		179			3,892	644	9,061	217.5	97.8	3.4	64.0
4		313		145			3,703	691	6,039	212.6	93.4	3.5	64.0
5		243		121			3,031	757	8,527	208.1	87.9	3.5	65.0
6		247		166			3,143	750	5,306	230.9	98.4	3.5	66.0
7		239		133			3,278	769	7,230	255.5	98.2	3.5	66.0
8		304		169			2,782	988	5,656	246.2	98.3	3.0	66.0
9		348		142			2,451	1,140	10,746	200.6	43.6	2.5	66.0
10		408		134			2,301	1,462	7,305	151.0	.0	3.6	66.0
11		239		92			2,015	1,273	4,513	178.9	20.1	4.5	66.0
12		171		90			1,649	1,340	2,635	223.1	91.1	4.5	66.0
13		124		66			1,404	1,411	1,951	225.1	76.9	4.5	66.0
14		139		108			1,014	1,574	1,776	221.1	65.0	3.0	66.0
15		127		77			661	1,539	1,572	217.4	78.8	3.0	66.0
16		159		121			647	1,369	1,432	257.8	98.3	2.0	66.0
17		170		112			601	1,641	2,245	228.6	101.0	2.8	66.0
18		186		127			840	2,603	1,620	237.8	98.3	2.8	67.0
19		213		102			1,036	2,311	1,521	235.0	98.3	2.8	67.0
20		172		101			568	1,919	992	229.2	98.2	2.8	67.0
21		273		131			520	2,452	895	238.3	98.4	2.8	67.0
22		238		115			440	3,470	1,084	222.4	81.3	3.0	67.0
23		263		122			329	3,957	1,192	200.3	49.4	2.8	68.0
24		225		87			261	5,304	953	183.7	61.2	3.0	68.0
25		201		120	5		213	4,200	346	199.8	52.4	3.2	68.0
26		183		136	6		159	4,740	192	203.9	60.3	3.2	67.0
27		170		106	8		118	3,614	333	236.4	80.8	2.8	67.0
28		167		82	2		119	4,065	291	223.8	70.4	3.2	67.0
29		173		66	14		116	1,948	339	227.4	69.9	3.2	70.0
30		240		51	5		107	4,059	469	210.4	49.9	3.2	69.0
31		180		60	10	1	84	3,830	301	209.5	47.6	3.3	71.0
TOTALS		7,077		3,588	50	1	48,004	67,144	116,283				
AVERAGES		228		116	7	1	1,549	2,166	3,751	217.0	71.6		

TABLE 10

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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			235	87	8	1	74	5,184	133	204.0	37.8	3.5	70.0
2			289	70	7		65	4,750	199	193.8	22.1	3.5	70.0
3			254	70	12		29	3,606	72	201.0	24.2	3.6	70.0
4			274	66	2		47	3,976	98	202.7	22.0	3.6	70.0
5			220	57	7		24	2,652	91	190.0	17.5	3.3	70.0
6			233	52	7		17	3,031	27	194.7	15.0	3.4	71.0
7			126	39	2	1	3	1,822		191.3	11.4	3.4	70.0
8			213	71	3	2	14	3,010	21	181.3	3.4	3.4	70.0
9			266	86			9	2,606	23	175.9	.5	3.4	70.0
10			182	62	1	2	14	2,612	31	175.6	.0	3.4	70.0
11			223	74		1	7	2,527	20	174.5	.0	3.4	70.0
12			232	101	3	4	3	3,089	17	178.3	.0	4.2	69.0
13			234	81	4	1	4	1,865	20	175.7	1.1	4.2	70.0
14			333	72	3	2	2	2,586	57	156.1	.0	4.5	70.0
15			317	69	4		20	1,970	29	161.7	.0	4.5	71.0
16			534	146	4	4	8	2,922		149.5	.0	4.5	71.0
17			565	99	3	5	2	2,170	11	166.2	.0	4.5	71.0
18			733	135	1	1	1	1,957	7	175.2	.0	4.5	71.0
19			599	112		2	7	2,231	30	185.5	.0	4.7	71.0
20			739	133	1	1	1	2,913	37	207.2	.0	4.6	71.0
21			109	18			1	578	15	173.9	.0	4.9	71.0
22			546	92	1	2	3	1,750	21	179.4	.0	4.5	71.0
23			628	156		7	8	2,702	11	133.6	.0	4.5	71.0
24			537	111	1	4	6	2,406	13	146.0	.0	5.0	71.0
25			820	211	1	7	4	2,759	13	137.5	.0	6.0	71.0
26			1,164	179	3	7	2	2,802	14	135.0	.0	5.2	71.0
27			1,141	183	3	6		2,843	10	134.1	.0	5.6	71.0
28			2,201	254	8	13	1	2,459	8	130.8	.0	5.2	71.0
29			2,907	297	12	14	4	2,355	9	117.9	.0	5.2	70.0
30			2,722	456	31	33	1	2,879	6	127.4	.0	5.0	70.0
31			1,902	407	27	36		2,277	7	153.8	.0	5.2	70.0
TOTALS			21,478	4,046	159	156	381	83,289	1,050				
AVERAGES			693	131	5	5	12	2,687	34	168.1	5.0		

TABLE 11

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1			1,283	334	27	16		1,839	11	181.2	.0	4.8	69.0
2			1,950	415	38	29		2,277	8	144.5	.0	.4	70.0
3			3,493	584	81	76		2,704	8	135.4	.0	4.4	70.0
4			4,370	746	99	90		2,382	9	120.3	.0	4.6	70.0
5			3,252	843	98	133	1	2,306	1	104.5	.0	4.3	69.0
6			2,508	867	147	120		2,147	2	121.8	.0	4.4	68.0
7			1,861	769	150	123		1,757	2	159.5	.0	4.5	68.0
8			2,338	866	175	120		1,654	2	141.0	.0	5.0	68.0
9			3,212	1,403	206	101		1,755	5	107.3	.0	4.8	69.0
10			2,398	1,065	198	99	1	1,524	6	140.2	.0	3.8	67.0
11			4,246	1,421	273	126		1,901	6	132.3	.0	3.5	67.0
12			3,397	1,278	241	112	1	1,566	5	103.9	.0	3.5	68.0
13			3,572	1,486	233	164		1,621	5	102.5	.0	3.8	68.0
14			4,654	1,865	337	204		2,300	2	117.6	.0	3.8	68.0
15			5,181	2,049	280	155		2,112	1	130.0	.0	3.8	68.0
16			4,800	1,993	221	160		2,167	1	109.1	.0	5.2	68.0
17			5,308	2,511	239	136		2,152	3	150.2	.0	5.0	68.0
18			3,197	1,469	147	70		1,699	5	111.2	.0	5.0	67.0
19			2,532	1,560	183	118		1,427	2	113.4	.0	5.0	67.0
20			1,671	1,224	127	66		1,235	2	141.9	.0	5.0	66.0
21			1,816	1,355	125	76		1,419	10	121.2	.0	4.4	64.0
22			1,498	1,201	99	78		1,228	7	136.4	.0	4.4	65.0
23			1,692	1,652	132	98	2	1,353	2	134.9	.0	5.7	64.0
24			1,694	1,676	58	53		1,466	1	111.0	.0	5.5	65.0
25			1,642	1,714	83	56		1,199		102.9	.0	5.8	65.0
26			2,003	1,591	84	64		1,200	2	100.9	.0	5.5	65.0
27			1,381	1,193	117	117		862		120.9	.0	5.5	65.0
28			965	686	51	47		550	1	131.9	.0	5.5	65.0
29			902	660	35	46	0	523	2	127.1	.0	5.5	64.0
30			926	661	63	37	0	595	1	120.6	.0	5.0	64.0
TOTALS			79,742	37,137	4,347	2,890	5	48,920	112				
AVERAGES			2,658	1,238	145	96	1	1,631	4	125.9	.0		

TABLE 12

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

DATE	CHINOOK ADULTS SPRING	CHINOOK ADULTS SUMMER	CHINOOK ADULTS FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECCHI)	WATER TEMP (DEG F)
1			1,263	785	44	63		538	2	113.9	.0	5.8	64.0
2			864	620	46	62		427		100.3	.0	5.0	64.0
3			956	674	60	51		431		113.3	.0	5.0	64.0
4			1,141	591	87	50		346	1	123.6	.0	5.0	63.0
5			701	542	66	50		328	2	138.2	.0	5.0	63.0
6			575	471	59	30		263		122.7	.0	5.8	63.0
7			551	454	62	33		204		113.6	.0	5.8	63.0
8			477	346	39	40		151		98.9	.0	5.8	62.0
9			409	402	41	57		130	2	94.3	.0	6.0	62.0
10			358	367	57	63		125	1	113.8	.0	6.2	61.0
11			303	278	50	71		133	2	136.1	.0	6.2	61.0
12			266	278	69	53		127	1	173.4	.0	6.2	61.0
13			234	271	91	71		119	4	117.0	.0	6.2	61.0
14			216	334	100	79		135	7	110.9	.0	6.2	60.0
15			343	311	98	90		114	1	119.3	.0	6.2	60.0
16			228	262	75	58		94	1	135.3	.0	5.8	59.0
17			237	246	67	50		61	2	111.8	.0	5.8	59.0
18			162	272	72	72		40	1	142.3	.0	4.5	59.0
19			181	167	68	114		87	2	133.8	.0	4.5	59.0
20			232	186	73	89	1	80	2	132.0	.0	4.5	59.0
21			196	190	85	95		77	2	140.7	.0	4.5	59.0
22			294	213	99	99		84	-1	103.3	.0	4.5	59.0
23			186	171	81	93		98	1	100.3	.0	4.5	59.0
24			140	185	92	100		104	1	113.4	.0	4.5	59.0
25			122	133	106	108		84		124.7	.0	4.8	58.0
26			111	96	128	105		74		107.3	.0	5.7	58.0
27			91	120	119	124		44		100.2	.0	5.8	58.0
28			91	104	125	98		29	2	124.3	.0	5.8	58.0
29			75	90	117	136	1	32		130.0	.0	5.8	58.0
30			77	78	121	108		41		122.9	.0	6.0	58.0
31			86	55	146	165		36	1	119.7	.0	5.8	58.0
TOTALS			11,166	9,292	2,543	2,477	2	4,636	37				
AVERAGES			360	300	82	80	1	150	2	120.4	.0		

TABLE 13

MONTHLY FISH PASSAGE SUMMARY REPORT - BONNEVILLE DAM PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - NOVEMBER 1983

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			62	39	105	84		45		120.3	.0	5.8	58.0
2			61	49	158	129		40		120.2	.0	5.5	58.0
3			48	26	105	75		40		133.1	.0	5.5	58.0
4			32	74	182	153		35		131.7	.0	5.2	58.0
5			18	47	105	74		43		139.8	.0	5.2	58.0
6			20	32	122	86		30		132.1	.0	3.5	58.0
7			10	13	79	121		25		139.5	.0	4.5	56.0
8			14	11	66	112		14		145.7	.0	4.5	56.0
9			9	10	39	35		18		150.5	.0	4.5	56.0
10			12	7	58	42		20		154.5	.0	3.5	56.0
11			11	11	102	67		31	1	141.4	.0	4.5	55.0
12			17	13	60	71		16		136.6	.0	4.8	55.0
13			12	6	75	100		30		136.8	.0	4.5	55.0
14			4		16	50		18		136.9	.0	4.5	55.0
15			5	4	30	52		12		135.7	.0	4.3	55.0
16										142.0	.0	4.2	54.0
17										161.3	.0	4.2	54.0
18										180.6	.0	4.0	54.0
19										198.1	.0	4.0	54.0
20										177.4	.0	4.0	53.0
21										203.1	.0	4.0	52.0
22										207.7	.0	4.0	52.0
23										206.2	.0	4.0	52.0
24										178.5	.0	4.0	52.0
25										177.0	.0	4.0	51.0
26										182.6	.0	4.0	51.0
27										160.4	.0	4.0	51.0
28										167.8	.0	4.0	51.0
29										195.3	.0	4.0	51.0
30										230.2	.0	4.0	51.0
TOTALS			335	342	1,302	1,251		417	1				
AVERAGES			22	24	87	83		28	1	160.8	.0		

TABLE 14

WATER TEMPERATURE AND STREAM FLOW DATA
BONNEVILLE - 1982

DECEMBER			
DATE	WATER TEMP.	DISCHARGE	TURBIDITY
1	50.0	224.5	4.0
2	50.0	221.7	4.0
3	50.0	194.3	3.5
4	48.0	173.9	4.5
5	48.0	233.5	4.5
6	48.0	220.2	4.5
7	48.0	197.2	4.0
8	48.0	194.2	4.3
9	46.0	194.9	4.7
10	46.0	159.8	4.9
11	46.0	150.8	4.9
12	46.0	165.8	5.0
13	46.0	193.5	5.0
14	46.0	194.2	5.0
15	45.0	190.7	5.0
16	45.0	202.3	4.6
17	45.0	205.7	4.6
18	44.0	195.9	4.6
19	44.0	230.8	4.6
20	44.0	216.8	4.6
21		253.5	
22		225.7	
23		233.0	
24		221.1	
25		138.1	
26		139.4	
27		177.2	

TABLE 15

PEAK DAYS OF FISH MIGRATION
BONNEVILLE DAM - 1938-1982

	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 - 1938-1983

	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	6,121	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	19303	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 6	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	8,264	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	464	Sep 17	5,305	Jul 24	5,304	Jul 1	5,712	Sep 14	541	Nov 5	6	Jun 22	128,914

* 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 - 1938-1983

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*
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	1,139	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 - 1938-1983

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*
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
TOTAL	40	45	40,206	2,368,769	1,880,696	1,504,091	1,163,570	1,521,564	7,485,095	247,438	14,601		16,226,322	4,288,686	2,668,393	9,268,903
46-YEAR AVERAGE			874	51,495	40,885	32,698	25,295	33,077	162,719	5,379	317		352,746	93,232	58,009	201,498

TABLE 17

MONTHLY COUNT OF SOCKEYE SALMON
BONNEVILLE DAM - 1938-1983

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 - 1983

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
TOTAL			76	538	7,860	1,403,637	2,585,232	39,439	2,532	131	32	1	4,039,465
46-Year Average					171	30,514	56,201	857	55				87,814

TABLE 18

MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM - 1938-1983

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 - 1938-1983

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
TOTAL	21	12	5	1		169	4,169	139,276	1,021,479	128,367	20,030	66	1,313,595	401,764
46-YEAR AVERAGE							91	3,028	22,206	2,791	435		28,556	8,734

** 17-YEAR AVERAGE

TABLE 19

MONTHLY COUNT OF STEELHEAD TROUT
BONNEVILLE DAM - 1938-1983

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 - 1938-1983

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	SPRING JAN 1-MAY 31	SUMMER JUN 1-AUG 25	FALL AUG 26-DEC 31
1968			340	861	1,315	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
TOTAL	1,565	2,486	43,515	144,867	105,244	221,807	2,218,640	2,014,830	1,701,495	113,934	21,497	2,291	6,592,171	297,677	4,083,301	2,211,193
46-YEAR AVERAGE			946	3,149	2,288	4,822	48,231	43,801	36,989	2,477	467		143,308	6,471	88,767	48,069

TABLE 20

MONTHLY COUNT OF SHAD AND PERCENT COUNTED OVER FISH LADDERS
BONNEVILLE DAM - 1938-1983

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 - 1938-1983

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		
TOTAL			3	11	277,589	7,193,766	4,565,552	84,381	3,579	447	26		12,125,354		
46-YEAR AVERAGE					6,035	156,386	99,251	1,834	78	10			263,595		

TABLE 21
YEARLY TOTALS OF SALMONID FISH COUNTED OVER THE DALLES DAM
1957-1983

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	157,210	170,643	84,202	3,457	1	-	415,513
TOTAL	5,961,133	3,183,848	1,670,089	361,677	192	63	11,147,365
27-YEAR AVERAGE	220,782	117,920	61,855	13,395			412,865

TABLE 22

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER THE DALLES DAM

1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	13,276	22,893	8,766	8,430	12,448	75,009	16,388	-	-	157,210
STEELHEAD	-	-	-	466	324	1,492	37,029	47,133	75,210	8,989	-	-	170,643
SOCKEYE	-	-	-	-	-	34,684	49,302	196	19	1	-	-	84,202
COHO	-	-	-	-	-	-	-	65	2,341	1,051	-	-	3,457
TOTAL SALMONID	-	-	-	13,742	23,217	44,942	94,761	59,842	152,579	26,429	-	-	415,512
SHAD	-	-	-	-	53,799	1,658,762	216,973	2,228	231	7	-	-	1,932,000

TABLE 23
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES DAM - 1983

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	162.7	4.0	42.0	200.5	2.5	41.0	303.6	1.5	42.0
2	134.6	4.0	41.0	230.4	3.0	41.0	324.6	1.5	42.0
3	179.9	4.5	41.0	237.5	3.0	41.0	328.8	1.7	42.0
4	164.4	3.2	42.0	251.9	3.0	41.0	356.1	1.9	43.0
5	172.5	4.5	40.0	192.8	3.0	41.0	345.1	2.3	43.0
6	222.6	3.9	40.0	168.2	3.3	40.0	309.6	2.5	43.0
7	228.3	3.3	40.0	219.6	4.0	41.0	336.3	2.4	44.0
8	158.4	2.5	40.0	221.1	3.8	40.0	355.8	2.5	44.0
9	195.3	2.5	40.0	233.6	4.6	40.0	337.9	2.3	44.0
10	146.4	2.6	40.0	245.3	4.5	39.0	318.7	1.2	44.0
11	179.5	2.9	40.0	226.0	4.0	39.0	318.8	1.1	44.0
12	172.5	3.2	40.0	194.4	3.5	39.0	306.7	1.2	45.0
13	218.9	3.2	40.0	163.5	3.5	40.0	332.6	1.5	45.0
14	231.8	1.6	41.0	190.4	3.5	40.0	350.1	2.0	45.0
15	207.1	2.0	41.0	191.7	3.8	40.0	354.2	1.0	45.0
16	173.5	2.0	41.0	223.5	4.5	40.0	358.2	1.0	45.0
17	197.7	1.6	41.0	204.2	4.5	40.0	373.4	.8	45.0
18	223.7	1.5	41.0	202.4	4.0	40.0	376.9	1.4	45.0
19	218.6	1.6	41.0	222.9	.8	40.0	372.8	1.7	45.0
20	209.9	1.5	41.0	253.2	.5	40.0	358.5	1.5	46.0
21	203.5	1.0	41.0	261.4	.9	41.0	342.6	1.5	46.0
22	179.9	1.0	40.0	270.1	1.0	41.0	328.5	1.5	46.0
23	156.1	1.5	40.0	279.4	1.6	41.0	324.4	1.5	46.0
24	195.4	1.5	40.0	273.1	2.0	41.0	321.2	1.5	46.0
25	190.4	1.5	40.0	253.4	2.0	41.0	322.2	1.9	46.0
26	187.6	1.5	40.0	270.9	1.5	42.0	272.8	2.0	46.0
27	202.4	3.0	40.0	252.9	1.5	42.0	276.4	2.1	46.0
28	206.3	2.5	40.0	300.3	1.5	42.0	309.4	2.1	46.0
29	171.1	2.5	40.0				328.8	2.0	46.0
30	134.5	2.5	40.0				317.3	2.0	46.0
31	184.6	2.5	40.0				303.3	1.5	46.0

TABLE 24

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECHI)	WATER TEMP (DEG F)
1	17			8		1		44	50	324.1	86.1	1.3	46.0
2	6							9		312.8	44.0	1.5	46.0
3	14							14		276.6	74.2	2.2	46.0
4	6			2				10		261.5	35.1	1.5	46.0
5	15							22		285.5	96.4	2.0	47.0
6	29							17		284.6	3.8	1.5	46.0
7	8							16		271.2	23.3	1.5	48.0
8	63			3				23		233.9	.0	2.0	48.0
9	60			1				12		207.0	5.7	1.8	48.0
10	52							17		240.4	15.8	2.0	48.0
11	63			4				8		248.3	4.0	2.0	48.0
12	154			1				15		257.7	11.2	1.8	48.0
13	137			1				11		275.6	14.5	1.6	48.0
14	164			2				9		260.7	26.8	2.0	48.0
15	229			6				5		237.2	30.3	1.8	48.0
16	272			8				9		232.6	22.6	2.0	48.0
17	406			6				12		212.0	25.3	2.0	48.0
18	460			8				11		231.1	22.4	2.0	48.0
19	782			12				25		229.2	22.4	2.2	49.0
20	1,378			19				29		210.0	9.7	2.2	49.0
21	1,379			24				21		190.6	.0	2.5	50.0
22	1,221			16				21		208.4	1.8	2.5	50.0
23	900			6				15		247.5	40.1	2.5	51.0
24	1,330			11				20		261.0	143.0	2.5	51.0
25	524			21				10		320.4	69.8	2.5	51.0
26	452			12				6		339.2	97.6	2.1	51.0
27	583			15				20		311.2	144.2	1.6	51.0
28	1,022			13				5		323.4	108.0	2.1	51.0
29	628			8				9		300.9	56.1	2.0	52.0
30	689			26				21		295.8	90.3	2.1	53.0
TOTAL	13,043			233		1		466	50				
AVERAGE	435			10		1		16	50	263.0	44.2		

TABLE 25

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	908			33				29		273.9	55.2	2.1	53.0
2	704			32				12		307.3	64.5	1.7	53.0
3	760			17				16		287.2	45.1	2.0	53.0
4	716			25				14		301.1	52.1	1.6	53.0
5	1,270			46				8		280.6	34.3	2.0	53.0
6	941			35				9		301.7	41.9	2.0	53.0
7	872			25				2		314.0	101.4	1.0	54.0
8	844			18				1		320.3	123.6	1.0	51.0
9	530			24				3		296.4	45.0	1.0	53.0
10	642			29				10		322.7	91.7	1.5	51.0
11	553			48				5		339.8	131.4	1.5	53.0
12	628			45				5	4	304.7	130.1	2.0	53.0
13	909			64				7	4	308.1	49.7	2.0	54.0
14	1,242			90				6	8	282.4	60.7	2.0	54.0
15	1,134			71				12	7	274.2	24.5	2.0	54.0
16	981			52				11		279.7	1.8	1.4	54.0
17	1,224			79				16	7	243.0	2.9	1.7	55.0
18	731			55				10	13	271.5	20.5	2.0	55.0
19	882			41				11	25	257.1	20.8	1.8	55.0
20	657			40				7	109	258.7	19.8	2.0	56.0
21	807			75				4	159	243.2	17.5	1.8	57.0
22	580			78				13	239	255.6	45.8	2.0	57.0
23	584			70				8	481	265.5	47.3	2.0	57.0
24	436			67				15	577	293.7	57.3	2.0	58.0
25	381			34				8	1,237	311.0	37.9	2.0	58.0
26	357			34				13	3,239	350.8	157.6	2.0	59.0
27	231			28				17	6,325	377.7	127.2	2.0	60.0
28	279			70				12	8,735	386.7	140.1	2.1	60.0
29	240			24				13	9,441	394.2	183.5	2.0	60.0
30	274			42				11	9,628	395.4	155.5	2.0	60.0
31	178			27			1	16	13,561	393.2	110.6	2.0	61.0
TOTAL	21,475			1,418			1	324	53,799				
AVERAGE	693			46			1	10	2,832	306.2	70.9		

TABLE 26

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	215			20				12	9,769	395.7	89.1	2.1	61.0
2	206			28				11	7,876	400.00	154.1	1.8	61.0
3	212			12				8	7,759	385.9	153.6	1.7	61.0
4		225		22				16	11,105	359.8	125.5	1.4	61.0
5		227		19				25	22,584	344.0	122.9	2.0	60.0
6		157		20			2	18	19,621	348.3	71.4	2.0	60.0
7		200		24			4	21	32,273	345.8	55.6	2.5	60.0
8		184		16			2	12	33,223	326.1	69.6	2.0	60.0
9		222		34			2	21	38,649	331.3	85.2	2.5	61.0
10		322		22			11	29	50,190	320.5	22.4	2.0	61.0
11		187		27			17	25	34,424	321.3	69.9	1.5	61.0
12		232		32			20	27	30,327	326.8	162.2	2.0	60.0
13		149		43			22	43	54,141	311.2	88.0	1.7	60.0
14		270		33			147	30	64,043	298.6	20.3	2.0	60.0
15		393		50			220	34	51,470	242.4	21.1	2.0	61.0
16		292		33			190	29	68,714	255.6	28.1	2.2	61.0
17		240		28			323	24	46,311	271.6	22.2	2.2	62.0
18		235		18			438	21	56,955	238.2	22.2	2.2	61.0
19		285		36			437	23	51,587	222.8	22.2	2.2	62.0
20		237		43			668	28	53,561	229.5	22.2	2.2	62.0
21		296		47			936	48	118,524	241.0	22.2	2.5	62.0
22		341		46			1,461	52	128,914	235.8	22.2	2.5	62.0
23		307		44			1,288	53	76,890	234.3	22.2	2.5	62.0
24		301		48			1,835	43	88,619	225.9	4.7	2.5	62.0
25		278		73			2,240	64	96,286	187.0	3.6	2.5	62.0
26		407		58			5,221	113	88,968	187.2	3.5	2.5	62.0
27		251		53			3,712	107	87,713	212.8	4.2	2.4	62.0
28		303		44			5,626	180	96,918	212.3	13.9	2.5	62.0
29		286		46			4,829	133	62,867	199.0	3.8	2.8	63.0
30		239		48			5,033	242	68.481	196.7	3.2	2.5	63.0
TOTAL	633	7,066		1,067			34,684	1,492	1,658,762				
AVERAGE	211	262		36			1,387	50	55,292	280.2	51.0		

TABLE 27

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		339		41			5,594	242	50,401	196.7	4.9	3.0	63.0
2		397		156			7,769	313	28,333	179.9	32.9	3.5	62.0
3		223		62			4,195	265	15,581	190.5	80.6	3.2	63.0
4		315		65			4,273	373	14,613	207.3	98.7	2.0	64.0
5		233		95			2,934	426	14,137	191.7	52.2	3.1	64.0
6		169		53			2,786	392	9,452	214.7	99.1	3.0	64.0
7		195		63			2,311	383	10,193	233.0	99.1	3.1	64.0
8		198		80			2,555	493	7,627	237.4	32.6	3.0	64.0
9		290		235			2,631	481	8,303	179.2	12.2	2.6	64.0
10		356		121			2,393	647	8,478	142.5	16.9	3.6	64.0
11		227		104			2,512	693	9,889	176.2	12.3	3.0	64.0
12		264		70			1,609	734	7,158	212.1	11.7	3.6	65.0
13		250		44			1,548	838	7,856	218.0	11.6	3.0	65.0
14		138		42			908	694	3,231	205.0	11.8	3.0	65.0
15		85		49			771	598	2,686	209.6	28.8	3.6	65.0
16		117		40			729	902	2,424	248.2	126.5	3.6	65.0
17		135		40			494	916	2,716	214.1	105.5	3.5	65.0
18		137		35			446	1,023	1,708	220.3	104.2	3.5	66.0
19		105		12			361	1,151	2,499	218.3	40.6	3.5	66.0
20		178		43			449	1,443	1,234	214.8	59.9	3.0	66.0
21		102		85			396	1,272	1,298	217.5	86.2	2.5	66.0
22		210		71			342	1,525	1,234	210.4	52.2	2.5	67.0
23		211		67			226	1,614	1,464	186.9	17.2	2.5	67.0
24		308		73			306	2,449	880	173.4	23.0	2.5	67.0
25		171		53			107	2,061	683	188.8	20.3	2.5	67.0
26		191		61			216	2,781	745	190.4	20.6	3.0	67.0
27		173		65			146	2,620	579	230.9	24.3	2.4	67.0
28		109		52			95	1,895	387	206.5	24.1	2.5	67.0
29		166		48			76	2,344	441	218.3	11.7	2.6	67.0
30		142		49			70	2,397	335	209.1	2.0	2.8	68.0
31		165		57			54	3,064	408	205.5	1.8	2.8	68.0
TOTALS		6,299		2,131			49,302	37,029	216,973				
AVERAGES		203		69			1,590	1,194	6,999	204.7	42.8		

TABLE 28

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		124		42			41	2,979	296	191.1	1.7	3.0	68.0
2		178		48			15	2,638	239	192.9	2.0	3.0	68.0
3		129		27			16	1,569	251	191.5	1.6	2.8	68.0
4			195	33	4		7	2,059	190	199.5	1.7	2.8	68.0
5			197	46			14	1,953	150	185.7	1.8	3.0	68.0
6			163	36	2		21	1,301	63	179.9	1.9	4.0	68.0
7			154	28	1		22	1,579	126	190.5	1.8	3.7	69.0
8			133	31			17	1,312	78	173.8	.3	3.5	68.0
9			140	42			2	1,355	48	167.6	.0	4.0	68.0
10			163	36			9	1,766	64	173.6	.0	4.0	69.0
11			148	38	1		3	1,762	50	169.5	.0	4.2	69.0
12			182	38	4	1	2	1,507	66	173.7	.0	4.1	69.0
13			167	52	3		2	1,391	51	167.1	.0	4.1	69.0
14			196	47	3		5	1,390	35	147.0	.0	4.0	70.0
15			133	46		2	2	1,029	46	153.7	.0	4.1	70.0
16			198	36	1	1	6	938	35	149.8	.0	4.0	70.0
17			250	57			1	1,074	25	169.5	.0	4.0	70.0
18			396	64			1	1,521	25	174.1	.0	4.5	70.0
19			234	44		1		1,180	42	184.2	.0	4.5	70.0
20			361	78	2		1	1,258	23	198.5	.0	4.5	70.0
21			489	70	2	1	1	1,519	30	164.3	.0	4.5	70.0
22			358	70	2	1	2	1,305	34	170.4	.0	4.5	70.0
23			369	72	4			1,496	23	126.3	.0	4.5	70.0
24			387	77	1	1		1,703	23	139.4	.0	5.0	69.0
25			446	101	11	2		1,827	28	130.9	.0	4.5	69.0
26			441	121	4		1	1,687	12	130.0	.0	4.5	69.0
27			581	127	2	1	3	1,197	122	126.9	.0	5.0	69.0
28			483	137	2		1	1,347	17	113.7	.0	3.0	70.0
29			478	109				925	14	110.0	.0	4.5	70.0
30			907	161	1		1	859	18	124.5	.0	3.5	70.0
31			1,515	239	4			1,707	4	150.5	.0	4.5	70.0
TOTAL		431	9,864	2,153	54	11	196	47,133	2,228				
AVERAGE		144	352	69	3	1	8	1,520	72	161.9	.4		

TABLE 29

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			900	197	1			1,502	8	176.0	.0	4.5	69.0
2			1,004	261	7	5		1,796	6	133.2	.0	4.5	70.0
3			736	239	6	4		2,520	12	125.8	.0	4.5	69.0
4			1,254	320	4	2	4	3,317	17	112.9	.0	4.5	68.0
5			1,633	344	5	2	1	3,061	5	97.6	.0	6.0	68.0
6			2,289	475	39	25	2	3,596	12	107.3	.0	4.8	68.0
7			1,797	447	45	21	2	4,008	19	165.9	.0	6.0	68.0
8			1,177	530	37	47	5	2,740	24	125.4	.0	4.5	68.0
9			1,007	582	16	28		2,699	7	100.9	.0	5.0	68.0
10			494	596	11	25		1,600	6	134.0	.0	4.6	68.0
11			1,511	983	10	16		2,403	14	124.1	.0	5.0	68.0
12			1,547	1,097	12	19		3,335	8	95.4	.0	5.1	68.0
13			1,417	815	16	51		2,161	11	99.4	.0	5.2	68.0
14			2,602	1,025	28	62		3,213	21	115.6	.0	4.6	68.0
15			2,154	1,249	34	72		2,252	10	117.5	.0	5.0	68.0
16			3,510	1,209	66	106	1	2,728	7	106.1	.0	5.5	68.0
17			2,705	1,462	90	153		2,628	7	145.0	.0	5.4	67.0
18			3,458	1,423	39	114	1	3,355	5	97.8	.0	4.2	67.0
19			2,876	2,484	96	148		2,484		108.3	.0	5.0	65.0
20			2,285	1,018	15	31	2	4,049	1	133.8	.0	5.0	65.0
21			1,740	1,496	17	38	1	3,519		118.4	.0	5.0	65.0
22			1,239	1,281	10	24		3,036	3	130.2	.0	4.5	65.0
23			1,450	1,009	34	63		2,937	10	133.6	.0	5.0	65.0
24			1,021	937	29	56		2,000	2	106.8	.0	5.0	65.0
25			1,506	1,295	22	67		2,279	5	95.8	.0	4.5	65.0
26			1,339	1,213	30	57		1,905		97.8	.0	4.5	65.0
27			766	1,005	26	75		1,175	3	114.7	.0	4.5	65.0
28			711	784	34	97		1,110	2	126.8	.0	4.5	65.0
29			717	949	27	91		1,000	4	117.3	.0	4.5	63.0
30			643	796	15	21		802	2	114.5	.0	4.5	65.0
TOTAL			47,488	27,521	821	1,520	19	75,210	231				
AVERAGE			1,583	917	27	52	2	2,507	9	119.3	.0		

TABLE 30

MONTHLY FISH PASSAGE SUMMARY REPORT - THE DALLES PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

DATE	CHINOOK ADULTS SPRING	SUMMER	FALL	CHINOOK JACKS	COHO ADULTS	COHO JACKS	SOCKEYE	STEELHEAD	SHAD	DISCHARGE (KCFS)	SPILL (KCFS)	TURBIDITY (SECHI)	WATER TEMP (DEG F)
1			370	566	16	32		514		113.4	.0	4.5	63.0
2			512	573	18	37		575		94.6	.0	6.0	63.0
3			589	672	24	28		887	2	107.8	.0	4.0	63.0
4			785	511	27	71		1,103	1	118.0	.0	5.5	63.0
5			675	367	29	39	1	813		130.9	.0	5.0	62.0
6			573	385	16	38		479		113.4	.0	4.0	62.0
7			422	417	17	41		314		109.0	.0	5.0	62.0
8			455	403	18	33		335		96.0	.0	4.5	62.0
9			399	258	15	54		279		86.5	.0	5.0	62.0
10			536	409	17	35		339		110.4	.0	5.0	62.0
11			265	284	7	18		207		126.6	.0	5.0	62.0
12			275	288	4	11		210		162.9	.0	4.5	61.0
13			161	194	6	11		158		111.0	.0	5.2	61.0
14			244	260	7	29		226		105.3	.0	5.0	60.0
15			231	187	10	26		212		113.4	.0	4.6	59.0
16			145	213	3	24		222	2	120.6	.0	5.0	59.0
17			199	197	7	30		138		116.5	.0	4.5	59.0
18			222	201	7	18		238	1	135.9	.0	4.2	59.0
19			164	181	9	22		198		128.9	.0	5.0	58.0
20			182	145	2	14		133		126.1	.0	4.0	59.0
21			86	155	4	8		110	1	132.7	.0	5.0	58.0
22			86	135	2	12		141		93.5	.0	4.5	59.0
23			156	176	8	15		191		89.1	.0	4.5	59.0
24			103	116	2	5		162		111.8	.0	5.0	58.0
25			122	131	4	8		191		116.8	.0	4.5	58.0
26			135	103	8	8		167		106.1	.0	5.0	58.0
27			110	93	4	9		116		98.3	.0	5.0	58.0
28			68	51	7	10		110		119.2	.0	5.0	58.0
29			81	80	10	12		100		122.1	.0	5.8	58.0
30			92	73	13	14		43	0	115.0	.0	5.0	57.0
31			66	55	7	11		78		110.0	.0	5.5	57.0
TOTAL			8,509	7,879	328	723	1	8,989	7				
AVERAGE			274	254	11	23	1	290	1	114.3	.0		

TABLE 31
WATER TEMPERATURE AND STREAM FLOW DATA
THE DALLES DAM - 1983

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	108.8	5.3	57.0	210.7	4.0	49.0
2	109.0	5.0	57.0	216.8	4.0	49.0
3	119.7	4.8	56.0	181.4	4.0	49.0
4	123.5	4.6	56.0	159.5	4.0	49.0
5	127.5	4.5	56.0	223.5	3.5	45.0
6	123.9	4.4	56.0	202.7	3.5	45.0
7	125.3	4.5	56.0	189.7	3.5	45.0
8	139.6	4.5	56.0	182.8	4.0	45.0
9	144.5	4.5	55.0	174.9	4.0	45.0
10	137.7	4.5	55.0	150.2	4.5	45.0
11	134.1	4.5	55.0	117.4	4.5	45.0
12	123.1	4.5	55.0	169.7	4.5	45.0
13	123.2	4.0	55.0	175.2	4.5	44.0
14	121.6	4.5	54.0	167.9	4.5	44.0
15	113.0	4.6	53.0	170.7		44.0
16	130.5	4.0	54.0	184.6	4.5	44.0
17	145.7	4.2	53.0	190.2	4.5	44.0
18	159.2	4.3	53.0	176.7		44.0
19	171.7	4.0	53.0	222.2	2.5	44.0
20	145.5	4.8	53.0	206.0	2.5	43.0
21	172.5	5.0	52.0	237.0		
22	192.8	4.5	52.0	212.2	3.0	41.0
23	191.5	5.0	52.0	210.0		
24	161.8	5.0	52.0	182.0		
25	162.2	4.0	51.0	149.4		
26	156.4	4.2	51.0	144.1		
27	136.4	4.0	50.0	165.3		
28	150.7	3.5	51.0			
29	181.9	4.0	50.0			
30	217.6	4.0	49.0			

TABLE 32

PEAK DAYS OF FISH MIGRATION
THE DALLES DAM - 1957-1983

	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	4,374	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	Aug 20	27,236	Jul 2	7,769	Sep 19	244	None		Jun 22	128,914

TABLE 33

MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM - 1957-1983

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
TOTAL			1,907	922,394	883,006	670,671	667,147	523,664	2,044,402	174,645	1,195		5,889,031	1,842,886	1,349,024	2,697,121	1,460,504
27-YEAR AVERAGE				34,163	32,704	24,840	24,709	19,395	75,719	6,468			218,112	68,255	49,964	99,893	54,093

TABLE 34

MONTHLY COUNT OF SOCKEYE SALMON
THE DALLES - 1957-1983

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
TOTAL					1,345	540,268	1,109,606	18,014	844	12			1,670,085
27-YEAR AVERAGE					52	20,010	41,097	667	31				61,885

TABLE 35

MONTHLY COUNT OF COHO SALMON
THE DALLES - 1957 - 1983

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
TOTAL							1,540	19,956	294,659	45,373	149		361,677	150,550
27-YEAR AVERAGE								739	10,913	1,680			13,395	8,856**

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

TABLE 36

MONTHLY COUNT OF STEELHEAD TROUT
THE DALLES DAM - 1957-1983

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	47,133	86,444	75,210	8,989			170,643
TOTAL		25	2,677	19,441	19,275	58,257	836,925	782,489	1,719,089	1,278,705	184,502	2,553		3,184,849
27-YEAR AVERAGE				720	714	2,158	30,997	28,981	63,670	47,359	6,833			117,957

* Subtotal through 31 August

TABLE 37

YEARLY TOTALS OF SALMONID FISH COUNTED OVER JOHN DAY DAM
1968 - 1983

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
TOTAL	2,890,841	1,424,598	876,647	194,577	5,386,663
16 YEAR AVERAGE	180,678	89,037	54,790	12,161	

TABLE 38

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER JOHN DAY DAM
1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	7,123	25,391	7,990	6,925	8,174	66,078	18,025	-	-	139,706
STEELHEAD	-	-	-	1,605	434	561	15,135	31,465	83,314	22,183	-	-	154,697
SOCKEYE	-	-	-	-	-	27,372	61,889	505	37	7	-	-	89,810
COHO	-	-	-	-	-	-	-	99	1,353	188	-	-	1,640
CHUM	-	-	-	-	-	-	-	-	-	-	-	-	-
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	-	8,728	25,825	35,923	83,949	40,243	150,782	40,403	-	-	385,853
SHAD	-	-	-	-	7,918	912,258	250,911	1,456	39	5	-	-	1,172,587

TABLE 39

WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY - 1983

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	167.2	3.0	37.5	201.0	3.2	37.3	313.0	1.5	39.3
2	135.3	3.7	37.1	234.7	2.9	37.4	331.1	1.7	39.3
3	182.7	3.2	36.9	248.9	3.0	37.3	346.0	1.2	39.5
4	168.3	3.2	36.9	270.0	3.1	37.3	366.0	1.8	39.9
5	172.9	3.0	36.7	188.6	3.5	37.0	350.7	1.6	40.0
6	225.6	3.8	36.6	173.7	3.0	36.8	322.4	1.5	40.2
7	235.3	3.5	36.4	224.3	3.1	36.6	351.2	1.4	40.4
8	154.2	3.5	36.5	224.9	3.6	36.7	369.5	.9	40.5
9	199.0	3.5	36.5	247.2	3.6	36.8	353.3	1.6	40.7
10	141.3	3.3	36.8	260.2	4.0	36.0	329.1	1.5	41.1
11	177.7	3.0	36.8	233.8	5.3	36.0	327.2	1.4	41.4
12	173.7	2.5	36.7	199.1	4.2	35.9	315.1	1.5	41.6
13	231.9	2.1	36.9	162.4	4.0	36.1	341.2	1.5	41.7
14	233.4	1.9	37.3	192.6	3.8	36.3	351.1	.8	42.2
15	213.9	1.5	37.5	184.6	3.5	36.7	357.5	2.0	42.0
16	177.7	2.0	37.7	242.9	2.7	36.7	369.1	.9	42.1
17	199.4	2.5	37.5	205.7	3.5	36.9	385.8	1.0	42.3
18	230.5	2.8	37.4	201.5	3.5	37.1	387.2	1.3	42.3
19	223.0	1.5	37.2	219.9	2.5	37.0	385.2	1.0	42.5
20	217.3	1.2	37.1	256.5	.7	37.1	372.1	1.3	42.6
21	210.3	1.5	36.9	263.5	2.5	37.7	355.2	1.0	42.6
22	102.2	1.4	36.8	266.4	.8	37.8	346.5	1.6	42.5
23	158.6	2.0	36.8	281.7	.8	38.0	345.3	2.0	42.7
24	191.4	1.6	36.9	294.2	2.8	38.8	337.0	1.7	42.7
25	193.9	1.5	36.8	262.7	1.8	38.9	337.9	1.7	42.8
26	202.2	2.2	36.8	279.8	1.8	38.8	281.9	1.8	42.8
27	203.4	3.2	36.8	258.9	1.6	39.1	290.6	2.0	43.0
28	208.6	3.3	36.9	312.8	1.5	39.5	330.4	1.9	43.1
29	176.6	2.9	37.0				347.7	1.5	43.2
30	134.4	2.7	37.1				330.9	1.8	43.2
31	190.9	2.0	37.2				316.4	1.5	43.3

TABLE 40

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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								78		332.2	80.7	1.6	43.6
2								43		322.8	80.7	1.8	43.6
3	2							54		284.2	80.7	1.4	43.7
4	2							-9		269.1	80.7	1.2	43.8
5	4							55		286.3	74.5	1.3	43.9
6	5							100		295.9	70.5	1.5	44.0
7	4							191		272.7	57.2	1.9	44.2
8	7							126		247.6	.0	1.9	44.4
9	7							128		202.4	16.9	2.1	44.7
10	10							84		253.2	57.6	1.9	44.9
11	15							52		256.4	4.5	1.8	45.1
12	14							49		268.3	62.0	1.9	45.3
13	35							143		284.7	81.9	1.8	45.2
14	31							24		267.3	76.7	1.9	45.1
15	38							85		252.9	65.2	1.9	45.2
16	59							39		243.0	101.7	1.5	45.2
17	81			3				102		222.1	104.2	2.0	45.5
18	116							85		240.6	62.7	1.2	45.5
19	168			3				33		241.7	41.7	1.8	46.7
20	422			2				9		220.5	48.7	1.5	47.4
21	481			2				35		194.9	14.8	2.7	47.8
22	667			4				31		214.3	31.4	2.7	47.6
23	1713			12				-9		258.3	128.3	2.1	47.6
24	656			8				16		273.9	134.9	1.3	48.1
25	297			6				2		336.9	118.8	2.1	48.2
26	527			7				7		346.8	161.4	2.8	48.6
27	331			5				9		325.4	148.4	2.3	48.5
28	429			4				17		335.9	159.9	2.5	48.6
29	583			16				25		317.3	139.1	2.0	48.7
30	340			7				1		306.2	146.0	2.8	49.0
TOTALS	7044			79				1605					
AVERAGES	252			6				53		272.5	81.1		

TABLE 41

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	691			14				24		294.7	146.2	2.0	49.4
2	692			22				16		320.8	132.9	1.4	49.8
3	1030			10				24		304.2	137.2	1.5	49.8
4	915			24				35		314.5	131.3	1.6	50.3
5	1485			35				40		295.6	119.3	1.5	50.5
6	1038			33				38		316.6	132.1	1.8	50.6
7	421			15				19		332.0	163.4	2.0	50.9
8	310			17				12		333.2	152.9	1.5	50.4
9	740			32				-5		311.0	138.4	1.9	50.0
10	1050			34				19		335.6	136.0	2.0	50.0
11	750			29				0		356.6	148.2	1.6	49.7
12	697			31				10		313.3	137.9	1.8	50.2
13	1091			44				-1		314.9	126.3	1.9	50.2
14	838			53				12		298.0	153.0	1.8	50.8
15	1131			51				15		294.2	143.2	1.8	51.4
16	1820			74				7		290.0	86.3	1.9	51.5
17	1260			96				16		251.0	64.3	1.8	51.7
18	1163			49				21	3	287.7	83.2	1.9	51.9
19	1034			70				25	2	276.4	66.5	1.8	52.2
20	663			37				10	2	269.1	69.1	1.7	54.1
21	929			62				19	6	257.2	97.6	2.0	53.0
22	646			36				10	18	265.3	124.0	2.0	54.8
23	735			45				8	49	274.3	106.3	1.9	55.6
24	657			48				2	55	306.5	130.2	1.9	
25	566			32				4	42	325.7	139.1	2.0	57.3
26	440			35				-4	85	367.7	167.1	2.2	56.4
27	319			26				8	90	399.0	163.4	2.3	56.1
28	491			37				15	1370	407.9	156.3	2.2	56.8
29	188			12				18	2018	416.9	199.5	2.0	57.2
30	211			31				6	1928	418.3	196.4	2.0	57.6
31	228			28				11	2250	417.7	193.2	1.7	58.0
TOTALS	24229			1162				434	7918				
AVERAGES	782			37				14	566	321.5	133.6		

TABLE 42

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	299			35				1	570	420.8	180.3	2.0	57.9
2	137			9				11	1683	421.5	197.8	1.5	57.9
3	160			21				6	2044	401.7	193.7	1.7	57.3
4	143			15				6	3180	379.3	187.9	1.5	57.1
5	135			12				10	3096	368.1	186.5	1.5	56.5
6		178		17				8	3405	365.8	181.2	1.3	56.5
7		252		20			7	5	5376	363.5	169.0	1.3	56.8
8		237		14			2	12	10337	350.8	164.4	1.6	57.7
9		312		20			5	9	5797	346.9	136.1	1.6	57.5
10		146		14			8	3	5986	340.7	148.0	1.9	57.4
11		215		18			15	3	4938	342.5	168.7	1.6	57.4
12		214		20			38	8	11582	342.8	171.0	2.0	57.4
13		266		12			66	12	21748	321.2	140.3	1.6	57.3
14		218		22			75	18	52383	314.4	98.2	2.0	57.4
15		375		49			121	29	29724	262.0	63.5	2.6	57.9
16		209		47			153	2	56999	266.8	56.4	2.6	57.9
17		215		30			182	3	40431	283.0	54.7	2.2	58.7
18		320		31			328	25	34839	255.5	52.1	2.3	58.5
19		191		12			354	12	37018	233.6	44.9	2.3	58.6
20		259		24			403	10	52734	244.3	45.2	2.7	58.7
21		239		11			625	14	58616	251.7	49.3	2.7	58.7
22		214		22			690	7	65940	249.2	38.7	2.7	58.9
23		278		25			1017	16	38996	243.9	19.7	2.8	58.4
24		238		58			1334	20	38288	240.2	23.7	2.4	58.1
25		299		29			1706	41	56195	192.2	26.3	2.6	58.2
26		301		51			2220	23	53843	197.2	36.9	2.7	59.0
27		325		41			3534	48	41765	213.3	29.9	2.8	59.3
28		304		105			4148	57	65213	223.0	35.8	3.2	59.9
29		238		47			4799	72	48625	205.0	29.7	3.0	60.1
30		188		54			5542	70	60907	199.8	20.0	3.0	60.2
TOTALS	874	6231		885			27372	561	912258				
AVERAGE	175	249		29			1140	19	30409	294.7	98.3		

TABLE 43

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		205		111			4713	76	53709	207.2	13.5	2.8	60.2
2		310		64			5091	110	29370	183.1	49.2	3.0	60.2
3		182		87			6494	77	15363	198.9	97.4	3.0	60.2
4		242		39			6298	91	16755	222.9	99.7	3.0	61.3
5		270		45			5075	210	22779	194.0	72.2	2.5	61.3
6		225		39			3655	142	12671	222.4	99.6	4.0	61.4
7		212		39			3187	165	15572	244.3	61.3	2.5	61.5
8		149		52			2746	119	7540	244.3	85.8	3.2	61.1
9		296		49			2278	239	13974	182.4	38.2	2.5	60.9
10		345		96			4179	409	8475	146.7	39.1	2.5	61.0
11		106		56			2143	198	9745	175.1	33.3	2.6	61.3
12		250		45			1945	331	11239	221.6	32.7	2.8	61.7
13		138		47			1750	335	10425	226.5	26.5	3.2	62.4
14		192		77			1504	409	5664	209.9	30.0	4.0	62.5
15		121		76			2179	306	3539	220.4	68.5	3.0	62.7
16		62		9			872	161	2101	258.4	135.6	2.5	62.4
17		85		88			869	220	1710	223.6	132.9	2.5	62.3
18		72		48			777	260	1562	229.2	126.1	3.0	63.1
19		145		57			842	633	1548	223.6	76.6	4.2	63.2
20		101		47			672	436	915	229.0	101.4	2.5	62.9
21		66		34			653	435	907	225.6	110.4	3.3	62.8
22		74		28			741	516	868	223.1	101.0	2.5	63.5
23		203		70			793	1239	999	192.5	60.0	3.9	64.1
24		224		59			677	972	836	171.3	60.0	2.5	64.1
25		217		63			589	1024	553	193.9	51.8	3.8	63.9
26		127		43			293	990	489	195.8	59.9	3.9	63.9
27		317		46			355	1434	415	238.4	67.2	3.4	64.2
28		127		43			170	948	470	211.9	64.8	3.5	64.4
29		58		26			123	733	231	228.4	59.7	3.7	64.3
30		51		40			119	607	235	208.5	56.6	3.0	64.7
31		73		57			107	1310	252	210.3	58.2	3.0	65.6
TOTALS		5245		1680			61889	15135	250911				
AVERAGES		169		54			1996	488	8094	211.7	70.0		

TABLE 44

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		66		55			60	1273	190	190.6	46.6	2.5	65.2
2		140		48			82	1919	176	197.8	31.0	4.5	65.5
3		97		58			78	1853	179	195.9	14.8	4.0	65.1
4		127		30			55	1346	149	203.0	29.5	4.3	65.5
5		76		49			35	980	106	184.2	13.0	3.9	65.6
6			140	43			26	963	71	188.0	13.1	3.9	65.1
7			81	23			43	1181	73	193.1	13.1	3.5	66.1
8			66	25			11	568	64	179.3	30.3	3.0	66.1
9			134	44			12	1012	87	174.4	7.0	3.0	65.9
10			100	41			22	998	89	177.8	6.7	3.0	66.2
11			154	53			16	1210	1	172.6	7.9	3.0	66.4
12			110	42			8	1098	29	176.7	9.8	3.1	66.6
13			78	26	1	2	9	956	30	169.5	26.7	3.1	66.8
14			50	45			5	864	30	148.8	23.6	3.0	66.9
15			47	34				875	22	157.8	6.4	3.5	66.7
16			58	42			3	931	19	152.8	9.9	3.5	66.5
17			157	36			6	866	2	172.3	21.7	3.0	66.5
18			221	84				769	14	178.4	4.3	3.0	66.4
19			318	67	2		11	916	14	189.6	16.7	3.2	66.8
20			413	77	10	3	5	968	4	201.7	16.5	3.4	67.0
21			194	44	7		1	740	6	167.8	.0	3.0	66.9
22			364	73	12	1	5	740	22	176.6	16.6	3.4	67.0
23			259	61	11	8		809	6	129.9	5.2	3.5	67.1
24			334	73	4	1	1	1158	9	142.3	16.6	3.2	67.0
25			203	66				931	-3	132.7	.0	3.2	67.0
26			182	36	1		3	746	38	134.1	.0	3.2	67.0
27			265	88			2	930	7	128.3	.0	3.5	66.9
28			288	134	2	1		1105	5	113.4	.0	3.5	66.8
29			259	58	1	2	2	763	4	108.5	.0	3.0	66.6
30			690	184		1	4	1062	3	128.0	.0	6.0	67.0
31			601	163	16	13		935	10	150.6	.0	4.0	66.8
TOTALS		506	5766	1902	67	32	505	31465	1456				
AVERAGES		101	222	61	6	4	20	1015	47	165.0	12.5		

TABLE 45

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			809	246	6	2		1057	1	182.4	.0	3.0	66.7
2			738	250	9	5	1	1241	1	136.9	.0	3.5	66.3
3			773	290	14	4		1183	4	124.5	.0	2.5	66.2
4			566	288	16	25	2	2070	0	113.0	.0	3.5	66.0
5			768	261	13	4	1	3139	1	99.9	.0	3.0	65.6
6			1490	421	20	11		2899	-1	107.8	.0	5.0	65.7
7			1296	428	24	7		2740		167.1	.0	5.0	65.3
8			2160	786	23	25	1	3568	3	130.7	.0	3.0	65.7
9			906	577	15	14	2	2899	-1	106.8	.0	4.5	65.6
10			570	350	40	21		1971	2	134.5	.0	3.0	65.4
11			998	732	22	21	3	1831	0	124.1	.0	4.7	65.2
12			1154	592	53	44	1	2343	-3	94.7	.0	6.5	65.0
13			1308	797	60	30	1	3017	-1	103.2	.0	5.5	64.9
14			1267	809	76	23	4	3105	0	116.6	.0	3.0	64.5
15			1661	1014	73	48		3532	6	117.3	.0	5.1	64.2
16			2292	1620	19	27	3	3586	-1	106.2	.0	3.0	63.8
17			2213	1269	66	45	5	3144		146.0	.0	3.0	63.3
18			1524	1047	9	23		2532	0	103.4	.0	3.0	62.8
19			2337	1561	27	25		3033	1	108.6	.0	3.5	62.6
20			2330	1808	8	19	1	3300		133.2	.0	3.0	62.2
21			2623	1461	17	24	1	3847		123.8	.0	5.5	62.2
22			1673	1983	7	14	5	3623		128.7	.0	4.5	62.1
23			1026	1129	13	23	1	3542		134.5	.0	5.0	62.0
24			1357	1285	24	11	-1	4283	3	105.5	.0	4.5	61.7
25			1183	1279	22	18	2	3848	-2	92.4	.0	3.5	61.4
26			971	1193	37	17	2	3517		97.9	.0	4.5	61.3
27			564	1048	36	13		3091	24	113.4	.0	4.2	61.0
28			1130	1207	13	12		2243		127.3	.0	4.6	60.7
29			404	840	16	18	1	1645	2	119.7	.0	4.5	60.7
30			484	932	1	1	1	1485		111.5	.0	4.0	60.6
TOTALS			38575	27503	779	574	37	83314	39				
AVERAGES			1286	917	26	19	2	2777	2	120.4	.0		

TABLE 46

MONTHLY FISH PASSAGE SUMMARY REPORT - JOHN DAY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

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			430	760	9	5		1006		114.9	.0	3.8	60.5
2			352	777	1	2	1	1111		92.7	.0	3.1	60.1
3			423	759	6	12		1349		109.4	.0	3.4	59.6
4			743	653	5	1		1734	-1	116.9	.0	3.0	59.3
5			555	471	8	15	2	1362		132.9	.0	2.4	59.1
6			583	482	6	3	1	1112	1	115.8	.0	3.5	58.7
7			354	439	4	2		894		110.8	.0	3.1	58.4
8			457	454	6	20		624	1	97.8	.0	4.3	58.2
9			414	540	4	5		583		87.8	.0	3.5	58.2
10			320	331	7	7		523		110.2	.0	4.0	58.3
11			334	458		3	2	861	-1	131.6	.0	4.0	58.3
12			247	221				563	2	166.6	.0	4.3	58.0
13			226	338				693	1	114.1	.0	3.5	57.6
14			365	438	6		1	588		106.6	.0	3.0	57.1
15			187	245	2	1		632		114.4	.0	3.5	56.8
16			245	311	1	2		541		121.7	.0	3.5	56.4
17			183	215	1	1		365		120.2	.0	3.5	56.3
18			117	166		2		413	1	138.2	.0	3.5	56.1
19			181	327				502		130.1	.0	3.5	56.0
20			46	207	1	2		380	1	133.7	.0	3.7	55.9
21			103	178		3		432	0	131.6	.0	3.0	55.8
22			65	115		4		515		93.1	.0	3.8	55.6
23			98	209	3			914		85.9	.0	3.0	55.5
24			144	189				1294		111.9	.0	3.5	55.2
25			86	82		1		564		116.9	.0	2.5	55.1
26			88	123	1	4		645		105.1	.0	3.2	55.0
27			136	160		2		487		95.7	.0	3.0	54.9
28			136	126	3	2		227		119.2	.0	4.5	54.6
29			134	122	7	1		286		121.8	.0	3.0	54.4
30			61	111	3	1		413		112.9	.0	6.0	54.3
31			107	98	3			570		109.1	.0	3.6	54.3
TOTALS			7920	10105	87	101	7	22183	5				
AVERAGES			255	326	4	4	1	716	1	115.1	.0		

TABLE 47
WATER TEMPERATURE AND STREAM FLOW DATA
JOHN DAY 1983

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	106.8	5.5	54.0	216.4	4.0	47.3
2	106.4	4.5	54.3	223.9	4.5	47.2
3	119.9	5.0	56.1	184.2	4.0	47.1
4	122.3	5.0	55.9	159.7	4.5	46.1
5	129.0	2.8	55.6	228.5	3.7	45.9
6	122.6	3.5	55.4	201.7	3.6	45.1
7	124.2	3.6	55.2	189.1	3.5	44.5
8	137.4	3.9	54.9	188.4	3.5	49.3
9	143.6	3.4	54.6	178.3	3.5	44.0
10	137.9	3.7	54.2	149.3	3.6	43.8
11	133.9	2.5	54.0	113.7	3.5	43.8
12	121.5	4.0	53.5	169.0	4.5	43.4
13	123.4	4.5	53.2	172.9	4.0	43.2
14	119.4	3.8	52.8	163.1	4.0	43.2
15	110.6	4.0	52.6	165.1		43.2
16	131.6	3.5	52.4	186.0	4.0	43.0
17	144.0	4.0	52.1	187.3	4.0	43.0
18	161.1	3.5	51.5	178.5		42.6
19	178.2	3.5	51.3	224.6	4.0	42.3
20	141.6	3.5	51.1	209.4	4.0	43.2
21	175.7	3.5	50.1	247.1	4.2	40.8
22	201.0	3.5	50.8	218.8	4.0	40.1
23	192.8	3.5	50.1	213.4	4.0	39.1
24	161.9	2.5	49.7	187.4	3.0	37.8
25	164.1	3.5	49.4	148.0	5.0	37.2
26	158.6	2.5	49.1	144.3	3.5	36.5
27	136.9	3.5	49.0	162.8	4.6	36.5
28	151.3	3.5	48.5			
29	185.0	4.2	48.0			
30	221.7	3.0	47.6			
TOTALS						
AVERAGES	145.5			185.6		

TABLE 48

PEAK DAYS OF MIGRATION
JOHN DAY DAM - 1968-1983

	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

TABLE 49

MONTHLY COUNT OF CHINOOK SALMON OVER JOHN DAY DAM
1968-1983

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
TOTAL			6	338,027	522,778	256,971	301,824	204,887	1,106,089	159,476	783		2,890,841	890,033	553,134	1,404,358	938,625
16-YEAR AVERAGE				21,127	32,674	16,061	18,864	12,805	69,131	9,967			180,678	55,627	34,571	87,772	58,664

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

TABLE 50

MONTHLY COUNT OF SOCKEYE SALMON
JOHN DAY DAM - 1968-1983

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
TOTAL					8	258,627	608,438	9,207	329	37	1		876,647
16-YEAR AVERAGE						16,164	38,027	575	21	2			54,790

TABLE 51

MONTHLY COUNT OF COHO SALMON
JOHN DAY DAM - 1968-1983

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
TOTAL							44	7,009	155,916	31,098	510		194,577
16-YEAR AVERAGE								438	9,745	1,944			12,161

TABLE 52

MONTHLY COUNT OF STEELHEAD TROUT
JOHN DAY DAM - 1968-1980

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1968				3,939	2,659	151	6,094	26,824	68,791	11,405	1,393		121,256
1969			314	3,986	3,691	714	12,004	13,267	40,082	12,290			86,348
1970				1,987	1,279	253	7,373	19,412	46,036	6,100			82,440
1971				1,472	592	263	17,459	19,693	63,868	12,630			115,977
1972				1,523	1,966	356	17,656	20,502	78,138	21,487			141,628
1973				8,019	3,546	785	12,134	15,608	46,566	14,782			101,440
1974				1,713	2,363	1,361	9,713	8,419	12,479	7,708			43,756
1975				760	428	648	6,251	8,583	9,977	6,004			32,651
1976				929	1,248	1,868	9,254	17,964	22,754	5,791			59,808
1977				1,319	418	2,341	18,366	7,088	56,134	16,892			102,558
1978				741	631	1,601	5,573	6,911	22,896	5,835			44,188
1979				602	136	253	8,012	10,717	16,202	18,072	1,883		55,877
1980				4,131	555	577	5,850	18,114	34,700	14,272			78,199
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
TOTAL			314	38,180	23,183	15,414	177,041	262,543	686,760	217,887	3,276		1,424,598
16-YEAR AVERAGE				2,386	1,449	963	11,065	16,409	42,923	13,618			89,037

TABLE 53

YEARLY TOTALS OF SALMONID FISH COUNTED OVER MCNARY DAM
1954 - 1983

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
TOTAL	4,756,450	2,560,523	1,892,179	365,394	9,574,546
30-YEAR AVERAGE	158,548	83,351	63,073	12,180	319,152

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

TABLE 54

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER MCNARY DAM
1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	4,481	25,074	9,202	7,882	5,217	54,339	15,441	-	-	121,636
STEELHEAD	-	-	-	1,051	215	137	7,746	25,821	70,369	19,915	-	-	125,254
SOCKEYE	-	-	-	-	-	5,897	33,851	997	142	16	-	-	40,903
COHO	-	-	-	-	-	-	-	229	1,536	705	-	-	2,470
CHUM	-	-	-	-	-	-	-	-	-	-	-	-	-
PINK	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL SALMONID	-	-	-	5,532	25,289	15,236	49,479	32,264	126,386	36,077	-	-	290,263
SHAD	-	-	-	-	62	231,335	178,615	3,856	2,679	584	-	-	417,131

TABLE 55
DISCHARGE AND WATER QUALITY DATA
McNARY DAM - 1983

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	147.5	3.8	40.0	188.9	2.4	40.0	294.5	1.2	41.0
2	131.7	4.0	41.0	201.5	2.4	40.0	307.9	1.4	42.0
3	171.7	5.4	39.0	208.2	3.0	40.0	317.9	1.5	42.0
4	169.2	5.4	39.0	202.5	3.0	40.0	311.1	1.3	44.0
5	170.0	4.8	39.0	205.2	3.5	39.0	312.3	1.1	44.0
6	197.6	4.7	39.0	209.2	3.5	39.0	313.5	1.1	44.0
7	174.8	3.4	40.0	215.4	3.0	39.0	310.2	1.2	44.0
8	153.9	1.1	40.0	229.4	3.0	39.0	309.1	1.1	45.0
9	180.7	1.1	40.0	209.6	3.0	39.0	321.0	1.1	45.0
10	153.7	1.0	41.0	193.5	3.0	38.0	291.6	1.5	45.0
11	181.0	1.3	41.0	200.0	4.2	38.0	298.2	1.5	44.0
12	185.3	1.3	41.0	174.3	4.2	39.0	318.1	1.2	44.0
13	214.1	1.4	43.0	155.1	4.2	39.0	285.0	1.5	45.0
14	222.4	1.8	43.0	184.3	4.0	40.0	298.2	1.1	45.0
15	207.4	1.9	43.0	185.2	4.2	40.0	315.3	1.2	45.0
16	180.2	1.0	43.0	208.2	3.2	46.0	361.6	1.3	45.0
17	187.2	1.0	41.0	178.2	3.1	40.0	354.2	1.2	45.0
18	199.3	1.0	43.0	190.2	3.1	39.0	316.5	1.0	45.0
19	207.3	1.2	43.0	196.6	3.1	40.0	313.1	1.2	45.0
20	196.7	1.2	40.0	234.6	3.1	40.0	338.0	1.2	45.0
21	182.5	2.0	40.0	229.6	2.6	40.0	353.1	1.3	45.0
22	166.4	2.0	43.0	223.9	1.0	41.0	243.1	1.1	45.0
23	157.7	1.6	40.0	299.2	1.5	41.0	350.1	1.4	45.0
24	188.1	2.4	40.0	286.5	1.2	41.0	298.1	1.4	45.0
25	187.1	2.5	40.0	249.3	1.5	41.0	285.1	1.4	45.0
26	203.0	2.3	40.0	273.7	1.0	41.0	301.8	1.5	45.0
27	197.2	3.2	41.0	284.0	1.0	41.0	314.7	1.5	45.0
28	178.0	2.2	40.0	302.2	1.2	41.0	313.9	1.5	45.0
29	187.3	2.2	40.0				308.4	1.5	44.0
30	149.6	2.4	40.0				310.6	1.8	46.0
31	189.2	2.4	40.0				296.9	1.7	46.0

TABLE 56

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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		313.0	179.3	1.6	46.0
2								42		290.1	141.4	1.3	47.0
3	1							50		245.2	149.3	1.6	47.0
4	3			2				37		270.6	115.6	1.5	47.0
5								23		279.0	152.3	1.5	47.0
6								36		286.1	94.2	1.1	47.0
7	2							44		218.7	32.6	1.1	47.0
8	6							59		228.0	30.8	1.1	48.0
9	3							41		217.6	25.5	1.4	48.0
10	7							37		233.6	41.2	1.5	48.0
11	14							60		258.3	70.7	1.4	48.0
12	4			4				39		245.8	57.6	1.4	48.0
13	11			1				49		257.0	84.7	1.2	48.0
14	11							21		263.1	93.0	1.4	48.0
15	15							40		235.7	78.1	1.2	48.0
16	15							39		232.2	53.5	1.2	48.0
17	21							34		209.9	48.4	1.7	48.0
18	36							50		206.7	45.4	2.0	48.0
19	45							27		225.1	74.6	2.2	49.0
20	80			4				48		214.9	50.7	1.8	49.0
21	156			18				40		213.7	29.5	2.2	50.0
22	202			60				62		208.5	28.7	1.5	50.0
23	331			39				20		241.5	103.8	2.4	51.0
24	285			18				28		263.0	178.5	2.0	51.0
25	480			60				39		321.0	170.6	1.7	51.0
26	607			55				38		302.9	167.5	1.8	51.0
27	629			22				12		314.5	179.7	2.4	50.0
28	551			36				9		306.3	168.5	2.6	50.0
29	298			42				3		295.3	130.6	1.9	50.0
30	286			21				2		272.3	150.7	2.0	50.0
TOTAL	4,099			382				1,051					
AVERAGE	158			27				35		255.7	97.6		

TABLE 57

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	492			33				5		280.2	163.1	2.0	50.0
2	664			70				23		303.4	135.3	2.0	50.0
3	526			78				4		285.6	128.0	2.6	51.0
4	375			41				19		280.7	114.7	2.6	51.0
5	790			17				11		297.1	139.4	2.6	51.0
6	784			19				5		294.6	121.6	3.0	52.0
7	1,461			59				6		299.0	144.0	2.4	52.0
8	1,223			26				9		298.2	163.1	2.0	54.0
9	942			21				11		287.8	130.4	2.0	54.0
10	538			18				10		307.3	140.2	2.0	54.0
11	681			24				5		311.0	188.6	2.0	54.0
12	775			32				2		260.0	124.9	2.2	54.0
13	787			28				6		292.4	117.4	2.3	53.0
14	780			21				6		259.1	119.8	2.5	55.6
15	814			33				12		290.3	142.4	1.8	55.0
16	606			47				5		268.0	97.2	1.8	55.0
17	1,225			57				16		243.5	48.5	1.8	54.0
18	1,173			44				3		267.2	82.5	3.0	54.0
19	1,121			38				1		280.2	90.9	2.8	54.0
20	1,081			76				6		284.4	88.6	2.8	54.0
21	821			68				9	2	264.8	63.5	2.8	54.0
22	828			51				6	1	254.2	81.1	2.5	54.0
23	909			58				8	1	253.0	89.1	2.3	55.0
24	500			28				8		288.9	135.4	2.3	55.0
25	623			48				1		325.9	134.4	2.1	56.0
26	528			33						343.7	187.8	2.2	57.0
27	858			39				5	4	379.7	201.7	2.0	57.0
28	363			19					1	385.4	192.6	2.7	57.0
29	468			25				1	2	381.0	195.1	2.7	60.0
30	565			29				8	48	394.8	187.7	2.7	60.0
31	562			31				4	3	414.9	207.8	2.0	60.0
TOTAL	23,863			1,211				215	62				
AVERAGE	770			39				7	8	302.5	134.1		

TABLE 58

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	451			35				3	15	398.5	197.6	2.0	60.0
2	244			24					21	367.0	209.8	2.0	60.0
3	226			25				3	36	379.3	201.2	1.3	60.0
4	244			25				2	20	368.4	164.3	2.0	60.0
5	257			17				1	46	352.9	150.2	2.0	62.0
6	183			20				7	48	344.8	141.8	2.0	60.0
7	163			14					474	323.0	123.3	2.0	60.0
8	144			9					150	359.6	157.7	1.5	60.0
9		233		11					440	342.2	139.8	1.4	60.0
10		165		7				2	217	343.5	137.1	1.4	60.0
11		127		25					58	323.6	117.7	1.4	60.0
12		293		51			4	2	546	306.6	102.2	1.4	60.0
13		213		26					1,792	306.1	117.2	2.0	60.0
14		350		17				1	2,946	312.3	114.2	1.4	60.0
15		254		54			4		6,071	258.9	62.1	2.1	61.0
16		241		16			10	4	7,719	268.2	72.8	2.1	61.0
17		274		33			45	5	4,706	265.4	70.3	1.9	61.0
18		324		21			33	2	6,286	263.8	59.5	2.1	60.0
19		335		29			35	1	1,900	245.2	44.6	2.1	60.0
20		276		39			97	3	4,289	254.9	60.7	1.8	61.0
21		333		63			171	3	19,732	234.3	52.4	2.0	61.0
22		239		47			177	3	11,371	240.7	44.4	2.0	61.0
23		350		66			174	1	14,219	230.4	4.4	1.8	61.0
24		257		66			241	31	16,654	218.8	.0	1.8	61.0
25		318		79			350		14,258	206.7	.0	1.3	61.0
26		416		123			933	6	23,646	216.5	.0	1.2	61.0
27		312		75			911	14	35,178	200.0	.0	2.3	61.0
28		268		34			597	4	15,713	210.6	.0	2.2	62.0
29		229		46			820	9	18,925	212.5	.0	2.2	62.0
30		308		78			1,295	30	23,859	215.2	.0	2.2	62.0
TOTAL	1,912	6,115		1,175			5,897	137	231,335				
AVERAGE	239	278		39			347	6	7,711	285.7	84.8		

TABLE 59

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		271		108			1,494	18	22,525	203.2	.0	2.0	62.0
2		358		90			1,527	42	17,154	178.3	.0	2.7	62.0
3		266		86			1,851	48	24,189	177.8	.0	1.9	62.0
4		267		98			1,756	51	14,329	187.7	.0	2.6	62.0
5		218		81			3,282	47	18,743	207.8	.0	2.3	64.9
6		237		120			3,590	72	15,275	216.0	.0	2.4	62.0
7		270		76			2,756	82	9,339	234.3	.0	2.0	64.0
8		231		58			1,557	100	11,429	231.8	.0	2.6	65.0
9		200		57			1,850	110	10,677	190.3	.0	2.5	65.0
10		262		126			1,953	96	8,526	152.3	.0	2.5	64.0
11		229		151			2,019	101	5,336	182.5	.0	2.6	64.0
12		239		67			1,061	167	3,081	206.9	.0	2.8	64.0
13		486		73			1,095	225	2,701	223.2	.0	2.8	64.0
14		317		73			947	153	2,631	204.5	.0	2.3	64.0
15		243		21			996	146	1,510	207.6	.0	2.5	64.0
16		186					590	175	790	207.9	.0	2.5	64.0
17		228		23			671	244	895	229.8	39.1	2.5	64.0
18		132		20			318	178	945	226.9	6.1	2.5	64.0
19		130		23			396	102	1,141	221.6	3.1	2.5	65.0
20		81		21			334	117	598	230.1	.0	2.5	65.0
21		72		31			540	178	821	228.7	.0	2.5	66.0
22		131		25			511	296	709	221.8	.0	2.4	65.0
23		147		53			325	373	824	203.0	.0	2.6	65.0
24		107		22			380	222	1,016	169.4	.0	2.8	67.0
25		107		45			433	356	544	193.4	.0	3.0	67.0
26		110		15			476	624	598	210.8	.0	3.0	67.0
27		134		30			354	629	635	229.6	.0	3.0	67.0
28		136		28			250	714	455	213.8	.0	2.9	67.0
29		118		19			221	707	524	218.6	.0	2.7	67.0
30		195		23			191	702	414	193.9	.0	2.8	68.0
31		98		13			127	671	261	218.0	.0	2.8	68.0
TOTAL		6,206		1,676			33,851	7,746	178,615				
AVERAGE		200		56			1,092	250	5,762	206.6	1.6		

TABLE 60

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		86		12			90	478	337	198.5	.0	3.0	68.0
2		116		34			137	696	180	196.6	.0	3.0	68.0
3		116		35			150	1,045	238	180.4	.0	3.0	68.0
4		167		57			154	1,180	249	188.7	.0	3.3	68.0
5		204		33			77	1,235	459	180.1	.0	3.3	69.0
6		84		24			55	1,546	395	187.5	.0	3.2	69.0
7		97		14			54	1,181	299	164.8	.0	3.2	69.0
8		99		18			43	763	260	181.0	.0	3.2	70.0
9			107	19			25	672	237	186.8	.0	3.3	70.0
10			76	27			25	681	107	176.3	.0	3.4	70.0
11			117	30	1		15	861	104	179.6	.0	3.2	69.0
12			70	16	7	2	18	1,256	143	166.9	.0	3.2	70.0
13			110	23	14	6	15	604	108	143.7	.0	3.2	70.0
14			101	24	13	7	31	541	138	145.2	.0	3.2	70.0
15			85	13	5		14	427	67	156.9	.0	3.2	70.0
16			71	2	11	3	22	824	47	157.3	.0	3.6	70.0
17			62	9	18	2	16	983	25	179.0	.0	3.8	70.0
18			76	24	1		5	925	54	179.1	.0	3.8	70.0
19			133	28	7	6	5	970	42	191.8	.0	3.4	70.0
20			166	31	6	1	11	823	40	186.0	.0	3.6	70.0
21			237	64	3		5	684	23	146.5	.0	3.6	71.0
22			233	45	7	1	7	643	12	162.4	.0	3.6	71.0
23			135	21	2	2	4	516	20	137.3	.0	2.3	70.0
24			324	32	11	8	7	746	60	140.8	.0	2.3	71.0
25			184	33	13	6	2	910	25	138.0	.0	3.0	69.0
26			231	29	13	9	2	772	37	128.3	.0	3.0	69.0
27			334	46	13	5	8	951	29	122.7	.0	3.0	69.0
28			5	4				754	38	94.1	.0	3.7	69.0
29			24	7	8			574	37	105.6	.0	3.6	70.0
30			328	75	2	10		858	31	129.1	.0	3.5	70.0
31			181	29	2	4		722	15	148.2	.0	3.8	70.0
TOTAL		969	3,390	858	157	72	997	25,821	3,856				
AVERAGE		121	147	28	8	5	37	833	124	160.6	.0		

TABLE 61

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			476	57	6	7	2	1,537	14	171.4	.0	3.7	71.0
2			425	102	35	21		1,456	57	150.4	.0	3.2	70.0
3			443	62	42	17		1,006	33	129.1	.0	1.9	70.0
4			522	76	22	16		750	32	94.4	.0	1.9	69.0
5			788	237	27	24	2	1,245	53	86.9	.0	2.0	68.0
6			324	102	6	12		629	58	96.0	.0	2.0	68.0
7			707	196	17	18	5	1,710	72	140.8	.0	3.4	69.0
8			1,043	220	23	16	6	2,492	204	130.5	.0	2.5	68.0
9			1,317	315	12	15	8	2,666	223	130.1	.0	2.7	68.0
10			1,171	185	6	18	10	2,689	157	151.9	.0	2.8	68.0
11			1,412	347	5	8	14	1,747	137	89.3	.0	2.7	67.0
12			904	246		4	14	2,357	35	86.2	.0	2.6	67.0
13			814	385	5	9	15	1,705	123	120.7	.0	2.8	67.0
14			1,482	505	20	60	2	2,089	42	127.5	.0	2.8	69.0
15			1,536	558	10	96	6	2,350	49	116.4	.0	2.8	69.0
16			1,860	1,274	4	4	7	3,357	64	116.5	.0	2.8	69.0
17			1,714	1,382	1	53	7	4,471	90	120.1	.0	2.8	66.0
18			2,254	1,071	1	59	2	3,777	65	96.7	.0	2.8	66.0
19			986	579		21	4	1,960	88	121.0	.0	2.8	68.0
20			1,133	423		2		1,606	164	105.2	.0	2.8	66.0
21			2,379	1,219	3	15		2,900	243	142.0	.0	3.0	66.0
22			1,685	1,130	15	39	7	2,733	114	111.1	.0	2.6	66.0
23			1,789	843	36	54	15	2,429	67	144.4	.0	2.8	63.0
24			2,456	887	43	80	1	2,765	84	91.8	.0	2.8	66.0
25			2,497	1,155	115	126	1	4,160	62	69.1	.0	2.8	66.0
26			1,286	521	20	42		2,696	123	115.0	.0	2.8	66.0
27			1,454	1,110	27	73	7	4,017	66	120.1	.0	2.8	66.0
28			1,339	1,009		8	5	3,688	26	113.9	.0	3.0	66.0
29			558	593	14	24	2	1,859	60	117.8	.0	3.1	64.0
30			299	497	17	63		1,523	74	109.8	.0	3.0	64.0
TOTAL			37,053	17,286	532	1,004	142	70,369	2,679				
AVERAGE			1,235	576	20	33	6	2,346	89	117.2	.0		

TABLE 62

MONTHLY FISH PASSAGE SUMMARY REPORT - McNARY PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

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			427	521		13	1	1,340	40	112.3	.0	3.4	63.0
2			366	507	4	17	3	1,324	18	89.7	.0	3.4	63.0
3			381	568	10	21	11	1,307	16	108.0	.0	3.2	63.0
4			380	428	4	17	1	1,432	60	111.0	.0	3.1	62.0
5			675	374	31	26		1,226	31	111.1	.0	3.1	61.0
6			362	215		51		874	49	114.7	.0	2.2	61.0
7			320	426	2	64		863	17	125.0	.0	2.2	61.0
8			373	289	1	52		1,007		80.0	.0	2.9	61.0
9			188	232		1		679	46	95.1	.0	3.0	60.0
10			424	333	1	6		884	42	111.2	.0	3.0	61.0
11			448	338		19		965	12	131.2	.0	3.0	60.0
12			264	197		26		515		142.9	.0	2.6	60.0
13			264	187	1	4		391	27	91.7	.0	2.6	61.0
14			569	331	1	84		670	46	89.4	.0	3.0	61.0
15			374	270	1	33		707	18	122.1	.0	2.8	61.0
16			276	114	4	1		496	23	95.3	.0	3.0	60.0
17			256	158	11	54		417	12	107.2	.0	2.9	60.0
18			183	222		15		329	7	95.9	.0	3.0	60.0
19			197	156	0	13		492	13	111.2	.0	3.0	60.0
20			158	134	3	3		271	24	126.1	.0	3.0	60.0
21			82	85	5	7		264	24	108.7	.0	3.0	59.0
22			151	124		5		246	12	102.5	.0	3.0	59.0
23			136	150	1	0		289	4	100.4	.0	3.0	58.0
24			67	90	2	2		276	1	95.9	.0	3.0	58.0
25			109	138	1	5		264	7	111.8	.0	3.9	58.0
26			136	154	17	12		392	7	108.5	.0	2.9	58.0
27			177	173	19	12		522	20	96.3	.0	3.1	57.0
28			89	142				322	1	111.9	.0	3.5	57.0
29			116	78	6	7		438	4	111.4	.0	3.2	57.0
30			110	85	4	4		418	3	98.8	.0	3.2	57.0
31			69	95	1	1		295		96.0	.0	2.9	57.0
TOTAL			8,127	7,314	130	575	16	19,915	584				
AVERAGE			262	236	6	19	4	642	21	106.9	.0		

TABLE 63
WATER TEMPERATURE AND STREAM FLOW DATA
McNARY PROJECT - 1983

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	112.2	3.1	57.0	206.0	3.2	49.0
2	112.2	3.0	57.0	180.7	3.3	48.0
3	113.9	3.0	57.0	179.8	3.4	48.0
4	119.0	2.9	58.0	196.5	3.4	49.0
5	136.1	2.9	58.0	205.2	3.4	47.0
6	111.2	2.7	57.0	192.8	3.4	47.0
7	110.2	2.7	57.0	192.1	3.4	47.0
8	144.4	2.0	56.0	192.5	3.9	46.0
9	144.0	3.0	56.0	166.7	3.9	46.0
10	125.3	3.1	54.0	148.7	3.9	46.0
11	130.1	3.2	54.0	129.3	3.4	46.0
12	124.4	3.2	54.0	163.8	3.4	46.0
13	107.8	3.0	54.0	163.5	3.2	46.0
14	112.6	3.3	54.0	162.8	3.0	45.0
15	111.2	3.2	54.0	141.1	4.4	45.0
16	141.8	3.4	54.0	172.1	4.3	45.0
17	149.4	2.8	54.0	173.0	4.1	44.0
18	151.6	3.1	54.0	174.0	4.2	44.0
19	157.0	3.4	54.0	186.7	5.6	43.0
20	157.2	2.4	54.0	201.1	5.3	43.0
21	178.7	2.6	54.0	200.5	5.8	42.0
22	174.6	2.8	54.0	201.1	5.8	41.0
23	174.1	3.0	54.0	201.5	5.8	40.0
24	178.2	3.4	53.0	200.6	5.8	39.0
25	165.0	3.4	50.0	202.8	5.8	38.0
26	157.7	3.5	50.0	142.9	3.6	38.0
27	118.4	3.4	50.0	147.8	3.7	37.0
28	151.9	3.2	50.0			
29	192.9	3.1	50.0			
30	190.7	3.0	49.0			

TABLE 64

PEAK DAYS OF FISH MIGRATION
McNARY DAM - 1954-1983

	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

TABLE 65
MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM - 1954-1983

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	29,874	13,290	48,570
TOTAL			42	404,485	993,324	688,977	807,835	334,602	1,306,354	216,811	4,020		4,756,450	1,516,898	1,490,366	1,719,284
30-YEAR AVERAGE			2	13,483	33,111	22,966	26,928	11,153	43,545	7,227			158,548	50,563	49,679	57,309

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

TABLE 66

MONTHLY COUNT OF SOCKEYE SALMON
MCNARY DAM - 1954-1983

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
TOTAL					165	171,545	1,631,393	77,952	8,143	2,979			1,892,179
30-YEAR AVERAGE						5,718	54,380	2,598	271	99			63,073

TABLE 67

MONTHLY COUNT OF COHO SALMON
MCNARY DAM - 1954-1983

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	-		
TOTAL				1		7	466	17,221	297,679	46,925	3,094	1	365,394
30-YEAR AVERAGE							16	574	9,923	1,564	103		12,180

TABLE 68

MONTHLY COUNT OF STEELHEAD TROUT
MCNARY DAM - 1954-1983

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
TOTAL	1,059	925	8,032	55,720	28,427	22,605	228,669	546,880	1,206,430	441,613	17,786	2,377	2,560,523
30-YEAR AVERAGE			268	1,857	948	754	7,622	18,229	40,214	14,720			85,351

TABLE 69

YEARLY TOTALS OF SALMONID COUNTED OVER ICE HARBOR DAM
1962-1983

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
TOTAL	1,239,422	1,202,257	10,063	43,740	12	2,495,494
22-YEAR AVERAGE	56,337	54,648	457	1,988		113,432

TABLE 70

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER ICE HARBOR DAM
1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	1,925	9,418	4,132	1,921	316	1,945	602	-	-	20,259
STEELHEAD	-	-	-	1,011	150	36	3,773	9,875	48,519	25,121	-	-	88,485
SOCKEYE	-	-	-	-	-	12	114	66	18	6	-	-	216
COHO	-	-	-	-	-	-	-	13	419	33	-	-	465
TOTAL SALMONID	-	-	-	2,936	9,568	4,180	5,808	10,270	50,901	25,762	-	-	109,425
SHAD	-	-	-	-	2	5,278	8,165	454	43	-	-	-	13,942

TABLE 71
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR PROJECT - 1983

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	40.4	5.0	40.0	49.3	1.5	38.0	79.3	2.0	42.0
2	41.1	5.0	40.0	58.6	4.0	38.0	95.5	2.0	43.0
3	51.5	5.0	40.0	61.8	4.0	38.0	91.5	2.0	43.0
4	45.3	5.0	40.0	61.3	4.8	38.0	92.1	2.0	43.0
5	49.2	5.0	37.0	27.6	4.8	38.0	105.0	2.0	43.0
6	64.9	5.0	39.0	30.9	4.5	38.0	111.3	2.0	43.0
7	63.4	5.0	49.0	47.3	4.5	38.0	94.2	2.0	43.0
8	76.6	5.0	40.0	43.9	4.5	38.0	105.2	2.1	43.0
9	85.2	5.0	40.0	40.8	4.5	39.0	109.1	1.8	43.0
10	84.3	1.5	40.0	43.5	4.5	39.0	107.4	1.9	45.0
11	67.1	1.5	40.0	47.4	4.5	39.0	121.3	1.9	46.0
12	69.5	1.5	39.0	40.7	4.8	38.0	138.2	1.9	46.0
13	69.5	1.5	39.0	38.4	4.5	39.0	119.8	1.8	46.0
14	66.3	1.5	39.0	54.5	4.5	39.0	123.0	1.8	46.0
15	40.5	1.0	38.0	40.7	4.5	39.0	128.8	1.8	46.0
16	38.7	1.0	38.0	56.6	4.5	39.0	124.6	1.8	46.0
17	68.9	1.3	38.0	65.2	4.5	40.0	124.1	1.8	46.0
18	56.2	1.3	38.0	64.8	4.5	40.0	116.1	1.8	46.0
19	57.9	1.3	38.0	82.8	3.0	40.0	106.2	1.8	46.0
20	52.0	1.3	38.0	82.6	3.5	40.0	101.1	1.8	47.0
21	43.5	1.3	38.0	88.7	3.5	40.0	100.7	1.8	47.0
22	48.8	1.5	38.0	83.0	2.5	40.0	106.2	1.8	46.0
23	45.1	1.5	38.0	72.9	2.0	40.0	101.3	1.8	48.0
24	52.6	1.5	38.0	81.4	2.0	40.0	89.3	1.8	48.0
25	42.7	1.5	38.0	84.5	2.0	40.0	76.1	1.8	48.0
26	63.5	1.5	38.0	85.6	2.0	42.0	78.8	1.8	48.0
27	52.6	1.5	38.0	94.3	2.0	42.0	87.9	1.8	49.0
28	56.2	1.5	38.0	95.4	2.0	42.0	81.2	1.8	49.0
29	51.2	1.5	38.0				80.5	1.8	48.0
30	54.1	1.5	38.0				78.9	1.6	48.0
31	55.8	1.5	38.0				74.4	1.6	48.0

TABLE 72

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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								24		101.7	48.9	1.8	48.0
2								34		94.0	47.5	1.8	48.0
3								34		89.3	50.0	1.8	48.0
4								23		92.3	43.7	1.8	48.0
5								47		93.2	44.4	.9	48.0
6								47		92.1	45.5	1.0	48.0
7								40		70.5	32.8	1.0	48.0
8								36		70.6	.0	1.0	48.0
9								53		72.6	12.7	1.5	48.0
10								39		79.7	27.2	1.5	48.0
11	1							38		80.3	11.2	1.5	48.0
12	2							47		73.5	24.4	1.8	48.0
13	1							29		80.0	24.1	1.8	48.0
14								46		77.3	24.0	1.8	48.0
15	1							30		65.8	22.3	1.9	48.0
16	3							31		60.2	25.0	2.0	48.0
17								41		53.2	21.1	2.0	48.0
18	9							36		54.4	16.4	2.2	49.0
19	15							30		58.2	14.0	2.2	50.0
20	26							30		54.8	12.9	2.1	50.0
21	15							33		47.9	11.5	2.1	51.0
22	29							24		40.8	7.4	2.1	51.0
23	67							47		75.5	29.4	2.1	51.0
24	36							33		104.2	90.0	2.1	51.0
25	61			1				25		108.7	51.6	2.1	52.0
26	54							19		118.8	59.3	1.8	52.0
27	256			1				29		111.3	53.7	1.8	52.0
28	542			5				21		103.6	48.6	1.8	54.0
29	416			1				21		94.8	34.2	1.5	54.0
30	379			4				24		102.0	41.2	2.0	54.0

TABLE 73

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	109			2				17		96.1	40.2	2.3	54.0
2	114			2				8		119.7	46.7	2.1	54.0
3	61							7		97.9	42.4	2.2	54.0
4	141			3				4		114.6	41.9	2.2	54.0
5	256			3				7		111.3	47.9	2.1	54.0
6	313			10				13		108.4	43.0	2.1	54.0
7	419			3				10		116.4	47.2	2.1	54.0
8	609			11				12		119.6	46.3	2.2	55.0
9	504			7				12		115.0	42.9	1.9	55.0
10	427			13				8		112.9	46.6	1.9	55.0
11	364			16				5		114.5	47.6	1.9	55.0
12	347			6				7		107.6	51.3	1.9	55.0
13	377			13				12		110.8	42.3	2.5	55.0
14	297			18				7		99.4	39.5	2.6	55.0
15	303			11				2		105.4	40.5	2.6	55.0
16	617			19				5		91.2	30.0	2.6	55.0
17	265			23						95.1	19.6	2.6	55.0
18	400			10				3		98.1	28.8	2.6	55.0
19	282			12						96.0	40.1	2.6	55.0
20	541			10				1		95.8	30.5	2.5	55.0
21	549			13				4		93.8	27.5	2.7	55.0
22	455			17						97.0	34.9	3.0	56.0
23	311			5				4		107.4	34.9	3.0	56.0
24	244			10						119.0	40.2	2.7	56.0
25	104			4					2	136.4	55.6	2.3	57.0
26	161			15				1		151.2	69.8	2.6	57.0
27	119			11						181.5	106.8	2.6	57.0
28	131			8						182.0	102.4	2.6	57.0
29	134			11						197.5	115.0	2.6	57.0
30	118			6				1		189.5	106.7	2.6	60.0
31	53			1						191.3	117.9	1.9	58.0
TOTALS	9,125			293				150	2				
AVERAGES	294			10				7	2	121.7	52.5		

TABLE 74

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	43			3						195.7	121.7	1.9	60.0
2	31			2						177.3	97.7	1.3	57.0
3	19			2						174.3	95.5	1.3	57.0
4	59			2						159.9	85.3	1.3	57.0
5	35			7						162.8	91.1	1.3	57.0
6	42			11						158.4	79.1	1.3	57.0
7	164			22						155.2	78.6	1.3	57.0
8	243			29						157.9	82.4	1.4	58.0
9	222			11						152.5	75.9	1.6	59.0
10	163			9						160.6	79.6	1.8	59.0
11	130			10						160.9	79.6	1.8	59.0
12		113		11						155.3	78.4	1.9	59.0
13		143		10						153.2	75.7	2.1	59.0
14		162		11					3	141.3	60.5	2.2	59.0
15		218		9					7	114.7	38.9	2.4	60.0
16		118		6					24	128.8	50.5	2.6	60.0
17		106		17					40	131.8	52.2	2.6	60.0
18		119		10					58	122.5	43.8	2.6	60.0
19		156		22					59	127.7	47.7	2.6	60.0
20		129		20					129	129.8	49.6	2.6	60.0
21		189		16					104	116.8	35.4	2.6	60.0
22		177		13					219	102.8	22.5	2.6	60.0
23		109		14					218	91.6	12.3	3.1	60.0
24		156		20				2	98	92.2	12.6	2.6	61.0
25		115		18				9	293	68.1	.0	2.8	61.0
26		70		16			2	11	448	69.8	.0	3.1	62.0
27		142		33					970	79.4	.0	3.1	62.0
28		121		18			6		892	87.9	8.7	2.9	62.0
29		111		25			2	1	1,026	103.2	24.8	2.9	62.0
30		107		23			2	13	690	90.0	11.1	2.7	62.0
TOTALS	1,151	2,561		420			12	36	5,278				
AVERAGES	105	135		14			3	7	310	130.7	53.0		

TABLE 7.5

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		97		23			7	13	1,265	90.8	13.2	2.6	62.0
2		102		20			3	15	487	95.9	18.1	3.2	62.0
3		104		10			4	21	352	104.6	27.2	3.4	62.0
4		120		18			8	21	643	105.0	32.2	3.8	62.0
5		48		14			2	18	353	114.7	37.5	3.8	62.0
6		61		12			4	26	306	96.2	34.5	3.8	64.4
7		106		27			7	35	302	67.7	9.0	3.8	64.0
8		83		17			6		191	87.5	20.3	3.6	64.0
9		45		14			3	72	316	70.9	16.4	3.7	64.0
10		78		15			6	26	177	65.0	14.6	3.8	64.0
11		60		10			3		430	74.4	16.3	3.9	64.0
12		85		15			1		520	81.6	22.5	3.5	64.0
13		132		9			5	59	341	78.3	16.1	3.5	64.0
14		101		7			7	121	209	74.5	15.7	3.7	64.0
15		46		6			6	119	155	74.9	16.2	3.9	64.0
16		32		4			2	130	105	49.6	29.6	4.1	64.0
17		35		4			2	113	135	68.6	46.6	4.1	64.0
18		31		3			5	134	187	65.7	33.9	4.3	64.0
19		39		3			1	166	224	55.8	14.5	4.3	64.0
20		37		4				150	194	57.8	19.6	4.1	64.0
21		33		2			2	105	151	44.9	28.6	4.2	64.0
22		6		3				150	128	39.3	15.8	5.1	64.0
23		17		4			2	159	180	37.3	9.0	5.1	64.0
24		24		1				154	120	31.4	10.3	5.1	64.0
25		18		1			5	170	120	38.2	8.5	5.1	65.0
26		17		2			7	39	89	38.8	6.9	5.1	65.0
27		15		4			2	221	136	32.7	6.5	5.1	65.0
28		26		2			2	321	125	42.6	10.9	5.1	65.0
29		13		4			1	477	83	32.1	7.1	5.0	67.0
30		20		3			7	322	74	29.7	.0	5.1	67.0
31		26		3			4	416	67	23.7	.0	5.0	67.0
TOTALS		1,657		264			114	3,773	8,165				
AVERAGES		53		9			4	135	263	63.6	18.0		

TABLE 76

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		2	3		2	386	91	38.0	.0	5.0	67.0
2		12		7	1		6	386	48	20.1	.0	5.0	67.0
3		8		4			3	364	29	38.5	.0	5.0	68.0
4		8		2	2		13	458	46	35.0	.0	5.0	68.0
5		5		2	1		5	381	29	36.8	.0	5.0	68.0
6		14		3			4	528	34	18.2	.0	5.0	68.0
7		15		3			1	402	15	15.8	.0	5.0	68.0
8		6					1	407	17	27.4	.0	5.0	69.0
9		5		1			5	527	17	25.1	.0	5.0	70.0
10		2		1			3	444	7	26.4	.0	5.0	70.0
11		6						634	15	31.2	.0	5.0	70.0
12			7	1			6	440	13	18.1	.0	5.0	70.0
13			2	1			4	437	10	23.5	.0	5.0	71.0
14			2	3			3	309	12	18.6	.0	5.0	71.0
15			6				3	261	6	36.2	.0	5.0	71.0
16			6	1			3	315	2	30.5	.0	5.0	71.0
17			10	1			1	334	2	29.0	.0	5.0	71.0
18			6				3	304	11	34.0	.0	5.0	71.0
19			4	1				271	1	44.9	.0	5.0	71.0
20			6	1				328	2	47.4	.0	5.0	71.0
21			3		1			346	4	22.5	.0	5.0	71.0
22			4		4			207	2	17.8	.0	5.0	71.0
23			3					105	11	19.8	.0	5.0	71.0
24			7	4				146	13	29.7	.0	5.0	71.0
25			12	2				181	4	27.7	.0	5.0	72.0
26			12	6				185	10	43.9	.0	5.0	72.0
27			10	2	1			222	2	46.7	.0	5.0	72.0
28			12	5				233	1	44.5	.0	5.0	72.0
29			10	5				113		28.4	.0	5.0	72.0
30			14	6				175		44.1	.0	5.0	72.0
31			8	5				46		22.5	.0	5.0	72.0
TOTALS		103	144	69	13		66	9,875	454				
AVERAGES		9	7	3	2		4	319	16	30.4	.0		

TABLE 77

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			8					118	10	24.8	.0	5.0	72.0
2			10					199	10	25.6	.0	5.0	73.0
3			22	8				357	11	32.9	.0	5.0	73.0
4			8	8		1		268	7	24.0	.0	5.0	73.0
5			27					205	5	22.3	.0	5.0	72.0
6			20	2				181		18.3	.0	4.8	72.0
7			20	8	2			246		26.1	.0	4.4	72.0
8			28	6	2	6		355		39.5	.0	4.4	71.0
9			33	19	5	6		774		45.2	.0	4.4	71.0
10			43	24	4	2		933		46.2	.0	4.4	70.0
11			58	37	10			1,617		29.8	.0	4.0	70.0
12			54	21	2		1	1,001		31.2	.0	3.8	69.0
13			53	10	20			1,914		29.8	.0	3.8	69.0
14			51	14	23	21	2	2,485		31.9	.0	4.9	69.0
15			47	15	19	30		3,298		38.5	.0	4.9	69.0
16			62	36	9	11		2,060		30.4	.0	4.9	69.0
17			80	33	7	4		2,150		36.7	.0	4.9	68.0
18			86	28	4	8	2	2,471		22.9	.0	4.8	68.0
19			45	23	5	2	3	2,028		31.6	.0	4.8	68.0
20			31	40	2	11	0	2,170		35.0	.0	4.8	68.0
21			59	35	9		1	1,764		35.0	.0	4.8	68.0
22			52	34	11	6		1,441		37.2	.0	3.8	66.0
23			56	35	6	11		2,447		29.7	.0	3.8	66.0
24			40	22	3	9	2	1,849		38.8	.0	3.8	66.0
25			50	30	6	15		2,442		32.3	.0	4.0	66.0
26			57	35	10	17		2,317		34.4	.0	4.0	66.0
27			78	34	10	16	5	3,099		31.9	.0	4.0	66.0
28			43	22	7	26	1	2,818		33.5	.0	3.8	66.0
29			47	29	2	12	1	2,450		34.2	.0	3.9	65.0
30			40	29	12	15		3,062		33.5	.0	3.9	65.0
TOTALS			1,308	637	190	229	18	48,519	43				
AVERAGES			44	24	8	11	2	1,617	9	32.1	.0		

TABLE 78

MONTHLY FISH PASSAGE SUMMARY REPORT - ICE HARBOR PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

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			36	25	6	12		2,337		23.0	.0	3.9	65.0
2			26	22	2	3		1,648		11.3	.0	3.9	65.0
3			14	22	2			1,912		23.2	.0	3.9	65.0
4			16	15			6	1,350		23.2	.0	3.5	65.0
5			8	16				2,215		24.0	.0	3.5	65.0
6			12	12	1			1,428		32.8	.0	4.6	65.0
7			12	11	3			1,149		30.6	.0	4.6	64.0
8			26	17	4			1,232		26.7	.0	4.4	64.0
9			13	17				796		22.3	.0	4.6	63.0
10			14	11				947		26.9	.0	4.6	62.0
11			13	15				827		26.1	.0	4.0	62.0
12			9	16				645		28.8	.0	4.6	61.0
13			9	6				969		35.6	.0	4.6	60.0
14			9	13				771		33.1	.0	4.6	60.0
15			13	5				719		26.3	.0	4.6	60.0
16			9	2				460		27.5	.0	4.6	60.0
17			9	6				487		29.7	.0	4.6	59.0
18			11	7				619		35.9	.0	4.4	59.0
19			11	5				532		40.0	.0	4.4	59.0
20			7	3				389		36.4	.0	4.4	58.0
21			8	7				324		39.9	.0	4.5	58.0
22			5	4				365		41.0	.0	4.6	58.0
23			8	2				267		35.5	.0	4.6	58.0
24			4	6				288		34.5	.0	4.6	58.0
25			1	6				208		38.0	.0	4.6	58.0
26			1	3				247		36.3	.0	4.2	57.0
27				1				410		31.2	.0	4.2	57.0
28			6	2				401		38.8	.0	4.2	57.0
29			2	1				422		44.2	.0	4.3	57.0
30			6		0			424		33.4	.0	4.3	57.0
31			1	5				333		33.8	.0	4.3	57.0
TOTALS			319	283	18	15	6	25,121					
AVERAGES			11	9	3	7	6	810		31.3	.0		

TABLE 79
WATER TEMPERATURE AND STREAM FLOW DATA
ICE HARBOR PROJECT - 1983

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	38.9	4.3	57.0	34.5	5.0	48.0
2	34.8	4.3	57.0	57.0	5.0	48.0
3	41.4	4.3	56.0	38.9	5.0	47.0
4	40.1	4.3	56.0	34.0	5.0	47.0
5	47.7	4.3	56.0	58.4	5.0	46.0
6	45.2	4.3	56.0	56.8	5.0	46.0
7	46.7	4.3	56.0	43.2	5.0	46.0
8	44.6	4.3	56.0	46.1	5.0	45.0
9	43.7	4.4	56.0	48.8	5.0	45.0
10	35.0	4.7	55.0	47.7	5.0	45.0
11	41.1	5.0	55.0	40.6	5.0	45.0
12	42.3	5.0	54.0	55.9	5.0	45.0
13	43.3	4.9	54.0	52.2	5.0	45.0
14	42.9	5.0	53.0	49.4	5.0	45.0
15	44.0	4.8	53.0	50.5	5.0	44.0
16	45.8	4.8	53.0	53.2	5.0	44.0
17	52.2	4.8	53.0	45.7	5.0	43.0
18	56.8	4.7	52.0	30.4	5.0	43.0
19	39.4	4.7	52.0	60.7	5.0	42.0
20	44.6	4.7	52.0	55.5	5.0	42.0
21	58.6	4.7	52.0	45.9	5.0	40.0
22	51.6	4.6	51.0	56.9	5.0	39.0
23	56.1	4.6	51.0	53.7	5.0	39.0
24	49.2	4.5	51.0	35.0	5.0	38.0
25	58.4	4.5	51.0	22.9	5.0	38.0
26	52.0	4.5	50.0	53.6	5.0	37.0
27	39.2	4.5	50.0	55.6	5.0	37.0
28	57.0	4.5	50.0			
29	52.9	4.9	48.0			
30	51.4	4.9	48.0			

TABLE 80

PEAK DAYS OF FISH MIGRATION
ICE HARBOR DAM - 1962-1983

	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

TABLE 81
MONTHLY COUNT OF CHINOOK SALMON
ICE HARBOR DAM - 1962-1983

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
TOTAL		1	205	172,398	463,388	209,532	177,608	25,777	144,220	43,548	2,671	74	1,239,422	686,181	347,694	203,569
22-YEAR AVERAGE			10	7,836	21,063	9,524	8,073	1,172	6,555	1,979			56,337	31,196	15,804	9,253

TABLE 82

MONTHLY COUNT OF STEELHEAD TROUT
ICE HARBOR DAM - 1962 - 1983

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
TOTAL	268	287	6,876	42,905	16,659	4,475	48,383	108,478	631,121	314,913	25,804	2,088	1,202,257
22-YEAR AVERAGE			327	1,950	757	203	2,199	4,931	28,687	14,314			54,648

TABLE 83

YEARLY TOTALS OF SALMONID FISH COUNTED OVER LOWER MONUMENTAL DAM
1969-1983

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
TOTAL	672,155	664,088	4,296	16,289	1,356,828
15-YEAR AVERAGE	44,810	44,273	286	1,086	90,455

TABLE 84

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER LOWER MONUMENTAL DAM
1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	1,250	10,262	3,841	2,103	220	1,008	398	-	-	19,082
STEELHEAD	-	-	-	1,021	131	14	3,027	10,101	40,004	26,264	-	-	80,562
SOCKEYE	-	-	-	-	-	9	55	52	-	2	-	-	118
COHO	-	-	-	-	-	-	-	12	66	32	-	-	110
TOTAL SALMONID	-	-	-	2,271	10,393	3,864	5,185	10,385	41,078	26,696	-	-	99,872
SHAD	-	-	-	-	-	2,032	9,697	838	12	16	-	-	12,584

TABLE 85
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER MONUMENTAL - 1983

DATE	JANUARY			FEBRUARY			MARCH		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	44.3			54.4			80.9		
2	43.5			58.6			91.2		
3	54.1			62.3			92.6		
4	48.1			60.3			90.8		
5	50.2			29.8			105.5		
6	65.6			31.1			105.6		
7	62.2			50.9			90.7		
8	84.2			44.1			109.2		
9	94.0			42.6			109.2		
10	82.6			44.5			102.9		
11	68.5			51.6			117.4		
12	74.6			40.0			130.9		
13	66.8			42.5			111.6		
14	67.5			53.0			118.0		
15	46.0			45.4			125.7		
16	43.0			60.9			119.0		
17	67.2			67.5			113.0		
18	57.3			65.7			109.4		
19	56.0			85.7			103.7		
20	51.4			83.6			99.5		
21	53.9			85.1			99.5		
22	48.1			81.1			104.7		
23	47.5			66.6			97.1		
24	54.1			78.8			83.1		
25	45.1			82.3			77.0		
26	58.2			81.5			77.9		
27	55.2			90.6			85.8		
28	58.2			92.1			77.9		
29	54.6						77.6		
30	53.6						80.0		
31	60.9						73.0		

Water quality data was not collected 1 January thru 1 April 1983

TABLE 86

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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								41		95.3	41.7	1.0	47.0
2	117							29		90.4	50.0	1.0	48.0
3								26		86.3	50.4	1.0	48.0
4								59		87.7	45.6	1.0	47.0
5								42		91.6	44.3	1.0	47.0
6								50		86.3	42.0	1.4	48.0
7								38		68.1	40.4	1.2	48.0
8								43		72.6	4.3	1.5	48.0
9				1				30		74.3	20.8	1.5	48.0
10								37		80.4	37.1	1.4	48.0
11								36		73.1	7.6	2.0	48.0
12				1				30		72.8	32.7	2.0	48.0
13	1							56		80.6	33.0	2.0	48.0
14								36		75.9	33.8	2.0	48.0
15	6							41		65.8	30.8	2.0	48.0
16				1				35		60.0	29.8	1.8	48.0
17	2							29		56.0	27.8	1.8	48.0
18	1							32		54.8	27.3	1.8	48.0
19	1							39		58.2	37.3	1.7	48.0
20	9			1				34		50.7	19.2	1.8	50.0
21	13			1				15		50.1	13.7	1.8	50.0
22	16							36		46.3	11.1	1.8	50.0
23	16							28		75.5	45.0	1.5	50.0
24	18							15		101.4	89.6	1.5	50.0
25	44							42		107.7	54.6	1.5	50.0
26	27							35		108.7	77.0	1.5	51.0
27	97							28		104.5	60.0	1.5	51.0
28	170			1				19		102.4	59.6	2.0	51.0
29	412			4				23		94.2	45.7	2.0	51.0
30	290							17		98.5	58.7	2.0	51.0
TOTAL	1,240			10				1,021					
AVERAGE	69			1				34		79.0	39.0		

TABLE 87

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	229			4				7		96.3	64.4	2.0	51.0
2	212			3				12		116.4	59.2	2.0	51.0
3	203							6		97.5	53.6	2.0	52.0
4	200							14		114.5	49.1	2.0	52.0
5	288			2				8		112.2	53.5	2.0	53.0
6	261			4				11		104.5	53.2	2.0	53.0
7	284			10			1	7		125.2	64.9	2.0	54.0
8	350			2				1		115.7	63.9	2.4	54.0
9	583			6				5		110.6	58.1	2.0	54.0
10	338			5				8		107.5	60.3	2.0	54.0
11	316			14				15		115.9	87.9	2.4	54.0
12	270			5				9		100.7	77.3	2.3	54.0
13	432			5				8		107.7	71.6	2.3	54.0
14	220			5				3		99.8	70.0	2.5	55.0
15	529			10				1		103.0	50.9	2.4	55.0
16	243			9						98.2	40.5	2.4	55.0
17	287			6				5		94.9	24.9	2.4	55.0
18	435			22				1		95.1	38.1	2.4	55.0
19	323			22				2		98.3	25.0	2.4	55.0
20	506			19						95.6	30.7	2.2	55.0
21	246			16				2		95.4	27.5	2.2	55.0
22	679			11				3		96.4	53.6	2.2	55.0
23	497			10				3		106.8	33.6	2.2	55.0
24	750			25				1		119.2	46.5	2.2	55.0
25	468			7				2		136.9	66.9	2.2	57.0
26	270			7				2		150.8	96.3	2.2	57.0
27	272			10				1		172.9	110.1	2.2	57.0
28	118			10				1		176.6	103.0	2.2	57.0
29	80			9						195.0	128.0	2.2	58.0
30	50			5				1		187.5	126.4	2.2	59.0
31	54			6						189.0	96.7	2.2	59.0
TOTAL	9,993			269			1	139					
AVERAGE	322			9			1	5		120.5	64.1		

TABLE 8 8

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	53			3						193.9	92.8	2.2	58.0
2	33			1				1		166.1	90.6	2.2	57.0
3	43			2						177.5	99.0	2.0	57.0
4	22			2						158.7	84.4	2.0	57.0
5	43			1						160.5	88.7	2.0	57.0
6	70			2						150.2	57.4	2.0	57.0
7	135			9				1		152.7	72.6	2.0	58.0
8	123			12					4	158.6	65.3	2.0	58.0
9	313			25					2	149.0	76.9	2.0	58.0
10	217			15				1	1	160.3	81.2	2.0	59.0
11	184			6				1		157.7	80.5	2.0	59.0
12	119			9						155.6	87.8	2.0	59.0
13	134			14						150.2	54.5	2.0	59.0
14		109		5					2	139.3	44.3	2.0	59.0
15		102		11						114.5	25.3	2.0	59.0
16		154		14						130.4	40.3	2.0	59.0
17		141		16					13	126.9	16.7	2.0	60.0
18		132		5					14	124.2	13.8	2.0	60.0
19		243		22					47	126.2	23.9	2.0	60.0
20		186		20					111	127.7	-22.8	2.2	60.0
21		70		16				3	191	115.1	6.1	2.3	60.0
22		115		16					145	101.7	1.5	2.3	60.0
23		87		5			2		121	92.3	.0	2.3	60.0
24		111		14			1		103	91.5	.0	2.3	61.0
25		171		15			2		233	74.2	.0	2.3	61.0
26		83		12					182	73.1	.0	2.3	61.0
27		46		6				3	106	89.1	.0	2.3	61.0
28		78		16			1	1	214	90.6	.5	2.2	61.0
29		75		13			1	1	248	103.8	.0	2.2	61.0
30		106		27			2	2	295	92.2	.0	2.2	61.0
TOTAL	1,489	2,009		334			9	14	2,032				
AVERAGE	115	118		11			1	2	113	130.1	40.9		

TABLE 89

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		27		9			1	1	532	93.1	.0	2.2	62.0
2		46		15		1	1	24	567	96.2	.0	2.5	62.0
3		207		26			2	13	406	105.0	3.6	3.0	62.0
4		152		9				5	688	104.3	20.1	3.0	64.0
5		138		11			6	23	472	107.7	19.3	3.0	64.0
6		126		21			2	4	291	93.6	27.5	3.2	64.0
7		132		25			1	11	149	71.3	35.9	3.2	64.0
8		71		12			3	28	458	81.4	14.6	3.2	64.0
9		80		19				22	220	73.6	15.9	3.2	64.0
10		72		17			6	20	187	68.0	14.9	3.2	64.0
11		49		8				12	382	75.0	14.7	3.2	64.0
12		33		10			8	52	512	82.6	14.1	3.2	64.0
13		32		9			1	39	619	75.6	14.9	3.2	64.0
14		81		25			4	62	298	73.6	15.0	3.2	64.0
15		47		21			1	72	236	73.5	14.5	3.2	64.0
16		101		11			2	133	311	47.4	26.6	3.2	64.0
17		79		13				119	242	64.8	43.7	3.2	64.0
18		60		5				182	305	63.6	35.5	3.2	64.0
19		35					1	113	457	57.0	13.2	3.5	65.0
20		36		1			1	83	170	56.2	17.8	3.5	65.0
21		28		1				90	105	42.7	24.0	3.5	66.0
22		18		2				151	269	38.5	12.4	3.5	67.0
23		21		2				149	240	39.4	9.4	3.5	68.0
24		22		4			1	150	458	32.5	10.4	3.5	67.0
25		15		2			1	128	319	37.5	8.8	3.5	67.0
26		23		2			2	169	39	36.9	6.8	3.5	67.0
27		21						166	219	35.3	6.4	3.5	67.0
28		19		2			2	184	112	41.1	11.5	3.5	67.0
29		10					4	253	108	36.4	8.2	3.5	67.0
30		25					2	309	202	31.4	.0	3.5	68.0
31		15					3	260	124	22.3	.0	3.5	68.0
TOTAL		1,821		282		1	55	3,027	9,697				
AVERAGE		59		11		1	2	98	313	63.1	14.8		

TABLE 90

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		10					3	298	229	42.0	.0	3.5	68.0
2		20		3				669	125	27.6	.0	3.5	68.0
3		1					8	420	66	37.5	.0	3.5	68.0
4		8		1	2		9	349	61	37.8	.0	3.6	68.0
5		1		1			5	386	67	39.1	.0	3.5	70.0
6		10		1			5	458	38	20.4	.0	3.9	70.0
7		4		1			5	218	35	16.6	.0	3.9	70.0
8		4			1		2	345	44	25.6	.0	3.0	70.0
9		7		2	1		3	359	30	29.7	.0	3.9	70.0
10		5		1	1		2	395	11	26.1	.0	4.0	70.0
11		3		2	1		1	674	5	35.1	.0	4.0	70.0
12		10		2			2	615	11	21.4	.0	4.1	71.0
13		4		1			2	372	3	25.2	.0	4.2	71.0
14			8	1				287	6	23.7	.0	4.2	71.0
15			3	1			1	223	9	35.9	.0	4.2	71.0
16				1				278	29	31.5	.0	4.5	72.0
17			3					165	20	33.4	.0	4.5	72.0
18			5	1				174	5	32.7	.0	4.5	73.0
19			13	1	1			454	10	47.2	.0	4.5	73.0
20			5					365	6	45.6	.0	4.5	73.0
21			4					379	12	30.9	.0	4.5	73.0
22			9	2				371		12.9	1.4	4.5	73.0
23			3	1			1	182		18.9	.0	4.5	73.0
24			8		2			264	4	34.8	.0	4.5	73.0
25			12	1			1	109		27.9	.0	4.5	73.0
26			5	1			1	159	4	46.6	.0	4.5	73.0
27			5					210	5	46.5	.0	4.5	73.0
28			4	3				232	2	43.7	.0	4.5	74.0
29			4		2			220	1	34.8	.0	4.5	74.0
30			5	1	1			227		40.7	.0	4.5	74.0
31			6	2	1			244		23.1	.0	4.5	74.0
TOTAL		87	102	31	12		52	10,101	838				
AVERAGES		7	6	1	1		3	326	32	32.1	.0		

TABLE 91

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			8		1			129		31.1	.0	4.5	74.0
2			4	1				175		24.0	.0	4.5	74.0
3			9					118		32.4	.0	4.5	74.0
4			7	3	1			159		24.5	.0	4.5	74.0
5			4	3	1			282	1	21.6	.0	4.5	74.0
6			3					117	2	27.4	.0	4.5	74.0
7			11					162		26.1	.0	4.3	74.0
8			15	3				152		41.5	.0	4.3	74.0
9			8	9	3	1		403		45.2	.0	4.3	73.0
10			11	5	1	1		199		49.5	.0	3.5	73.0
11			8	5				553		24.4	.0	3.3	72.0
12			15	18	3	1		1,022	5	34.2	.0	3.0	71.0
13			13	24	1	1		1,141		33.8	.0	3.0	69.0
14			16	7	2	1		935	1	34.4	.0	3.0	68.0
15			24	7	5			1,177		37.3	.0	3.0	68.0
16			29	40	7	3		2,102		35.2	.0	3.0	69.0
17			20	13		6		1,740		34.5	.0	3.0	69.0
18			25	17	2	2		2,031	1	23.7	.0	3.5	68.0
19			22	19	1	3		2,259		31.9	.0	3.5	67.0
20			31	40	1	1		2,396		36.4	.0	3.5	67.0
21			53	43				2,666		35.4	.0	3.5	67.0
22			48	25	2	1		2,203		37.8	.0	3.5	66.0
23			31	24				1,754		30.9	.0	3.5	66.0
24			25	22	1			1,581		39.8	.0	3.5	65.0
25			16	18	4	2		2,071		35.3	.0	3.5	66.0
26			14	42		1		2,359		33.0	.0	3.6	65.0
27			23	23				2,370		33.9	.0	3.6	65.0
28			23	20	1	2		2,586		33.6	.0	3.8	65.0
29			11	22				3,383	2	34.8	.0	3.8	64.0
30			15	13	1	2		1,779		35.9	.0	3.8	64.0
TOTAL			542	466	38	28		40,004	12				
AVERAGE			18	18	2	2		1,333	2	33.3	.0		

TABLE 92

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER MONUMENTAL PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

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	40	3	3		2,352		22.8	.0	3.8	64.0
2			9	14		1		2,556	1	11.7	.0	3.8	64.0
3			3	21	4	1		2,819		23.1	.0	3.8	63.0
4			8	8				1,752	2	23.9	.0	3.8	63.0
5			5	7	2	1		1,504		24.3	.0	3.8	62.0
6			13	19	1			1,282		32.4	.0	3.8	62.0
7			18	17		1		1,106		32.0	.0	3.8	62.0
8			3	5	1	1		1,031		30.4	.0	3.8	62.0
9			3	13	2			1,037		24.0	.0	3.8	62.0
10			14	12				1,630		26.5	.0	3.8	62.0
11			1	8	1			717	1	26.7	.0	3.8	60.0
12			6	4				651		30.8	.0	3.8	60.0
13			3	6				585		34.7	.0	3.8	60.0
14			1	7				727		33.2	.0	3.8	60.0
15			6	4				684		27.2	.0	3.8	60.0
16			6	2				439		27.7	.0	3.8	60.0
17			11	3				748		29.2	.0	3.8	60.0
18			4	4	0			624		36.7	.0	3.8	59.0
19			6	4	1	3		357	1	39.5	.0	3.8	59.0
20				1		3		328		38.7	.0	3.8	59.0
21			1			1		308	1	43.9	.0	3.8	58.0
22			1	2				402		41.5	.0	3.8	58.0
23				3				306		38.6	.0	3.8	58.0
24			7	10				277		36.2	.0	3.0	57.0
25			3	2		1	1	285		39.6	.0	3.0	57.0
26			4	1			1	284	5	38.0	.0	3.2	57.0
27			2	2	1			207	4	33.4	.0	3.3	57.0
28			2	2				178		41.4	.0	3.3	57.0
29			5	6				307	1	49.7	.0	3.3	57.0
30			1	9				397		33.2	.0	3.3	57.0
31				4				384		31.8	.0	3.3	56.0
TOTAL			158	240	16	16	2	26,264	16				
AVERAGE			6	8	2	2	1	847	2	32.3	.0		

TABLE 93
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER MONUMENTAL PROJECT - 1983

DATE	NOVEMBER			DECEMBER		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	41.8	3.3	56.0	39.7		
2	36.0	3.3	56.0	55.8		
3	41.6	3.3	56.0	43.2		
4	42.4	3.3	56.0	34.8		
5	48.9			58.0		
6	48.5			59.3		
7	46.0			44.8		
8	46.7			48.6		
9	44.0			49.4		
10	38.0			50.0		
11	41.7			43.3		
12	42.6			55.5		
13	44.6			55.9		
14	45.4			48.6		
15	45.6			52.1		
16	47.7			53.7		
17	55.8			46.0		
18	57.8			35.3		
19	42.0			63.0		
20	42.7			57.2		
21	60.7			45.6		
22	54.5			51.8		
23	55.6			61.2		
24	53.1			36.2		
25	60.6			26.6		
26	50.7			53.8		
27	41.6			55.8		
28	63.0					
29	54.8					
30	47.4					

TABLES 94

PEAK DAYS OF FISH MIGRATION
LOWER MONUMENTAL DAM - 1969-1983

	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

TABLE 95

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER MONUMENTAL DAM
1969 - 1983

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
TOTAL	1		2	86,101	300,183	135,877	88,816	10,433	39,782	10,490	462	8	672,155
15-YEAR AVERAGE				5,740	20,012	9,058	5,921	696	2,652	699			44,810

TABLE 96

MONTHLY COUNT OF STEELHEAD TROUT
LOWER MONUMENTAL DAM - 1969-1983

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
TOTAL	252	1,030	3,466	31,123	14,063	1,331	26,401	69,980	302,931	206,927	5,804	782	664,090
15-YEAR AVERAGE				2,075	938	89	1,760	4,665	20,195	13,795			44,273

TABLE 97

YEARLY TOTALS OF SALMONID FISH COUNTED OVER LITTLE GOOSE DAM
1970 - 1983

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.

TABLE 98

YEARLY TOTALS OF SALMONIDS COUNTED OVER LOWER GRANITE DAM
1975 - 1983

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
TOTAL	241,904	388,241	1,993	2,569	634,707
9-YEAR AVERAGE	26,878	43,138	221	285	70,523

TABLE 99

MONTHLY TOTALS OF SALMONIDS AND SHAD COUNTED OVER LOWER GRANITE DAM
1969 - 1983

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK	-	-	-	113	7,676	3,551	3,167	234	828	552	79	-	16,200
STEELHEAD	-	-	3,336	1,416	244	7	1,676	8,899	32,063	34,028	4,425	140	86,234
SOCKEYE	-	-	-	-	-	4	94	23	1	-	-	-	122
COHO	-	-	-	-	-	-	-	1	28	22	-	-	51
TOTAL SALMONID	-	-	3,336	1,529	7,920	3,562	4,937	9,157	32,920	34,602	4,504	140	102,607
SHAD	-	-	-	-	-	-	496	53	3	-	-	-	552

TABLE 100
WATER TEMPERATURE AND STREAM FLOW DATA
LOWER GRANITE PROJECT - 1983

DATE	JANUARY			FEBRUARY		
	DISCHARGE	TURBIDITY	WATER TEMP.	DISCHARGE	TURBIDITY	WATER TEMP.
1	44.3	4.5	39.0	54.2	4.3	39.0
2	40.8	4.5	39.0	54.5	4.3	39.0
3	46.9	4.5	39.0	50.5	4.0	38.0
4	46.8	4.2	38.0	46.2	3.5	38.0
5	48.5	4.2	38.0	40.6	3.8	37.0
6	63.5	4.0	38.0	37.1	4.0	37.0
7	67.0	2.5	39.0	42.3	4.0	37.0
8	81.4	2.0	39.0	39.6	3.8	37.0
9	78.8	1.8	38.0	44.5	3.8	37.0
10	84.3	1.6	38.0	41.5	4.0	38.0
11	66.2	1.5	38.0	46.9	4.0	38.0
12	72.8	1.6	39.0	39.8	4.0	38.0
13	62.4	1.6	39.0	42.3	4.0	38.0
14	62.1	2.5	40.0	48.6	4.5	38.0
15	48.0	2.8	39.0	48.1	4.5	38.0
16	43.7	3.0	39.0	53.9	4.0	39.0
17	59.0	4.0	39.0	57.6	3.8	40.0
18	50.6	4.0	39.0	68.3	1.8	40.0
19	48.2	4.0	39.0	88.8	1.7	40.0
20	51.6	4.0	38.0	84.0	1.5	41.0
21	53.1	4.2	38.0	80.6	1.0	41.0
22	47.0	4.4	38.0	74.7	1.0	41.0
23	47.7	4.4	38.0	83.4	1.0	41.0
24	53.5	4.4	39.0	79.6	1.0	41.0
25	46.2	4.4	39.0	82.4	1.0	41.0
26	52.5	4.5	39.0	90.7	2.2	40.0
27	54.5	4.5	39.0	91.1	2.4	41.0
28	58.1	4.5	38.0	89.7	2.3	42.0
29	55.9	4.0	38.0			
30	53.4	4.0	38.0			
31	56.9	4.5	38.0			

TABLE 101

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MARCH 1983

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		87.3	47.4	2.2	42.0
2								182		83.2	50.0	2.2	42.0
3								120		86.2	51.3	2.3	42.0
4								128		91.8	45.0	2.2	43.0
5								124		109.3	61.7	2.2	44.0
6								64		115.1	93.3	2.0	44.0
7								130		99.9	15.2	1.8	44.0
8								182		107.5	23.1	1.6	44.0
9								139		106.1	29.4	1.7	44.0
10								149		110.7	31.2	1.7	45.0
11								185		115.2	49.4	1.7	45.0
12								208		118.1	60.6	1.5	46.0
13								104		120.8	111.7	1.3	46.0
14								124		122.1	76.4	1.5	46.0
15								73		126.4	99.7	1.5	45.0
16								68		120.5	97.7	1.1	45.0
17								67		118.6	111.5	1.1	45.0
18								76		118.8	100.6	1.2	45.0
19								59		116.2	113.9	1.2	45.0
20								31		110.9	110.7	1.2	46.0
21								119		104.7	67.1	1.1	46.0
22								101		107.5	62.0	1.4	46.0
23								106		97.9	46.8	1.4	46.0
24								77		84.6	46.1	1.4	46.0
25								102		84.9	50.2	1.5	46.0
26								114		76.9	30.1	1.5	46.0
27								62		87.0	37.2	1.3	46.0
28								119		81.2	18.1	1.4	46.0
29								66		79.3	36.6	1.3	47.0
30								83		77.7	41.7	1.2	46.0
31										85.8	48.7	1.5	46.0
TOTAL								3,336					
AVERAGE								111		101.7	60.1		

TABLE 102

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - APRIL 1983

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								66		92.1	45.1	1.3	46.0
2								105		89.9	48.2	1.3	46.0
3								56		89.4	49.4	1.3	46.0
4								64		93.8	49.6	1.6	46.0
5								60		81.0	47.8	1.6	47.0
6								65		90.4	44.1	1.6	46.0
7								66		82.1	29.7	1.7	46.0
8								88		76.3	3.7	1.5	46.0
9								43		73.8	13.8	1.5	46.0
10								47		80.7	31.8	1.4	47.0
11								68		72.2	6.5	1.6	48.0
12								46		75.3	25.2	1.6	48.0
13								67		80.7	26.6	1.6	48.0
14								50		77.8	24.7	1.6	48.0
15								34		66.0	22.5	1.6	49.0
16								41		59.6	21.4	1.6	49.0
17								46		56.5	21.5	1.6	49.0
18								29		55.1	14.9	1.5	49.0
19								49		50.8	8.9	1.5	49.0
20								24		51.6	5.7	1.6	50.0
21								25		49.5	2.6	1.5	50.0
22								33		59.0	2.7	1.7	51.0
23	5							51		75.4	15.3	1.6	51.0
24	10							36		103.1	21.0	1.6	51.0
25	6							19		107.1	21.7	1.7	51.0
26	8							32		110.8	25.7	1.7	51.0
27	4							24		108.3	42.8	1.7	50.0
28	12							24		102.8	38.7	1.6	50.0
29	25							30		99.4	36.2	1.6	51.0
30	43							28		101.6	36.6	1.7	51.0
TOTAL	113							1,416					
AVERAGE	14							47		80.4	26.1		

TABLE 103

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - MAY 1983

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	98							20		103.8	38.8	1.7	51.0
2	178							17		105.7	18.4	1.7	53.0
3	196			2				13		106.9	23.8	1.8	54.0
4	224			0				18		108.2	19.4	1.8	54.0
5	200			2				18		116.7	26.2	1.8	54.0
6	183			2				27		121.3	38.6	1.8	54.0
7	112			0				9		121.8	44.2	1.7	54.0
8	167			3				12		114.4	38.4	1.7	54.0
9	146			1				13		118.7	20.8	1.6	53.0
10	175			7				14		111.6	7.6	1.7	53.0
11	148			5				12		107.4	3.7	1.7	53.0
12	136			6				13		107.7	.0	1.8	54.0
13	87			7				9		99.7	.0	1.8	54.0
14	366			13				9		97.9	.0	1.8	54.0
15	687			23				12		100.4	.0	1.8	54.0
16	220			15				5		102.1	.0	1.7	54.0
17	181			13				5		107.1	.0	1.8	54.0
18	135			11				2		96.1	.0	1.9	54.0
19	114			10				3		95.7	.0	1.8	54.0
20	157			15				1		95.1	.0	1.9	55.0
21	401			22				5		94.6	.0	1.9	55.0
22	439			18				1		101.9	.0	1.9	55.0
23	121			8				1		112.2	.0	1.9	56.0
24	235			24						120.4	1.1	1.9	56.0
25	271			17						131.4	6.9	1.9	56.0
26	636			24				2		150.2	21.8	1.9	57.0
27	554			26				2		170.1	41.5	1.9	57.0
28	445			13						187.2	60.3	1.9	58.0
29	173			4						198.3	69.6	1.5	58.0
30	105			12				1		191.7	63.1	1.1	58.0
31	71			12						192.3	64.1	1.0	56.0
TOTAL	7,361			315				244					
AVERAGE	237			11				9		122.2	19.6		

TABLE 104

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JUNE 1983

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	76			6						184.3	56.6	1.1	55.0
2	28			6						176.8	60.5	1.0	55.0
3	42			5				2		176.2	56.9	1.0	55.0
4	186			12						166.9	43.8	1.1	56.0
5	179			8						161.4	36.7	1.2	56.0
6	99			11						156.5	31.5	1.2	57.0
7	121			10				1		157.5	38.8	1.4	57.0
8	112			9				1		164.8	39.7	1.4	59.0
9	85			23						151.9	26.3	1.6	59.0
10	105			8						164.7	40.9	1.2	59.0
11	216			24						163.3	39.8	1.6	60.0
12	219			27						157.2	36.4	1.5	58.0
13	153			15						151.2	35.9	1.6	56.0
14	211			14						139.3	21.6	1.6	57.0
15	101			8						129.5	9.5	1.6	57.0
16	63			8						132.8	11.2	1.7	60.0
17	47									119.9	.8	1.8	60.0
18		108		10						121.8	.0	2.0	60.0
19		80		13						124.8	.0	2.2	60.0
20		34						1		120.3	.0	2.3	59.0
21		115		9						108.1	.0	2.5	59.0
22		52		8						100.0	.0	2.4	59.0
23		130		28						92.6	.0	2.5	59.0
24		66		13				1		85.4	.0	2.2	59.0
25		149		20						81.7	.0	2.2	62.0
26		76		6				1		87.3	.0	2.9	62.0
27		56		16						87.6	.0	2.7	61.0
28		83		26						88.3	.0	2.8	61.0
29		99		23			2			94.1	.0	2.8	61.0
30		82		12			2			94.9	.0	2.5	63.0
TOTAL	2,043	1,130		378			4	7					
AVERAGE	120	87		13			2	1		131.4	19.6		

TABLE 105

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - JULY 1983

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		51		24			1	1		89.4	.0	3.0	62.0
2		167		39			2	1		92.2	.0	2.7	62.0
3		82		24			3	1		104.3	.0	2.8	62.0
4		71		20			2	1		105.6	.0	3.0	62.0
5		25		11			3	2		90.3	.0	3.1	62.0
6		186		60			2	4	7	88.9	.0	3.3	62.0
7		123		38			7	14	18	82.3	.0	3.3	63.0
8		121		29			3	11	3	86.1	.0	3.5	63.0
9		201		22			5	7	1	77.4	.0	3.0	64.0
10		84		17				17	16	71.0	.0	3.4	64.0
11		35		13			6	4	21	79.5	.0	3.4	64.0
12		61		11			2	12	10	79.8	.0	3.4	65.0
13		21		12			8	29		73.1	.0	3.4	65.0
14		54		25			4	34	117	69.2	.0	3.6	65.0
15		64		32			1	48	26	64.8	.0	4.2	64.0
16		86		25			10	37	41	60.0	.0	3.4	63.0
17		313		51			11	67	41	67.3	.0	3.5	63.0
18		29		8			1	26	13	62.8	.0	4.0	64.0
19		25		9			3	31		53.6	.0	4.1	65.0
20		44		16			2	81		54.1	.0	4.3	65.0
21		94		13			3	133	14	40.7	.0	4.5	66.0
22		158		17			2	81	24	41.1	.0	5.0	66.0
23		182		12			1	96	41	41.8	.0	5.0	66.0
24		109		12			1	72		34.4	.0	5.0	66.0
25		43		5			2	61	46	36.2	.0	5.0	67.0
26		40		3				145	40	37.5	.0	5.0	67.0
27		29		6			1	102		33.6	.0	5.0	67.0
28		32					4	115		36.1	.0	5.0	67.0
29		25		5			2	157	17	32.1	.0	5.0	68.0
30		26		7			2	130		33.8	.0	5.0	69.0
31		16		4				156		26.6	.0	4.0	68.0
TOTAL		2,597		570			94	1,676	496				
AVERAGE		84		19			3	54	28	62.8	.0		

TABLE 106

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - AUGUST 1983

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		25		1				112		32.6	.0	4.1	70.0
2		42		1			2	210		28.4	.0	4.6	70.0
3		6		1			2	302		37.7	.0	4.7	70.0
4		12		2			2	332		36.0	.0	4.7	71.0
5		12		2			2	253		25.6	.0	4.6	71.0
6		14		1				321		30.0	.0	4.8	71.0
7		9					1	245		23.7	.0	4.9	71.0
8		7		2				202		24.7	.0	5.0	71.0
9		4		1			1	265		25.3	.0	5.0	72.0
10		7						170	9	25.5	.0	5.0	72.0
11		7					1	205	4	26.5	.0	5.0	73.0
12		8					3	557	2	27.6	.0	5.0	74.0
13		4		1			1	588	8	29.3	.0	5.0	74.0
14		7					2	360	2	27.0	.0	5.0	74.0
15		1		1				214	2	32.7	.0	5.0	74.0
16		2						508	20	29.6	.0	5.0	74.0
17		1						408		31.0	.0	5.0	74.0
18			1				1	402		31.7	.0	5.0	74.0
19			1				1	281		34.4	.0	5.0	74.0
20			2				4	375		37.6	.0	5.0	74.0
21			13	3				440		27.1	.0	5.0	74.0
22			5					309		20.2	.0	5.0	73.0
23								218		26.1	.0	5.0	73.0
24				1				290	2	35.5	.0	5.0	72.0
25			1					73		37.5	.0	5.0	72.0
26			3					170		43.1	.0	5.0	73.0
27			6	1				228	2	42.0	.0	5.0	73.0
28			1					281	1	34.8	.0	5.0	72.0
29			5	2				219	1	40.2	.0	5.0	73.0
30			5					187		33.5	.0	5.0	72.0
31			3		1			174		20.7	.0	5.0	72.0
TOTAL		168	46	20	1		23	8,899	53				
AVERAGE		10	4	1	1		2	287	5	30.9	.0		

TABLE 107

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - SEPTEMBER 1983

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			2	6	2			129		32.5	.0	5.0	72.0
2			3	6		1		197		27.3	.0	4.6	72.0
3			2	1				194		30.5	.0	3.9	72.0
4			5	2				146		23.3	.0	3.5	72.0
5			6					373		25.1	.0	3.4	72.0
6			8	1				169		29.0	.0	3.8	71.0
7			6	6				211		31.7	.0	2.5	71.0
8			5	2				152		37.1	.0	3.0	70.0
9			10	1	1			248		33.7	.0	3.2	70.0
10			1	5				173		43.0	.0	3.6	69.0
11			10	2				144		30.7	.0	3.8	69.0
12			11	13	1			248		38.9	.0	4.0	68.0
13			9	10				294		28.5	.0	4.6	68.0
14			9	14				560	2	38.1	.0	4.8	67.0
15			13	21				843		35.8	.0	4.9	67.0
16			11	21				950		35.5	.0	5.0	67.0
17			12	29				1,725		31.9	.0	4.9	66.0
18			12	23				1,001		26.0	.0	3.8	65.0
19			10	15				721		30.8	.0	3.0	65.0
20			11	24	2	1		1,329	1	34.0	.0	3.6	64.0
21			9	14				1,760		36.6	.0	3.4	64.0
22			12	27				1,343		35.7	.0	3.8	64.0
23			8	32				1,674		31.3	.0	3.5	63.0
24			15	25				2,317		39.9	.0	3.5	63.0
25			11	24	1	5		1,767		33.8	.0	4.0	63.0
26			8	32	1	6		2,393		32.6	.0	4.0	62.0
27			23	53	4	2	1	3,015		34.0	.0	4.5	62.0
28			10	56	1			2,743		32.0	.0	3.5	61.0
29			8	35				2,087		28.0	.0	3.0	61.0
30			20	48	0			3,157		31.8	.0	3.6	61.0
TOTAL			280	548	13	15	1	32,063		3			
AVERAGE			9	19	1	3	1	1,069		1	32.6	.0	

TABLE 108

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - OCTOBER 1983

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			27	38	2			2,857		26.1	.0	4.0	61.0
2			8	23	1	2		2,820		15.8	.0	4.0	61.0
3			10	40	1	2		3,064		23.1	.0	3.8	60.0
4			4	18				1,993		25.9	.0	4.6	60.0
5			3	12	1			1,001		25.7	.0	4.6	60.0
6			7	26	2	1		1,299		29.6	.0	4.8	59.0
7			7	19	1			2,426		26.9	.0	5.0	59.0
8			14	20				2,083		28.3	.0	5.0	59.0
9			2	14	1	2		1,817		22.1	.0	5.0	59.0
10			8	7	2	4		1,307		23.4	.0	4.9	58.0
11				10				898		32.6	.0	3.4	58.0
12			6	10				1,078		33.0	.0	3.3	58.0
13			1	8				734		32.9	.0	3.6	58.0
14			7	10				957		33.2	.0	4.0	58.0
15			6	9				1,714		30.8	.0	4.5	58.0
16			4	17				941		28.0	.0	4.5	59.0
17			1	7				330		32.8	.0	3.7	58.0
18			1	6				551		33.8	.0	3.5	58.0
19			3	8				650		37.6	.0	4.0	58.0
20			3	7				403		37.4	.0	4.6	58.0
21			2	6				593		35.7	.0	4.3	58.0
22			6	7				492		38.1	.0	4.2	58.0
23			8	7				865		37.3	.0	4.0	58.0
24			2	2				445		35.6	.0	4.0	58.0
25			7	9				499		40.7	.0	3.6	58.0
26			5	4				286		36.6	.0	4.0	58.0
27			6	5				428		39.1	.0	4.6	57.0
28			2	6				361		36.4	.0	4.6	57.0
29			11	9				558		35.3	.0	4.5	57.0
30			6	0				359		31.1	.0	4.4	57.0
31			4	7				219		36.1	.0	4.8	57.0
TOTAL			181	371	11	11		34,028					
AVERAGE			6	12	1	2		1,098		31.6	.0		

TABLE 109

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - NOVEMBER 1983

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			2	1				286		45.6	.0	4.6	57.0
2				10				251		38.5	.0	4.5	56.0
3			2	5				191		41.3	.0	4.0	56.0
4			1	4				170		37.5	.0	4.4	56.0
5			2	4				230		46.5	.0	4.0	55.0
6			4	4				264		48.3	.0	3.8	55.0
7			4	4				187		43.4	.0	4.0	55.0
8			1	4				221		43.8	.0	4.4	56.0
9			2	4				193		39.6	.0	3.6	55.0
10			2	5				107		39.5	.0	3.6	55.0
11				2				302		45.2	.0	3.6	55.0
12			4	2				276		43.0	.0	3.5	55.0
13				1				242		42.8	.0	3.0	55.0
14			1	1				208		50.2	.0	3.5	55.0
15			1					162		45.8	.0	3.7	54.0
16								142		48.5	.0	3.7	54.0
17								136		46.5	.0	3.6	53.0
18										50.2	.0	3.6	53.0
19								193		47.5	.0	3.6	53.0
20			1					312		52.7	.0	3.8	52.0
21										53.3	.0	3.6	52.0
22								73		51.2	.0	3.5	52.0
23										52.2	.0	3.5	51.0
24										51.2	.0	3.5	50.0
25										52.1	.0	3.5	49.0
26								83		50.8	.0	3.6	48.0
27								82		47.3	.0	3.5	47.0
28								64		54.7	.0	3.6	47.0
29			1					50		49.2	.0	3.6	47.0
30										53.4	.0	3.7	46.0
TOTAL			28	51				4,425					
AVERAGE			2	4				184		47.1	.0		

TABLE 110

MONTHLY FISH PASSAGE SUMMARY REPORT - LOWER GRANITE PROJECT
US ARMY ENGINEER DISTRICT, PORTLAND - DECEMBER 1983

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								29		41.7	.0	3.8	46.0
2								29		49.1	.0	3.6	46.0
3										46.9	.0	3.6	46.0
4										42.4	.0	3.6	46.0
5										50.6	.0	3.6	46.0
6										48.5	.0	3.8	44.0
7								6		48.5	.0	3.8	44.0
8										50.3	.0	3.7	44.0
9								12		46.9	.0	3.6	43.0
10								22		51.0	.0	3.8	43.0
11								23		49.3	.0	3.9	43.0
12										50.6	.0	4.2	42.0
13								13		47.3	.0	4.5	42.0
14								2		48.8	.0	4.6	43.0
15								4		47.7	.0	4.6	43.0
16										48.0	.0	4.6	43.0
17										47.5	.0	4.6	42.0
18										45.4	.0	4.5	42.0
19										49.3	.0	4.2	42.0
20										55.6	.0	4.2	42.0
21										49.7	.0	4.2	40.0
22										39.7	.0		
23										54.3	.0	4.5	39.0
24										44.3	.0		
25										40.6	.0		
26										49.2	.0		
27										49.2	.0	4.5	36.0
TOTAL								140					
AVERAGES								12		47.9	.0		

TABLE 111

PEAK DAYS OF FISH MIGRATION
LOWER GRANITE DAM - 1975-1983

	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

TABLE 112

MONTHLY TOTALS OF CHINOOK COUNTED OVER LOWER GRANITE DAM
1975 - 1983

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
TOTAL				18,400	116,141	55,269	34,181	4,200	8,309	4,828	567	9	241,904
9-YEAR AVERAGE				2,044	12,905	6,141	3,798	467	923	536	63	1	26,878

TABLE 113

MONTHLY COUNT OF STEELHEAD TROUT OVER LOWER GRANITE DAM
1975 - 1983

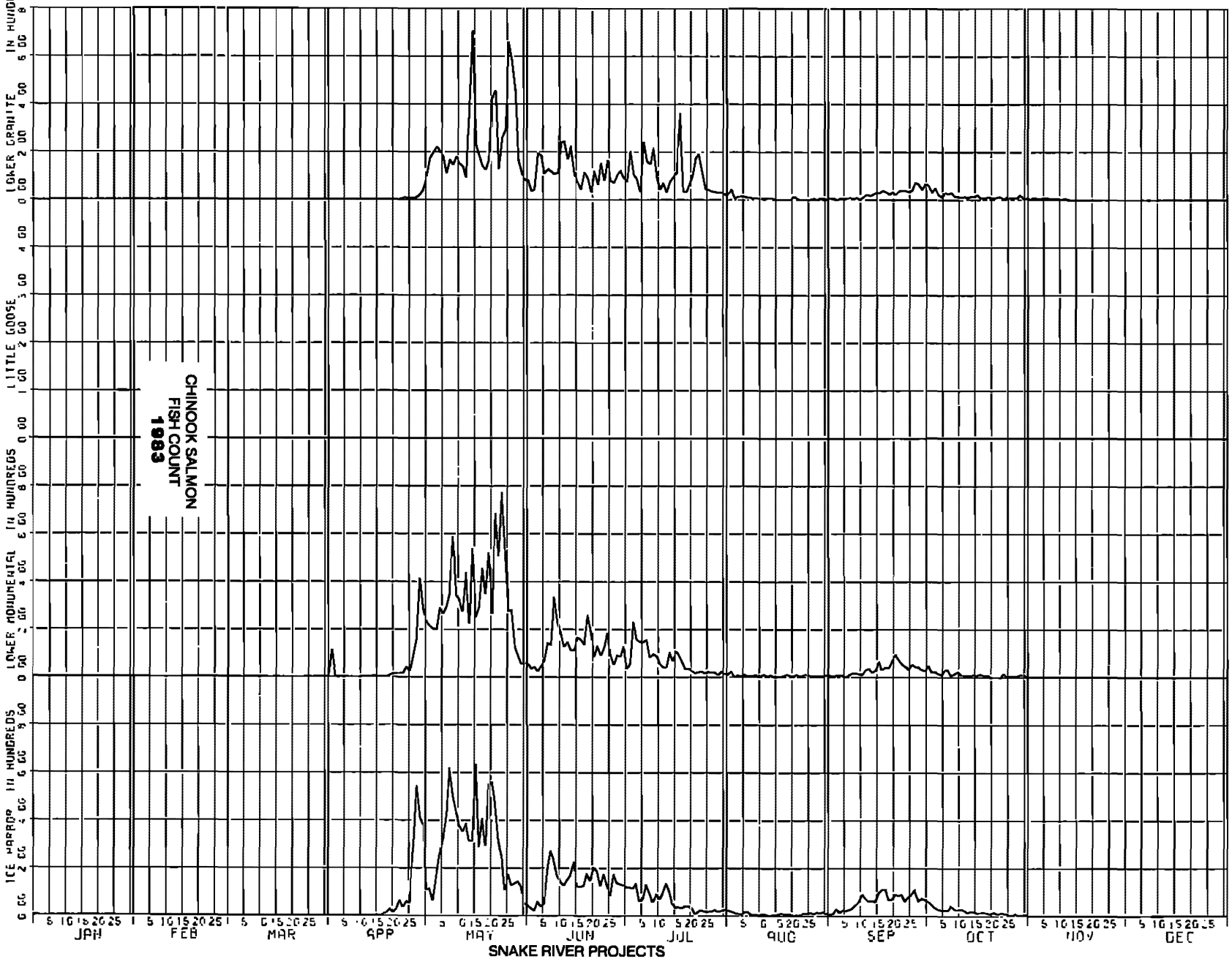
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975				1,724	1,065	104	102	3,337	6,396	3,584	703	296	17,311
1976	173	21	181	1,120	575	120	527	3,816	8,720	6,837	860	67	23,017
1977		9	142	1,235	229	59	1,538	2,652	16,296	27,492	2,950	435	53,037
1978	354	716	2,276	2,009	252	9	478	2,721	10,829	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
TOTAL	539	790	10,716	15,681	5,805	515	8,274	38,132	122,348	161,811	21,367	2,323	388,241
9-YEAR AVERAGE			1,191	1,742	645	57	919	4,237	13,594	17,979	2,367	258	43,138

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.

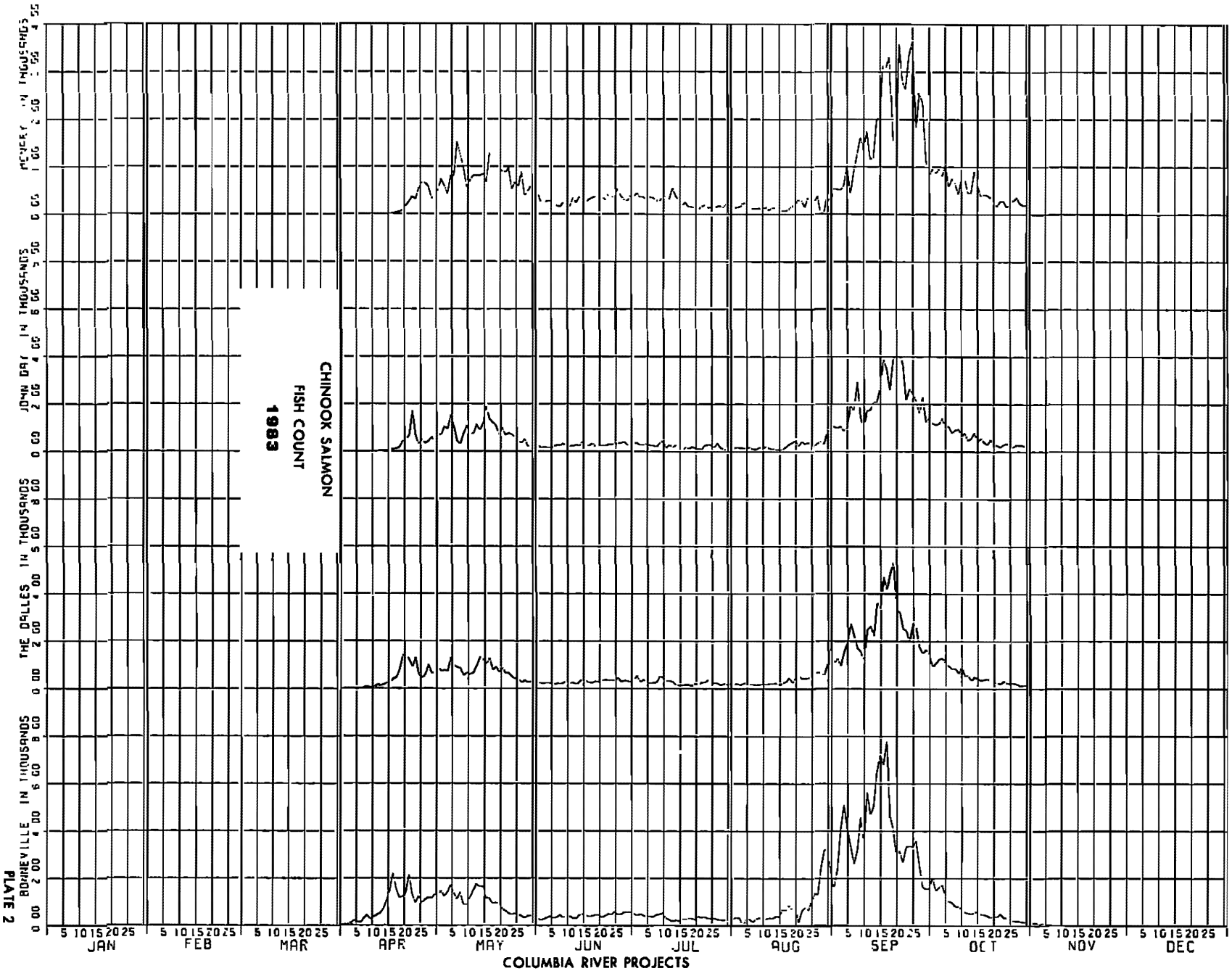
1981 concluded visual counting at Little Goose Dam. Counting is presently being done by an automatic system, therefore, Little Goose Dam fish run graph is blank.

PLATE 1



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT WALLA WALLA

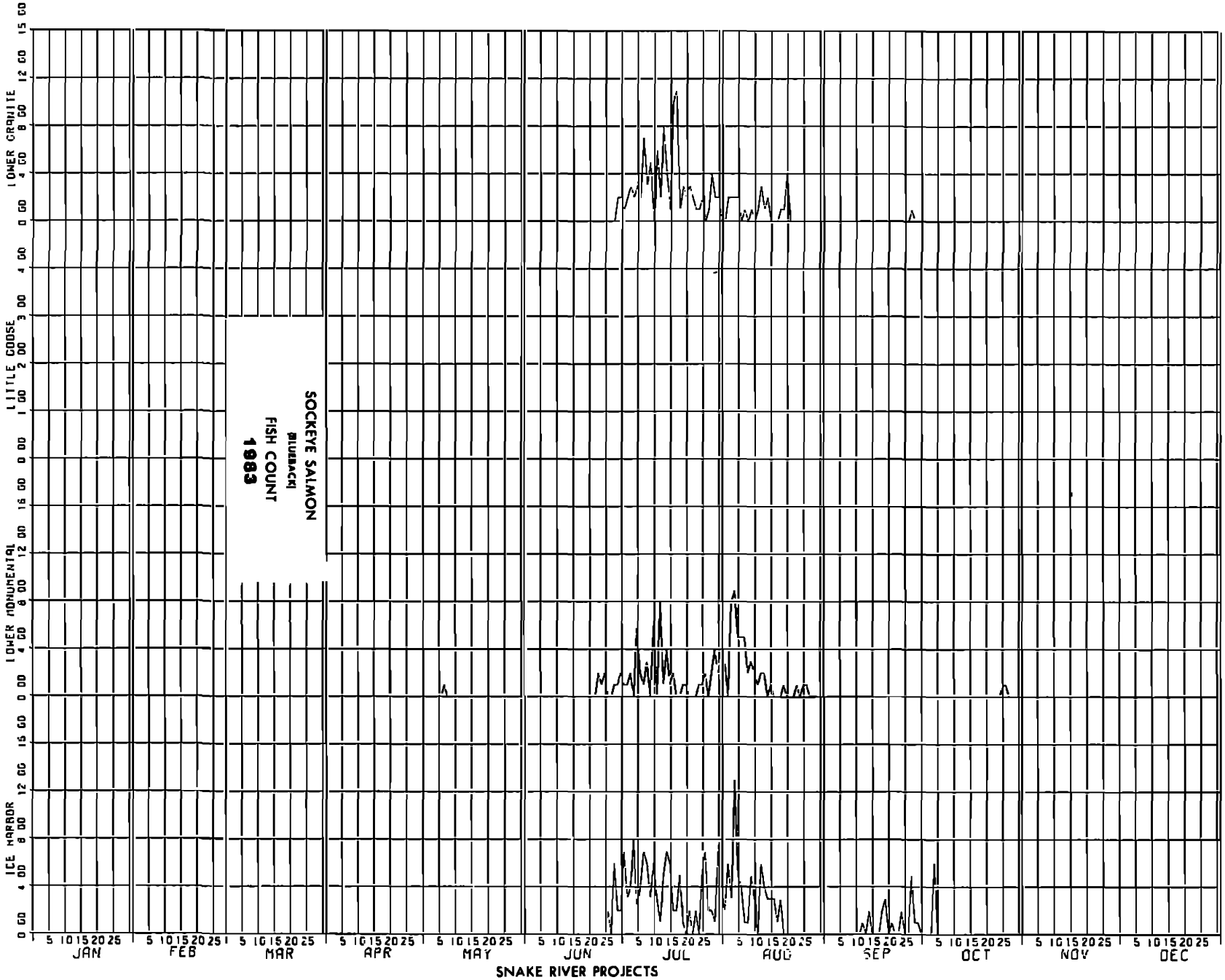


COLUMBIA RIVER PROJECTS

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PLATE 2

PLATE 3



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, WALLA WALLA

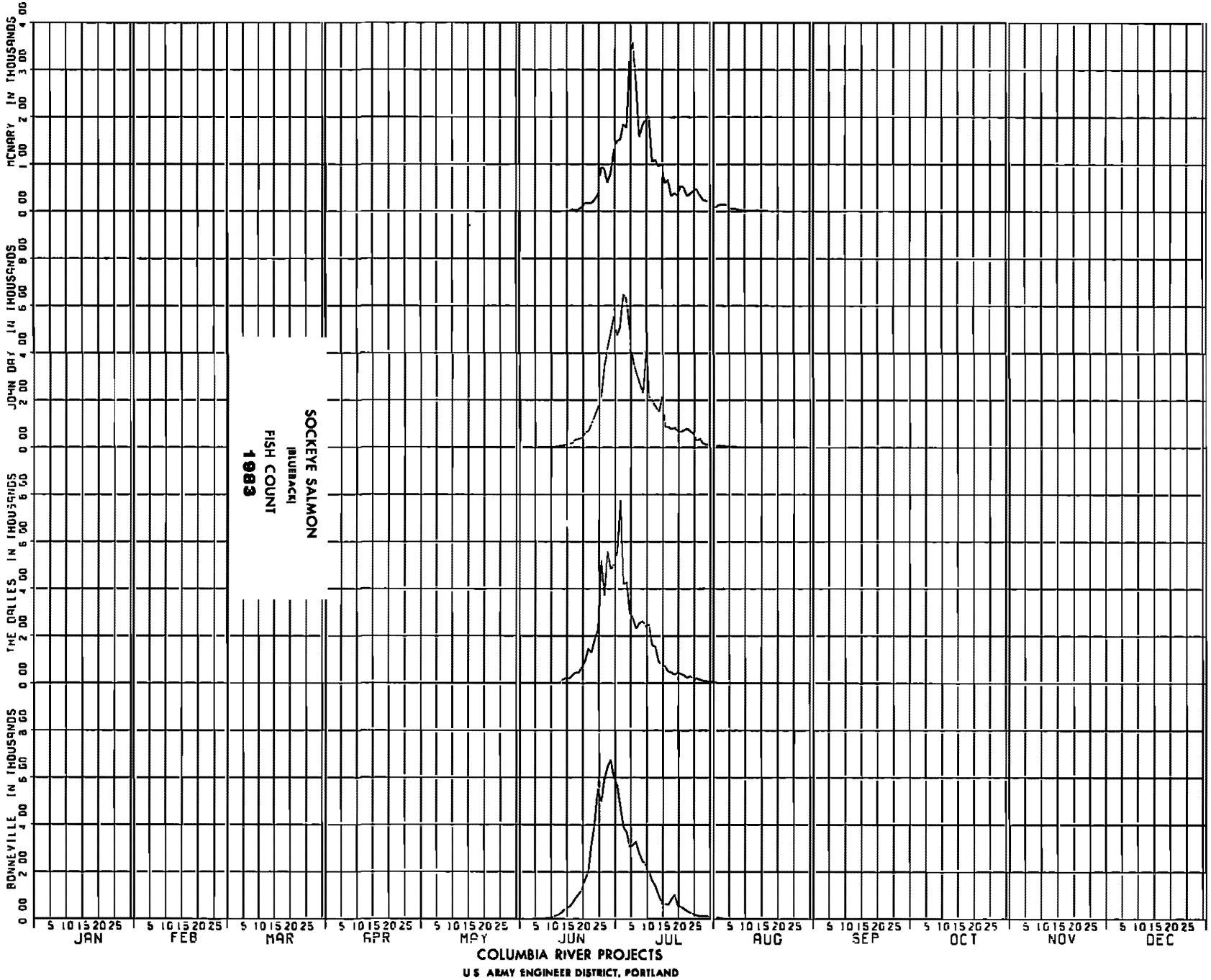
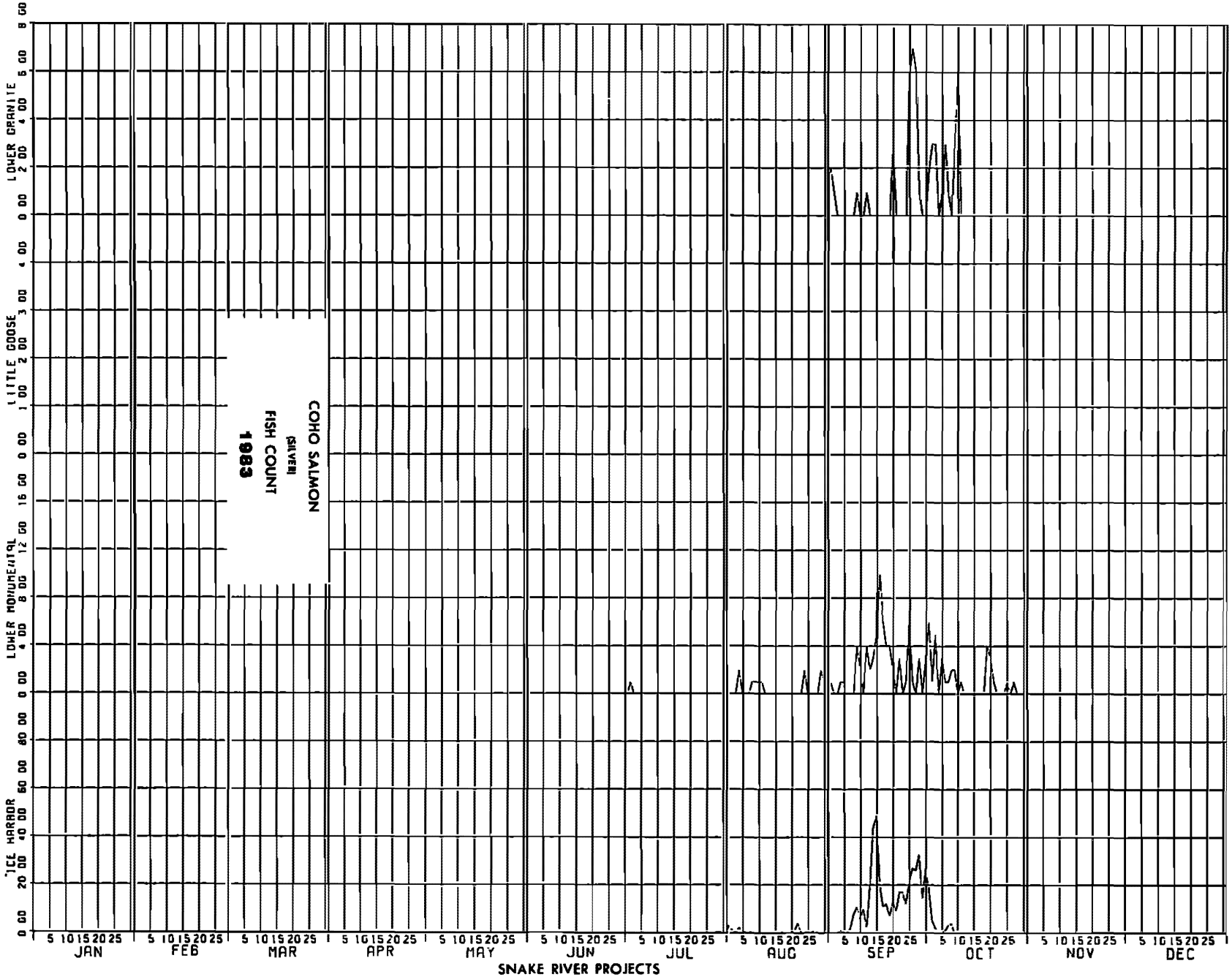


PLATE 4

COLUMBIA RIVER PROJECTS

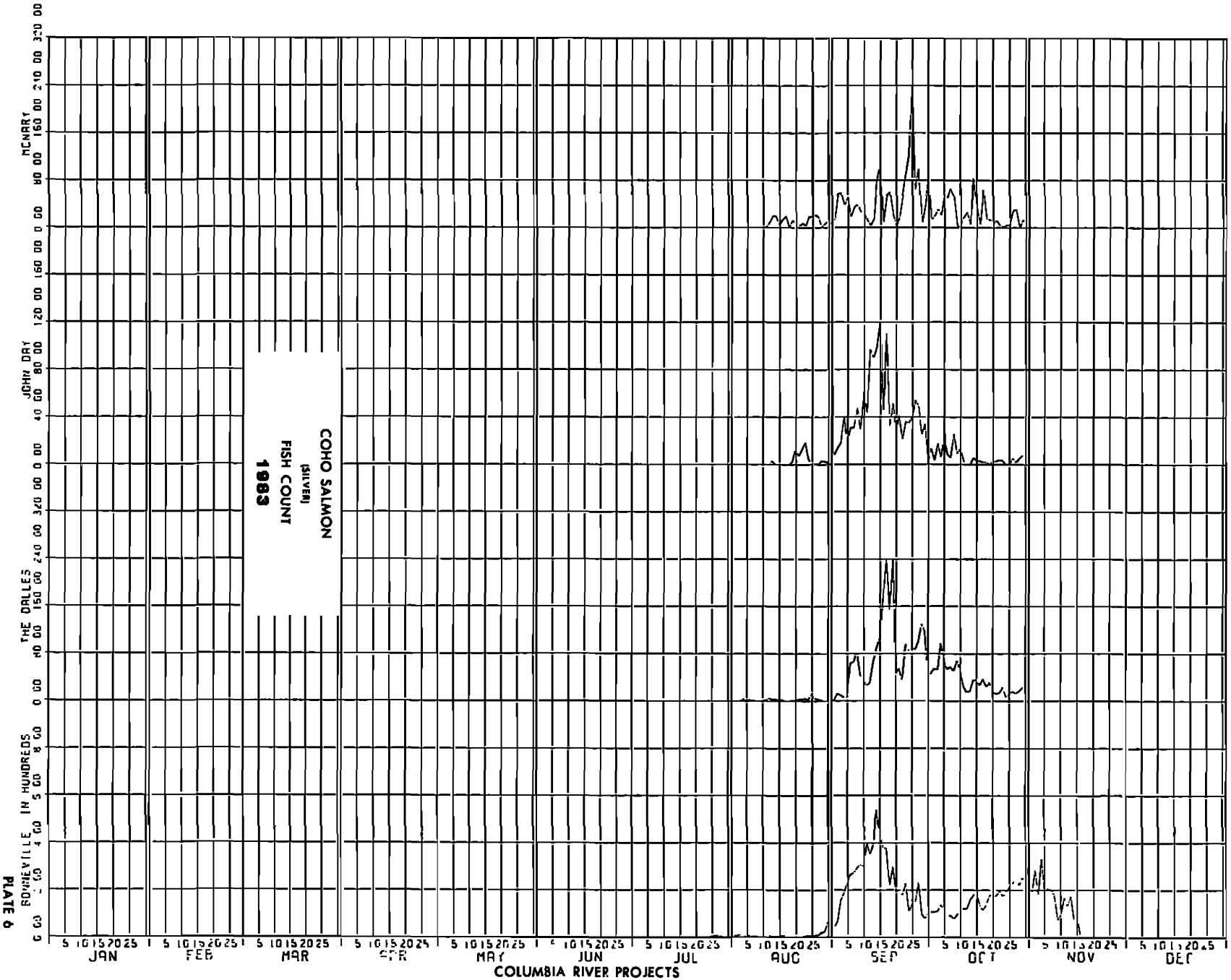
U S ARMY ENGINEER DISTRICT, PORTLAND

PLATE 5



SNAKE RIVER PROJECTS

U S ARMY ENGINEER DISTRICT, WALLA WALLA



COLUMBIA RIVER PROJECTS

U.S. ARMY ENGINEER DISTRICT PORTLAND

PLATE 6

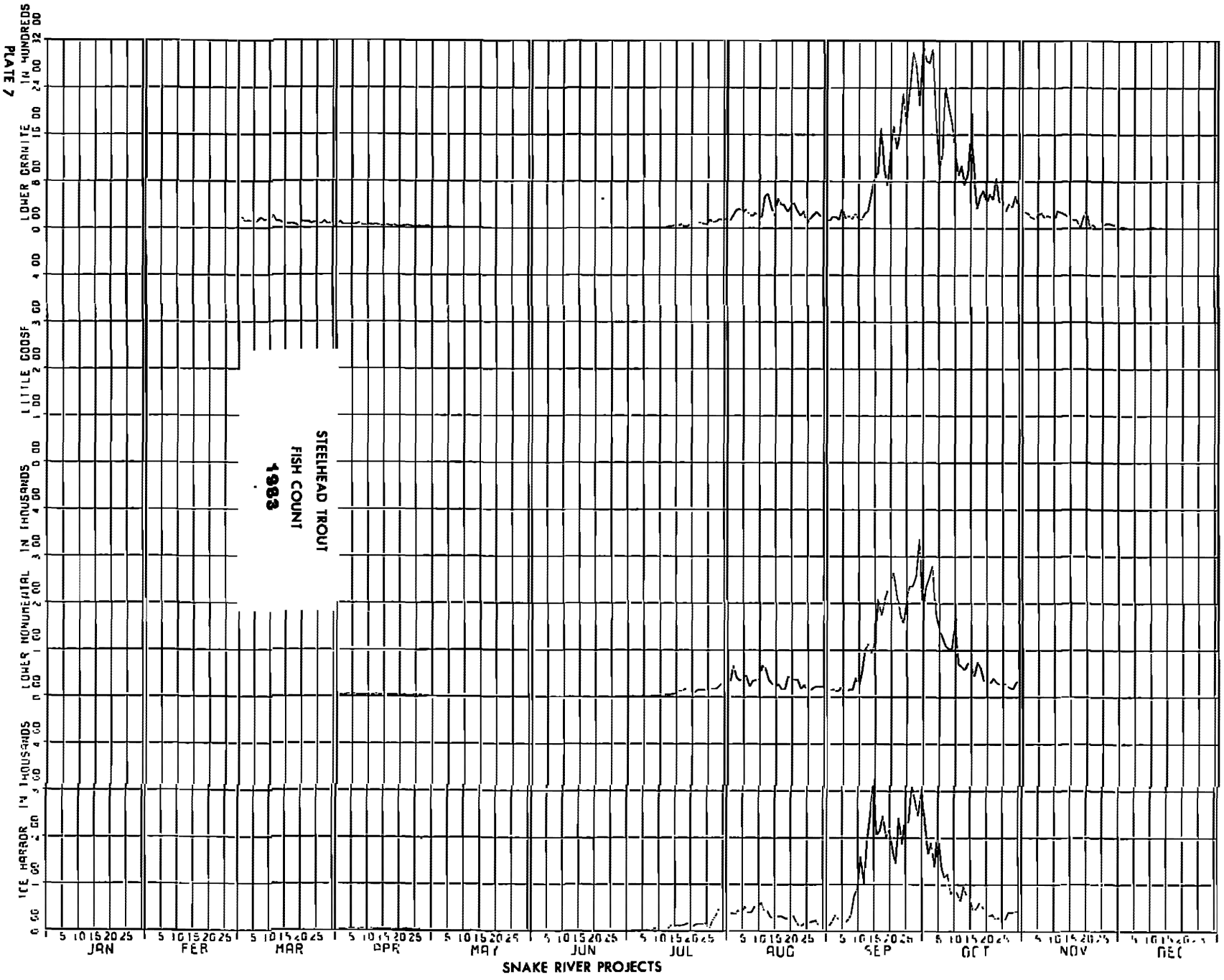


PLATE 7
ICE HARBOR IN THOUSANDS
LOWER MONUMENTAL IN THOUSANDS
LITTLE GOOSE IN HUNDREDS
LOWER GRANITE IN HUNDREDS
STEELHEAD TROUT
FISH COUNT
1983
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
SNAKE RIVER PROJECTS
U.S. ARMY ENGINEER DISTRICT, WALLA WALLA

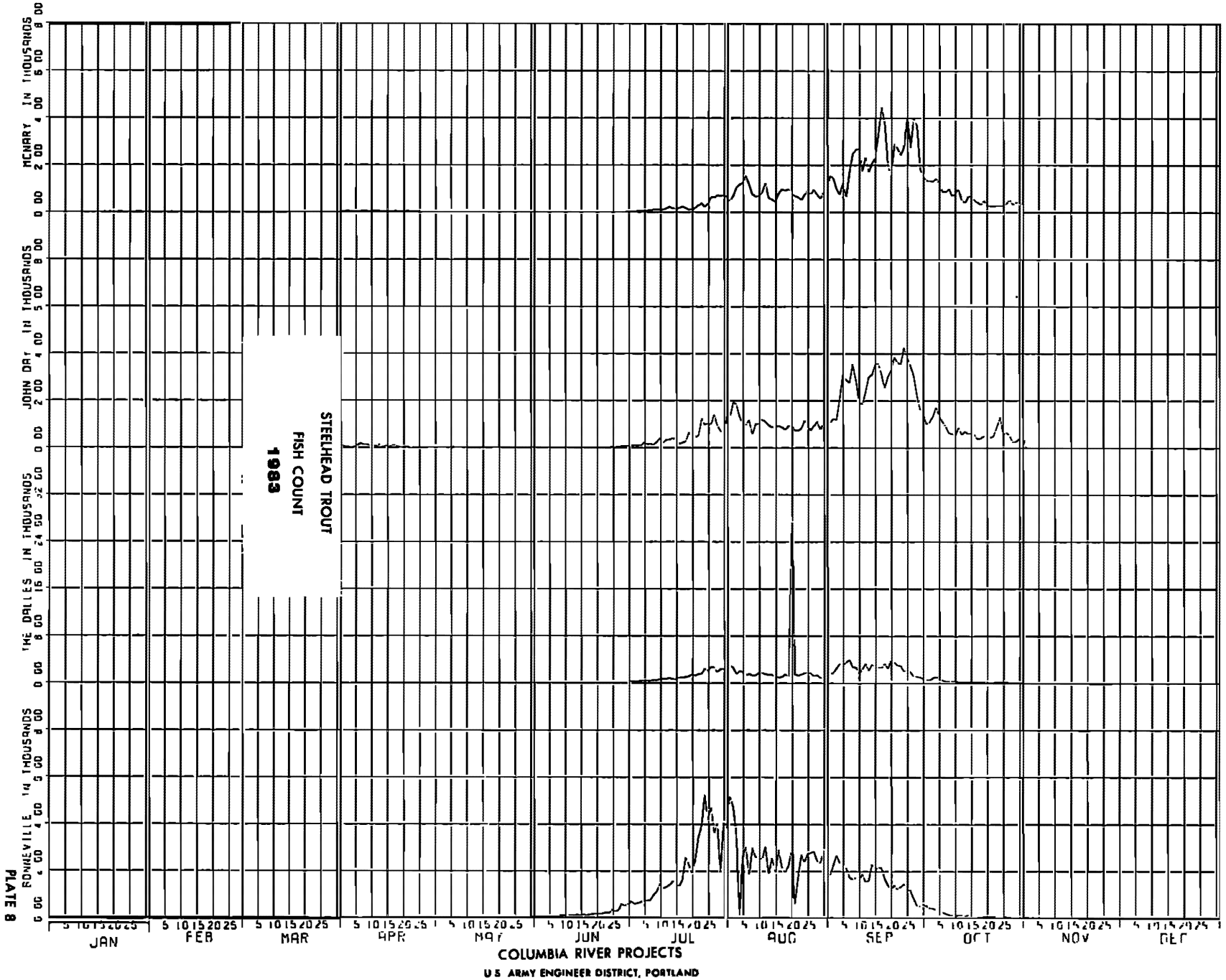


PLATE 8

COLUMBIA RIVER PROJECTS

U.S. ARMY ENGINEER DISTRICT, PORTLAND

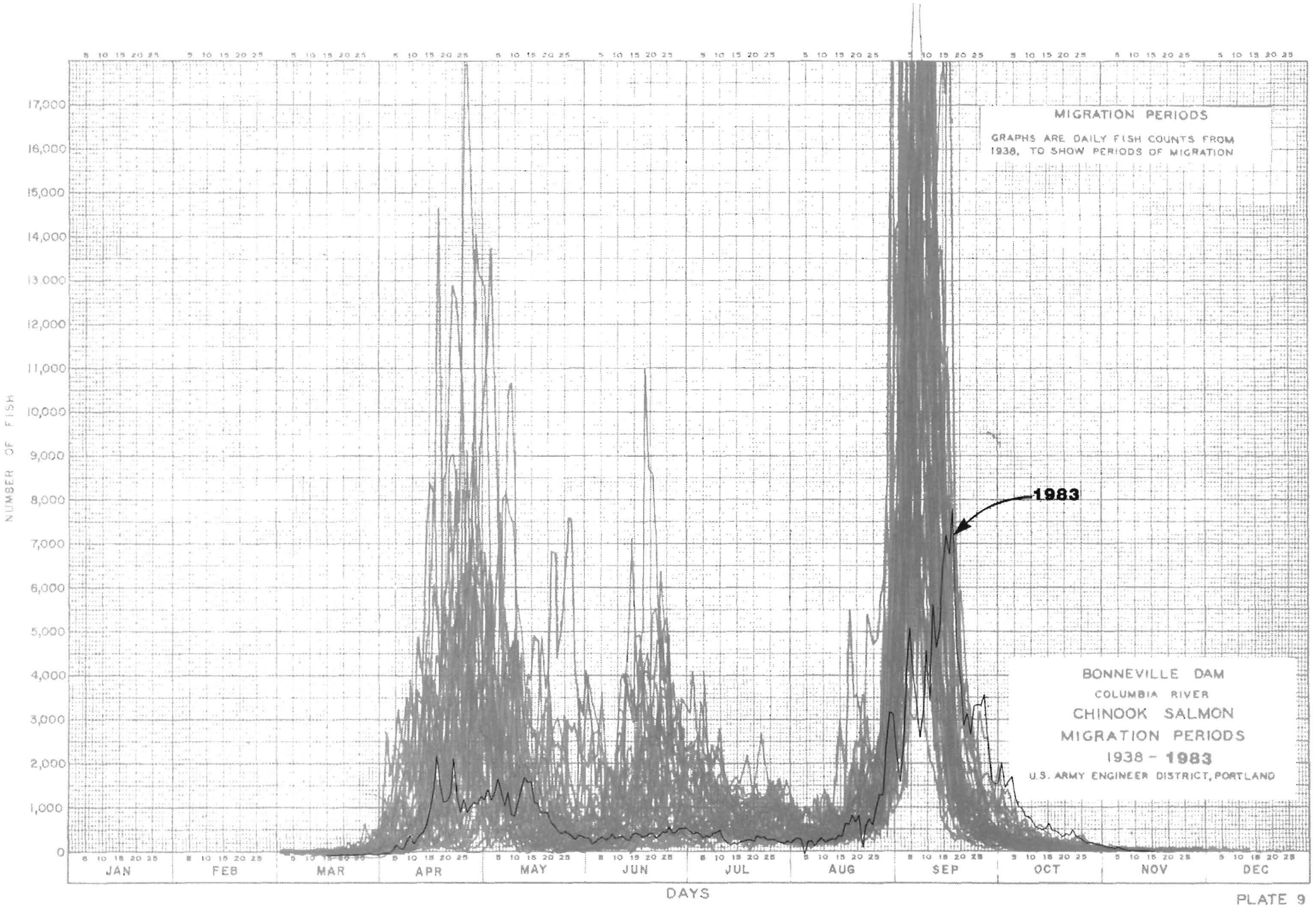

MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION
1983
BONNEVILLE DAM
COLUMBIA RIVER
CHINOOK SALMON
MIGRATION PERIODS
1938 - 1983
U.S. ARMY ENGINEER DISTRICT, PORTLAND
NUMBER OF FISH
17,000
16,000
15,000
14,000
13,000
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS

PLATE 9

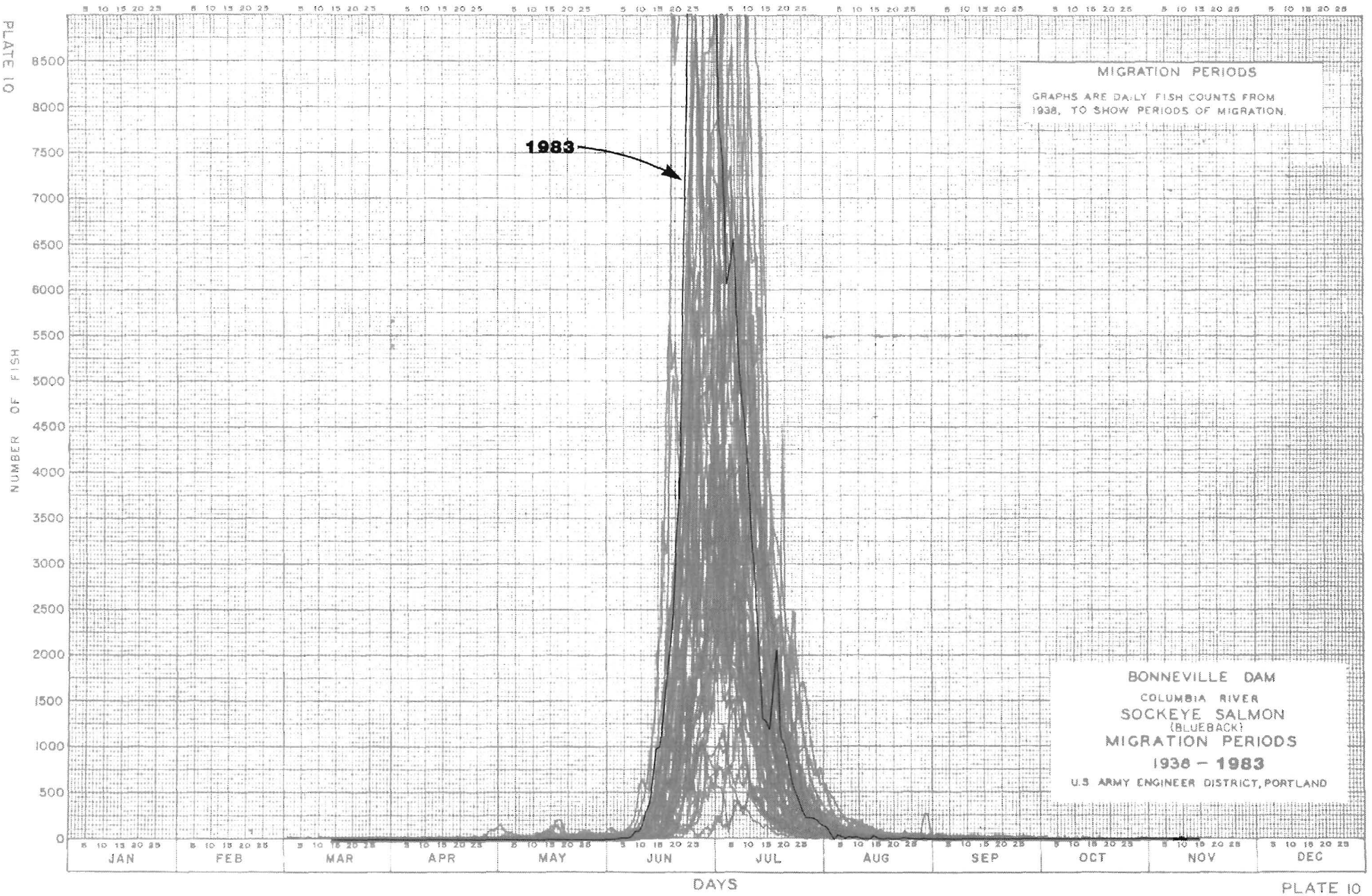


PLATE 10
NUMBER OF FISH
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1983
MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION.
BONNEVILLE DAM
COLUMBIA RIVER
SOCKEYE SALMON
(BLUEBACK)
MIGRATION PERIODS
1938 – 1983
U.S. ARMY ENGINEER DISTRICT, PORTLAND
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS

PLATE 10

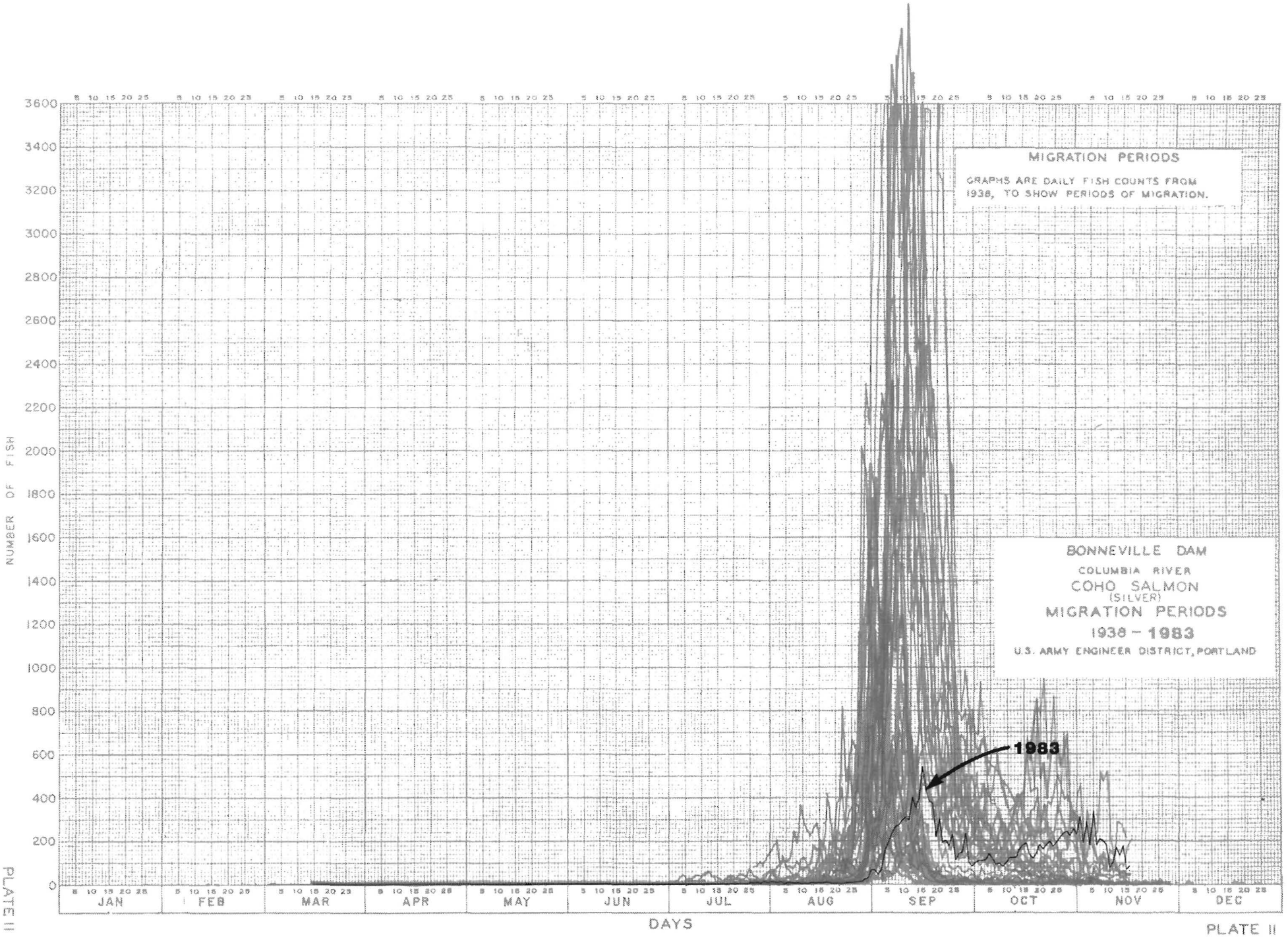


PLATE II

PLATE II

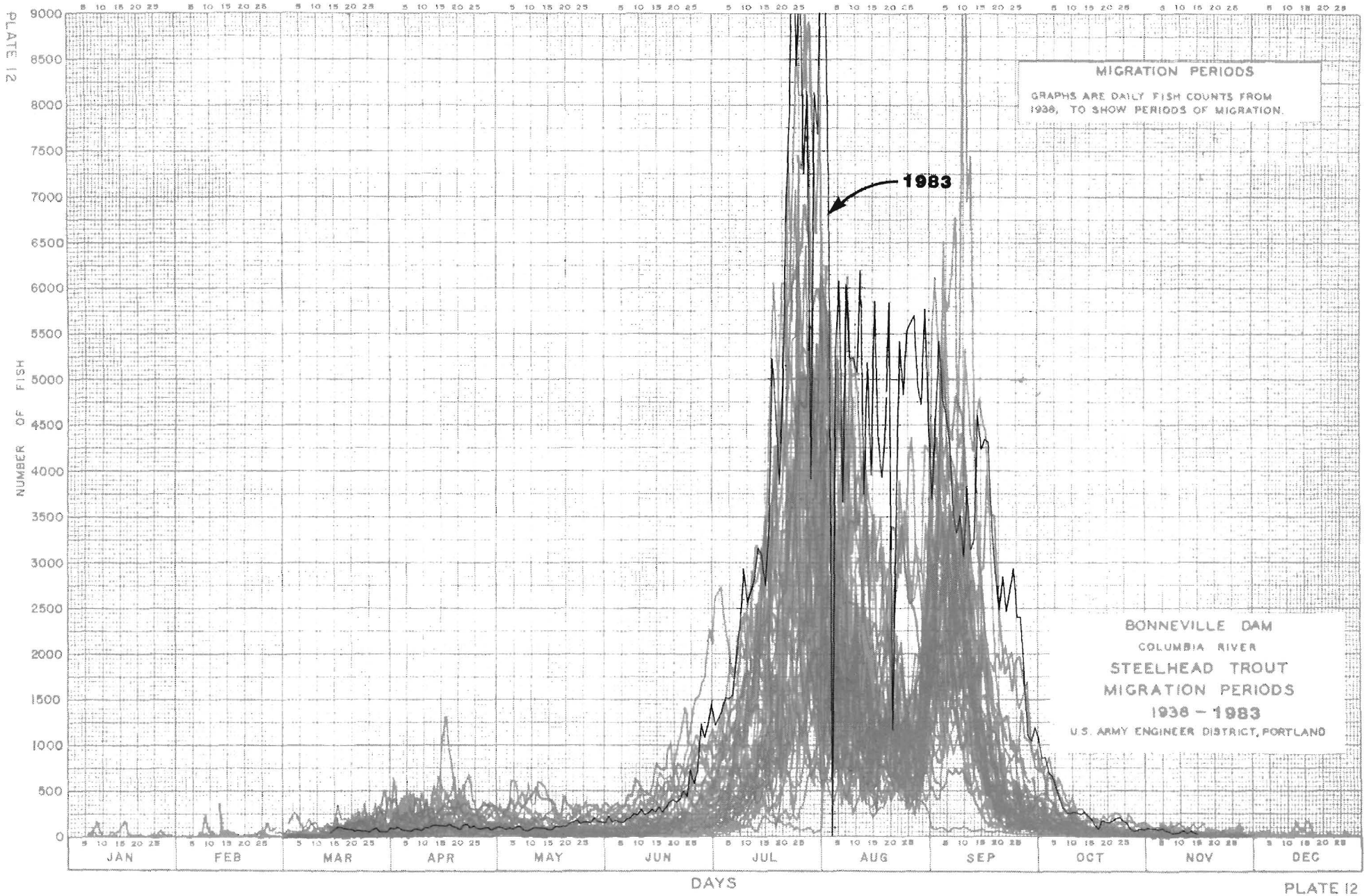


PLATE 12
NUMBER OF FISH
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
MIGRATION PERIODS
GRAPHS ARE DAILY FISH COUNTS FROM 1938, TO SHOW PERIODS OF MIGRATION.
1983
BONNEVILLE DAM
COLUMBIA RIVER
STEELHEAD TROUT
MIGRATION PERIODS
1938 – 1983
U.S. ARMY ENGINEER DISTRICT, PORTLAND
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
DAYS

PLATE 12

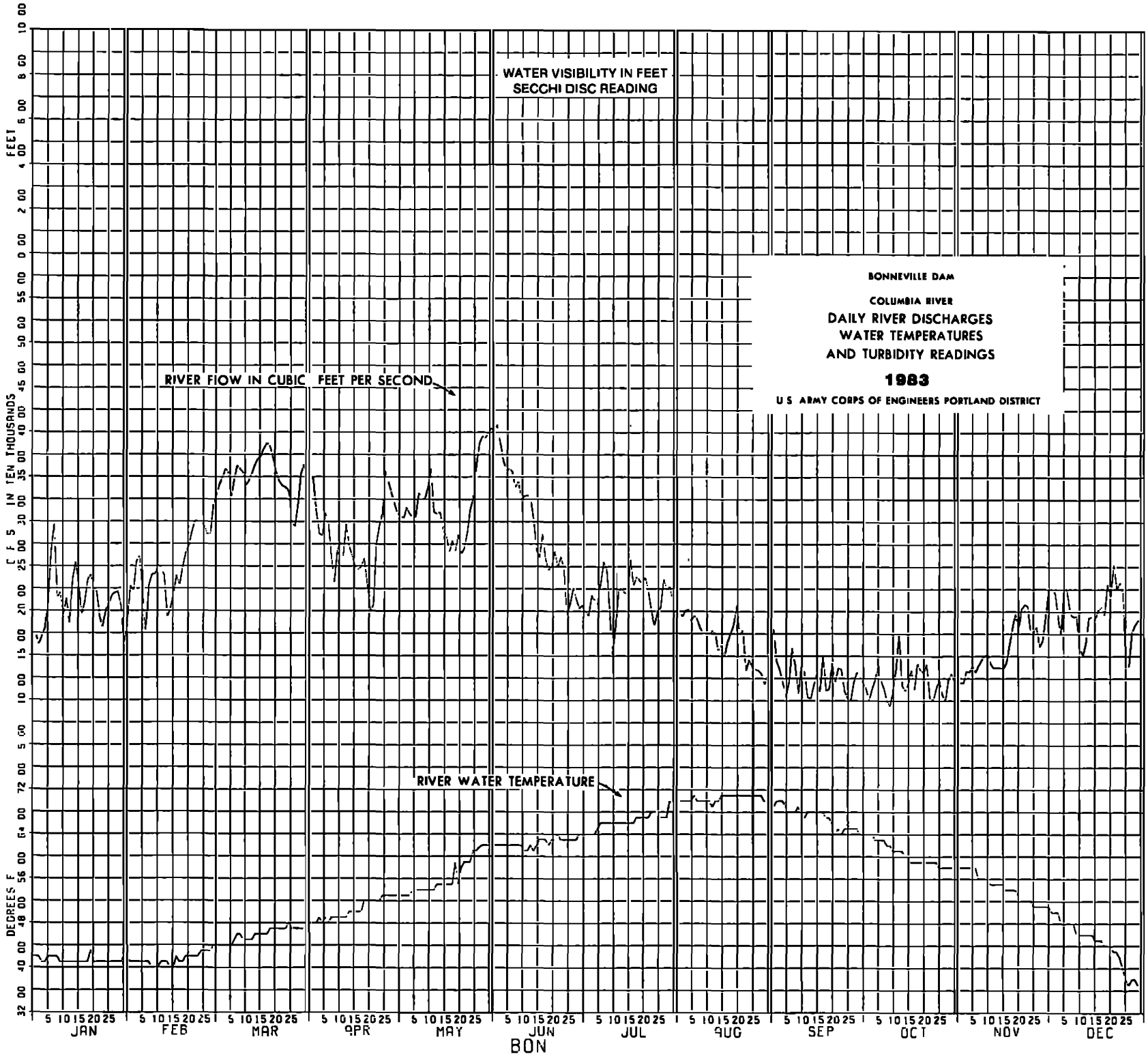

BONNEVILLE DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
BON

PLATE 13

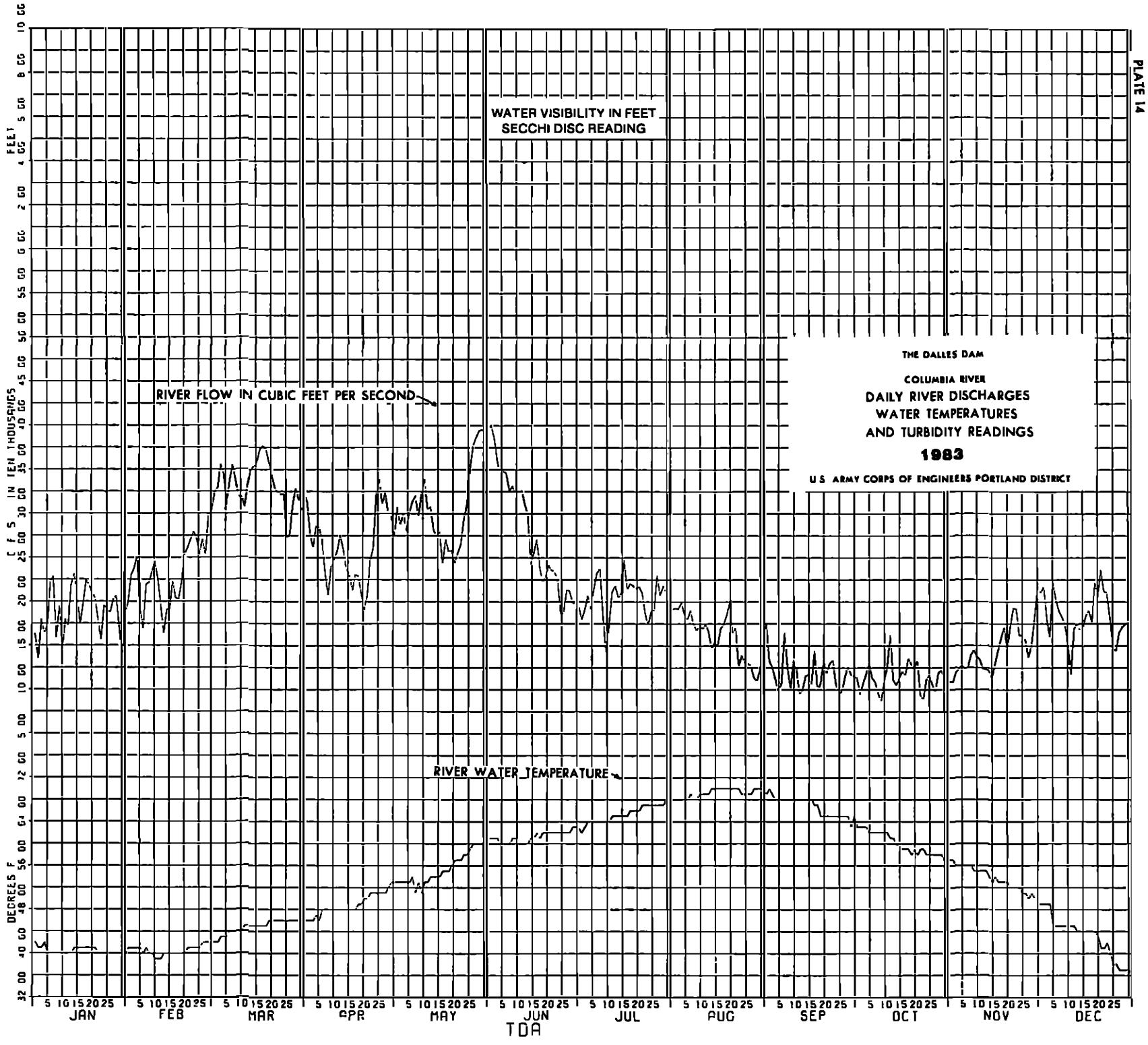


PLATE 14
THE DALLES DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
TDA

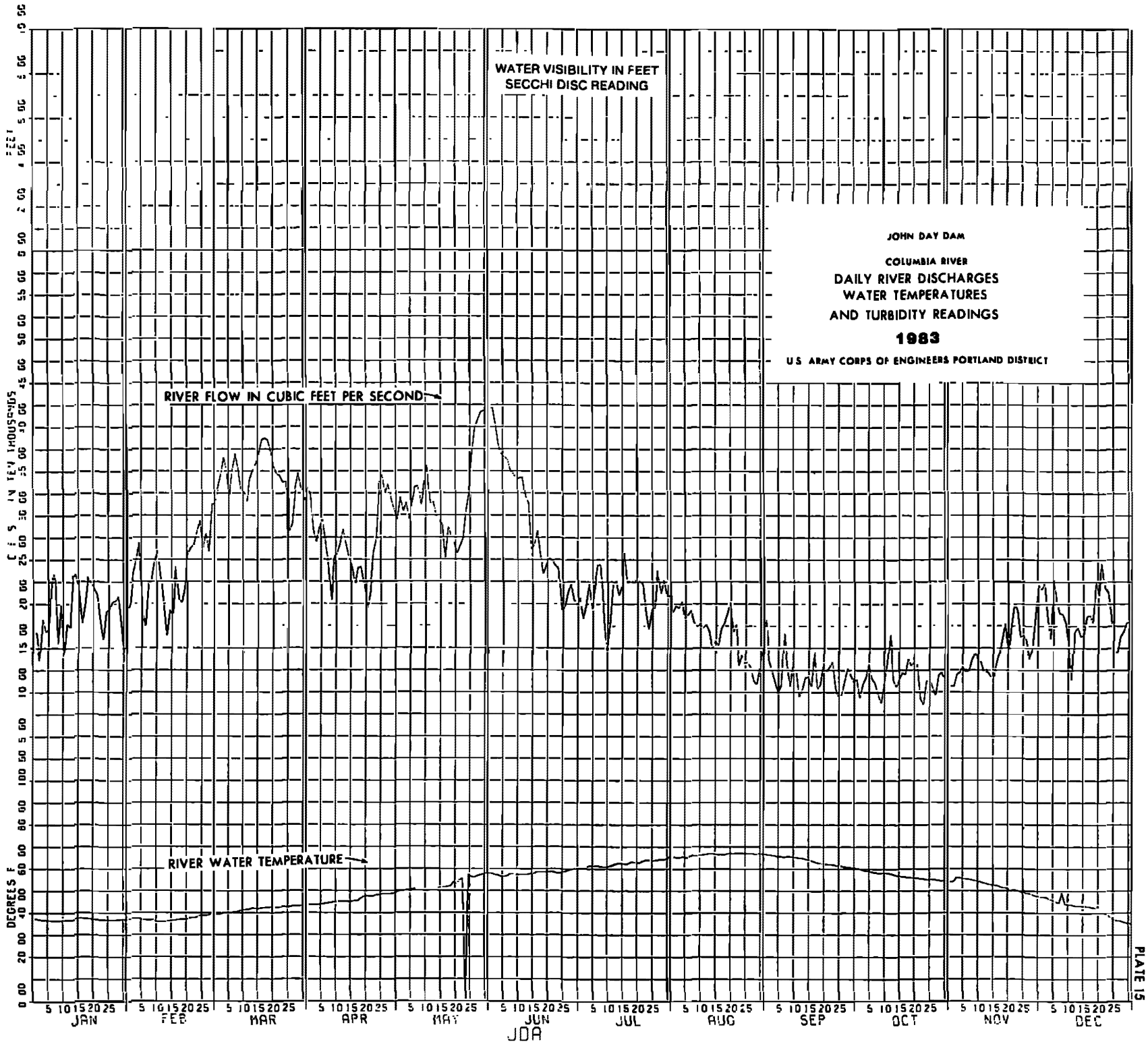
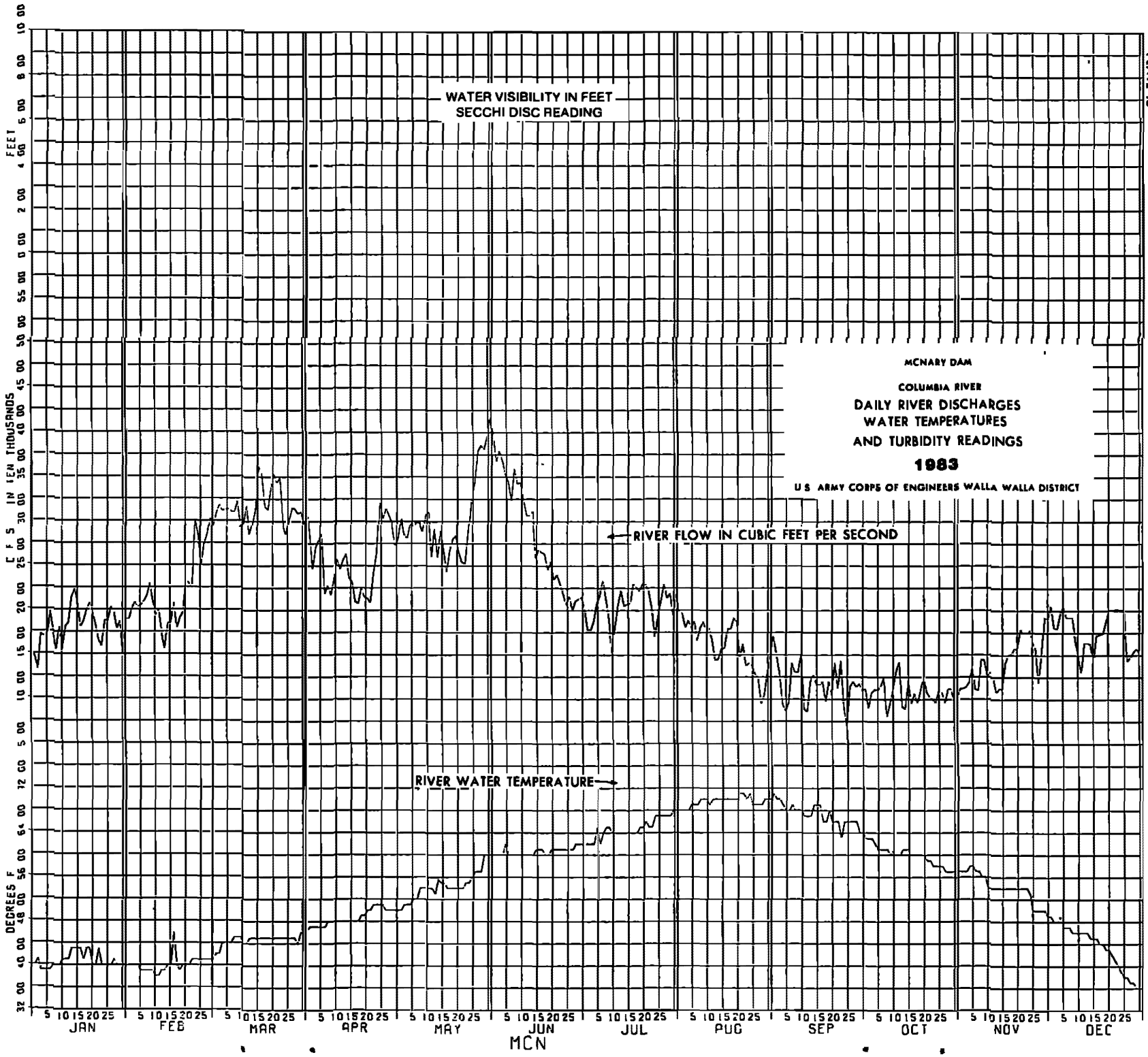

JOHN DAY DAM
COLUMBIA RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U.S. ARMY CORPS OF ENGINEERS PORTLAND DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
JDA

PLATE 15



MCNARY DAM

COLUMBIA RIVER

DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS

1983

U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT

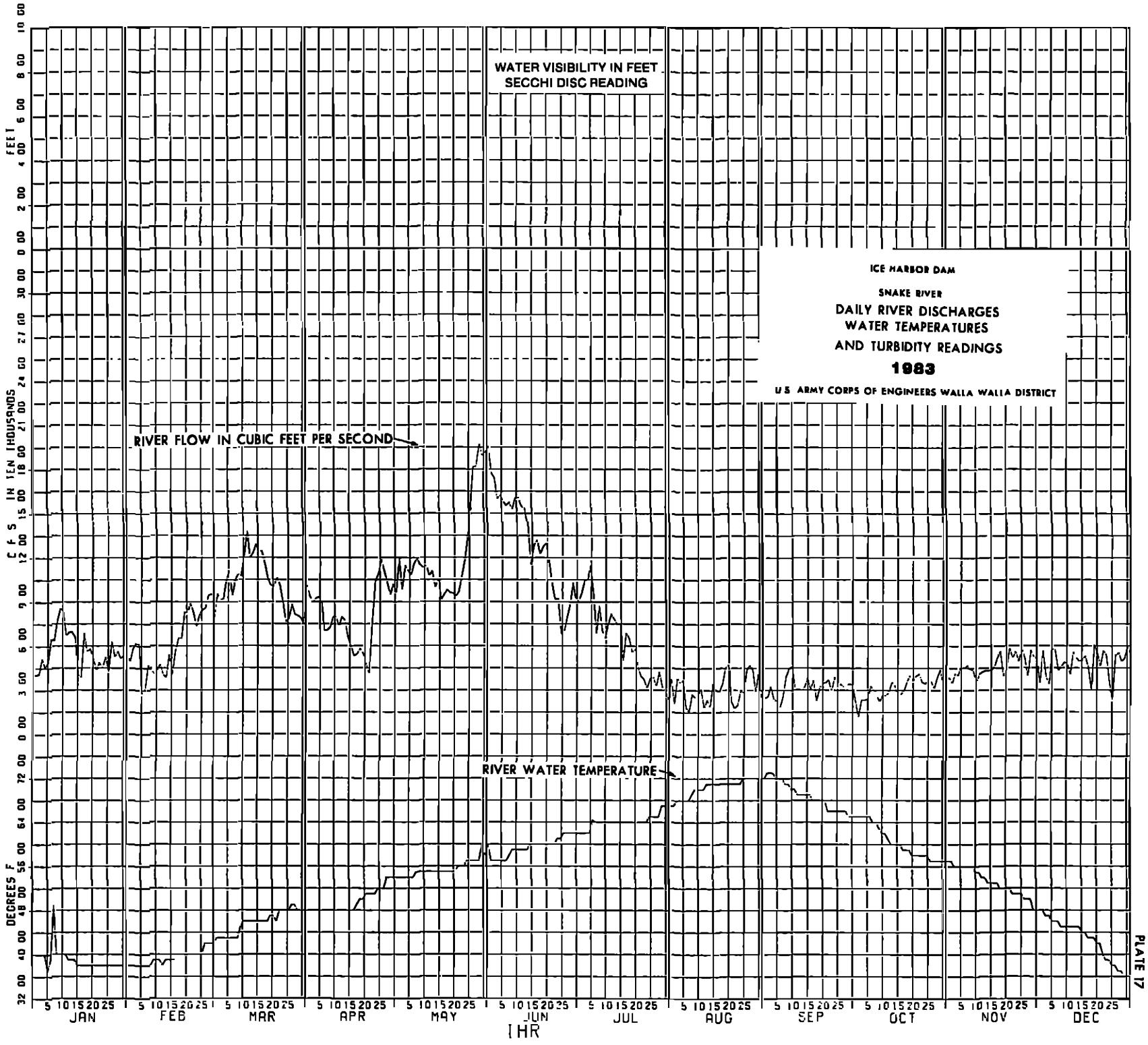

ICE HARBOR DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
THR

PLATE 17

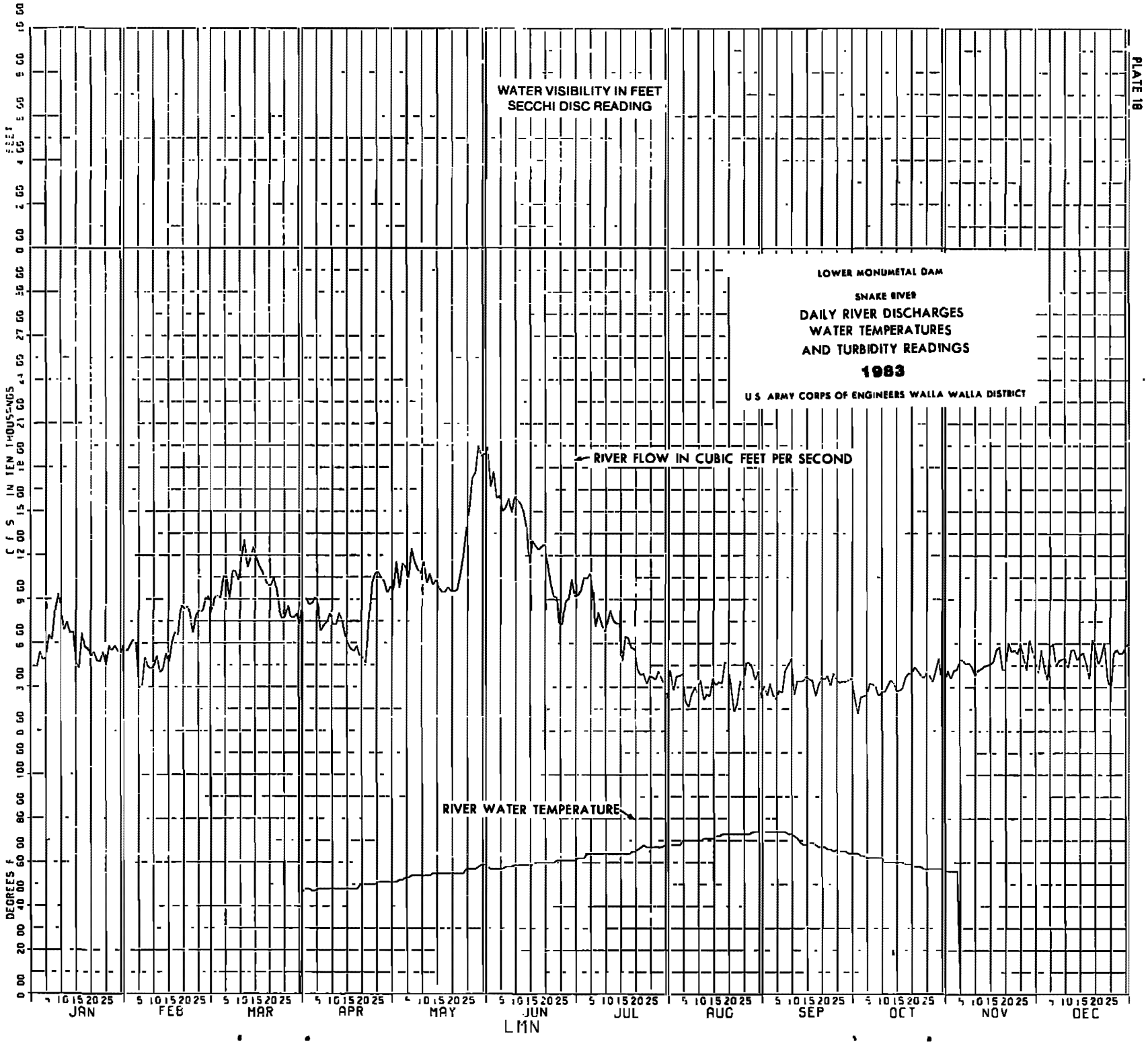


PLATE 18
WATER VISIBILITY IN FEET
SECCHI DISC READING
LOWER MONUMETAL DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
C F S IN TEN THOUSANDS
DEGREES F
FEET
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LMN

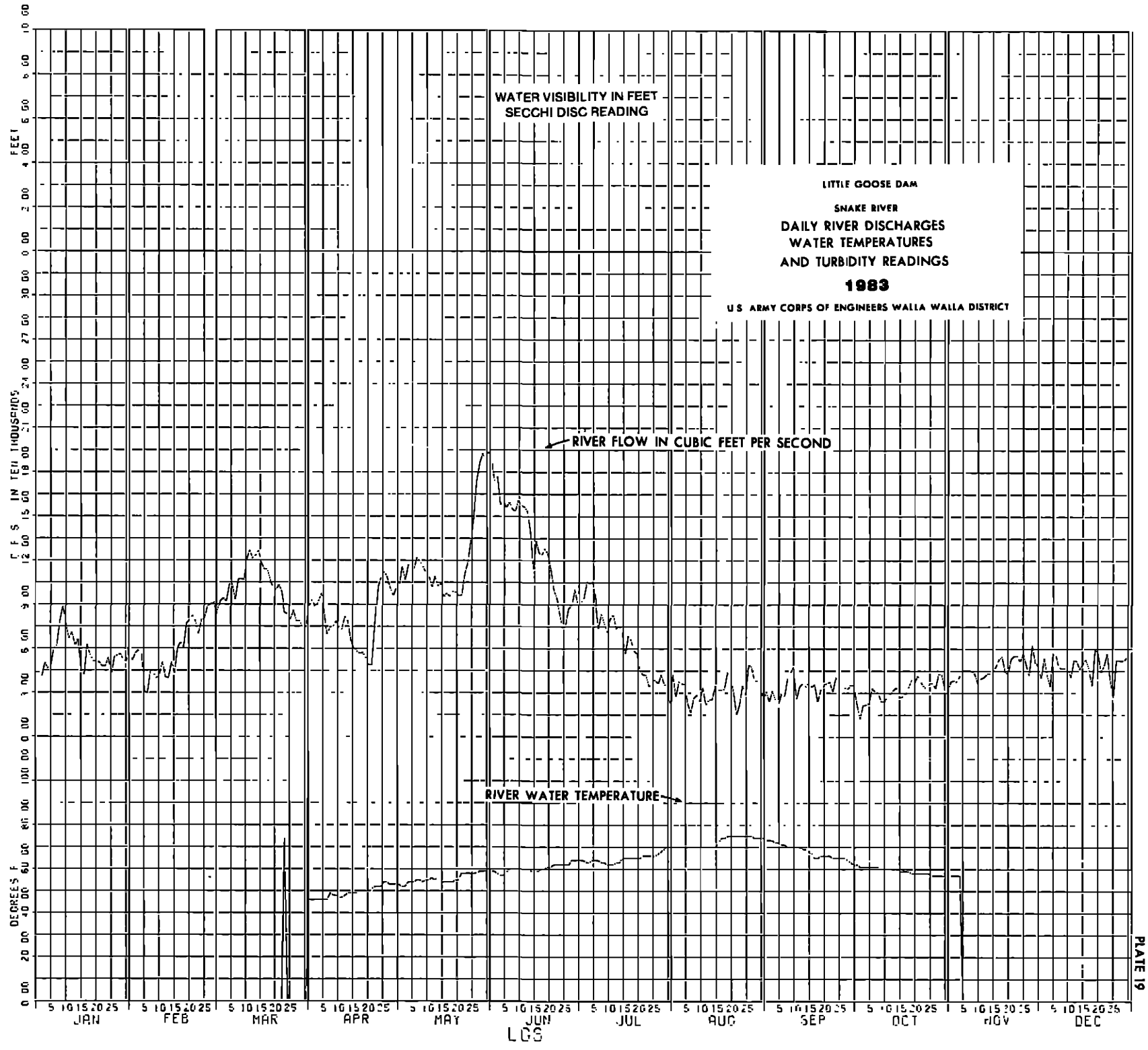

LITTLE GOOSE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPERATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LGS

PLATE 19

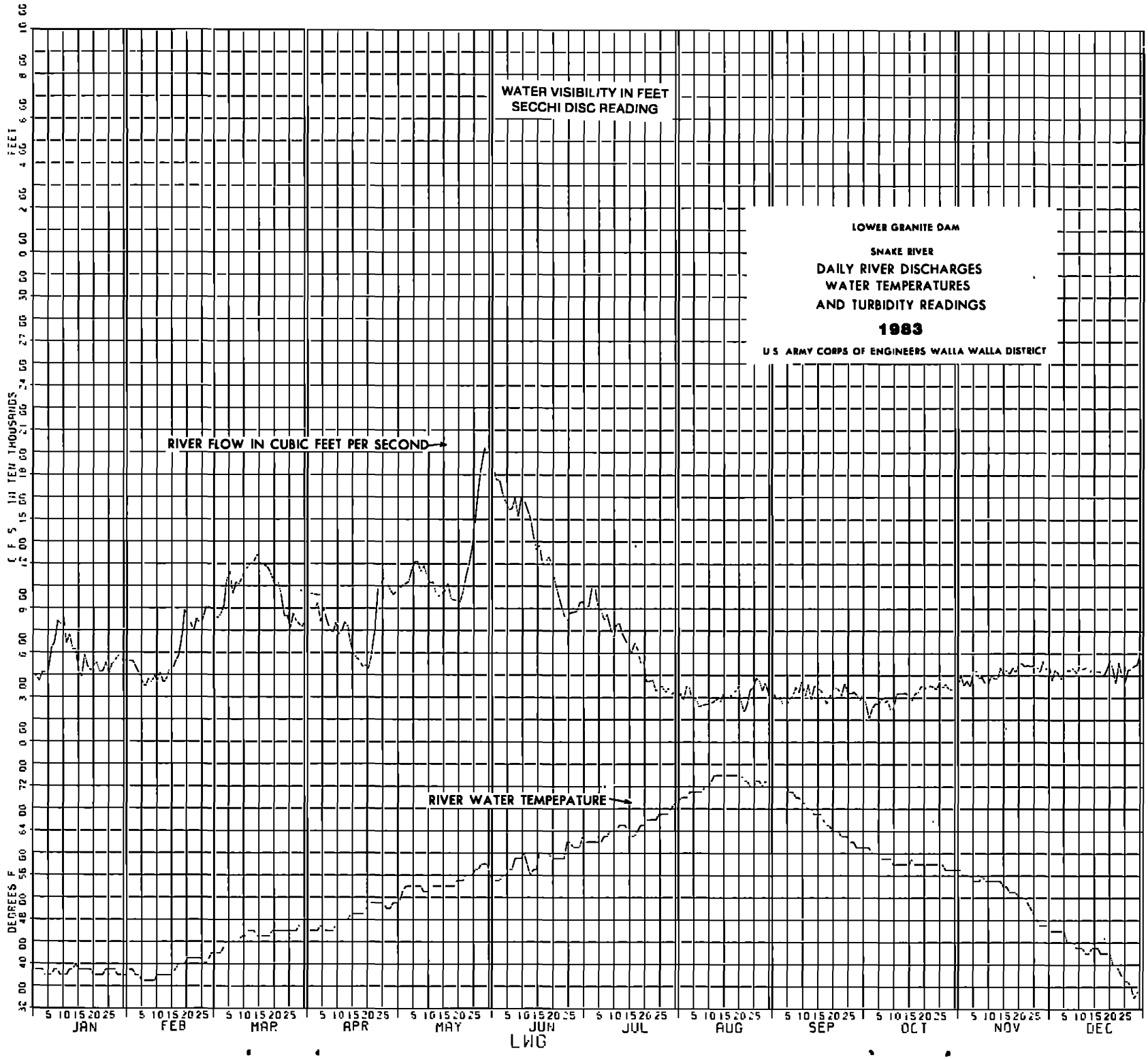
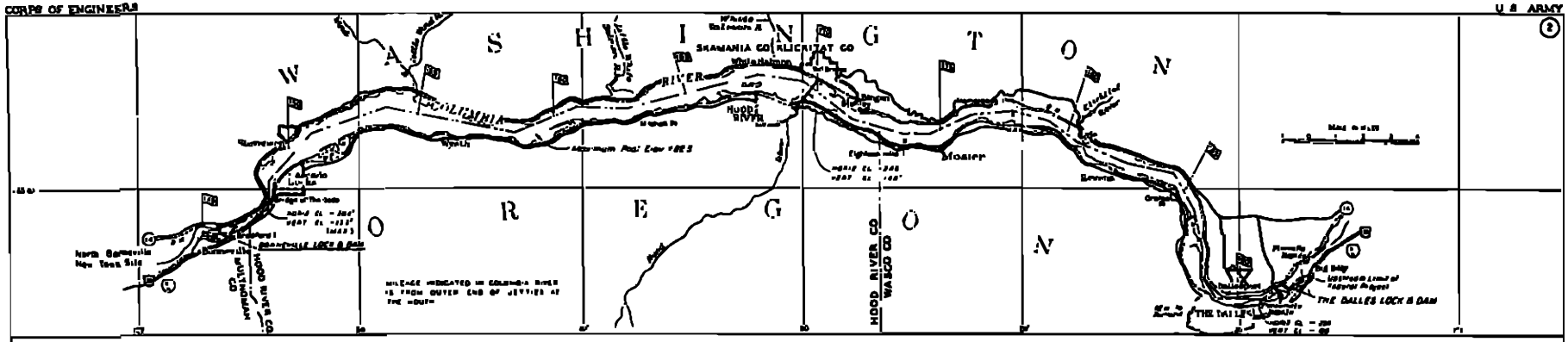
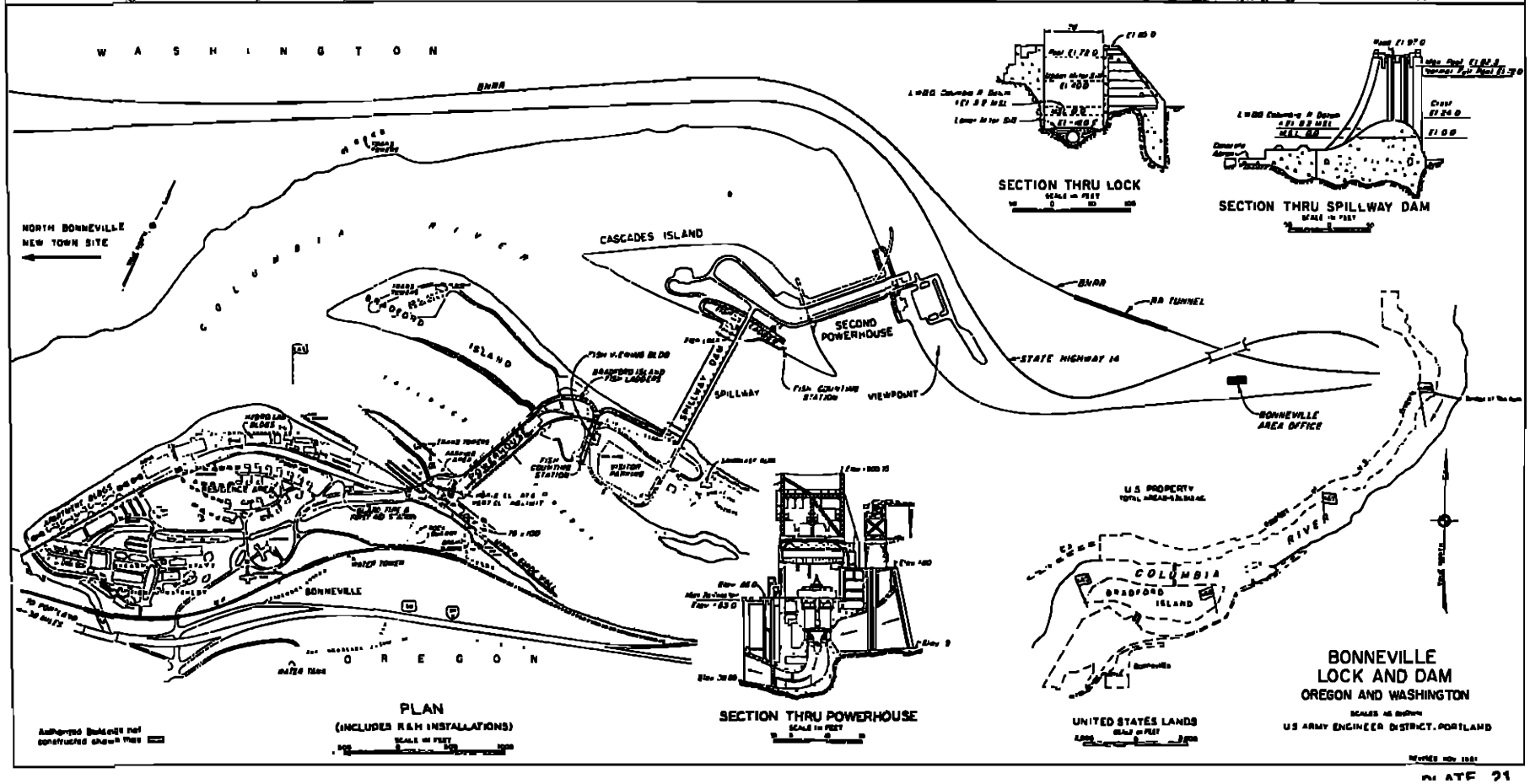
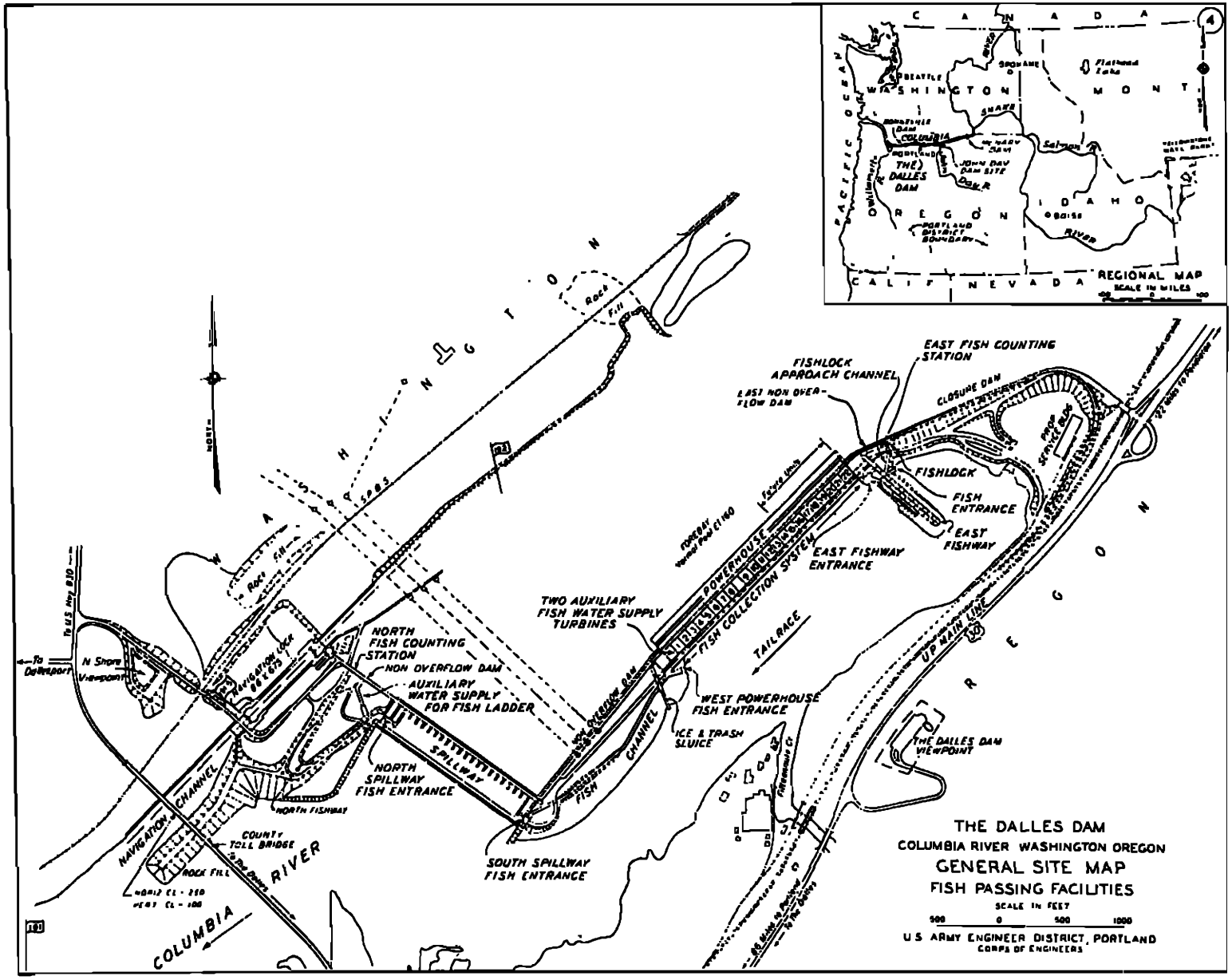
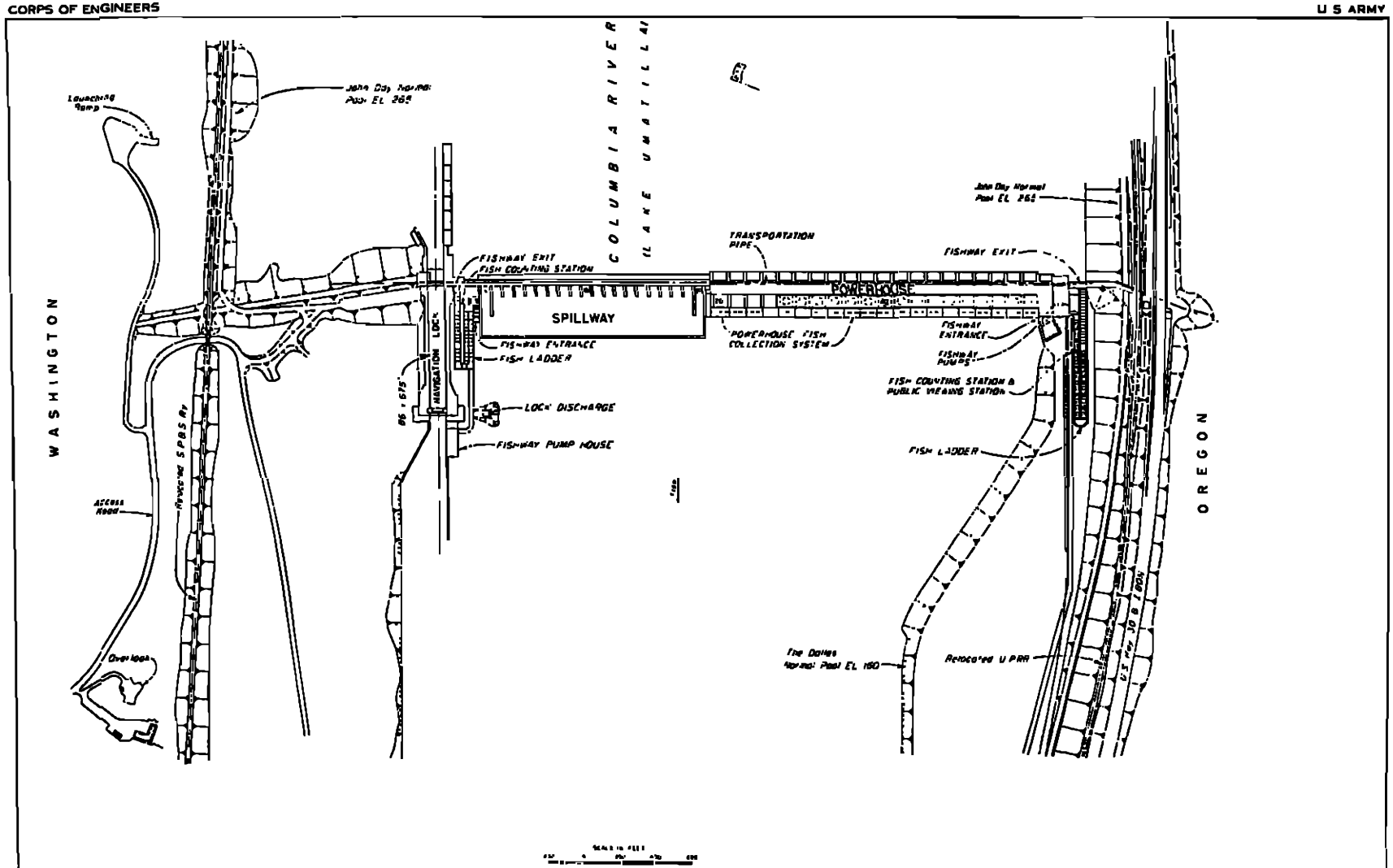

LOWER GRANITE DAM
SNAKE RIVER
DAILY RIVER DISCHARGES
WATER TEMPERATURES
AND TURBIDITY READINGS
1983
U S ARMY CORPS OF ENGINEERS WALLA WALLA DISTRICT
WATER VISIBILITY IN FEET
SECCHI DISC READING
RIVER FLOW IN CUBIC FEET PER SECOND
RIVER WATER TEMPEPATURE
FEET
C F S IN TEN THOUSANDS
DEGREES F
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LWG

PLATE 20

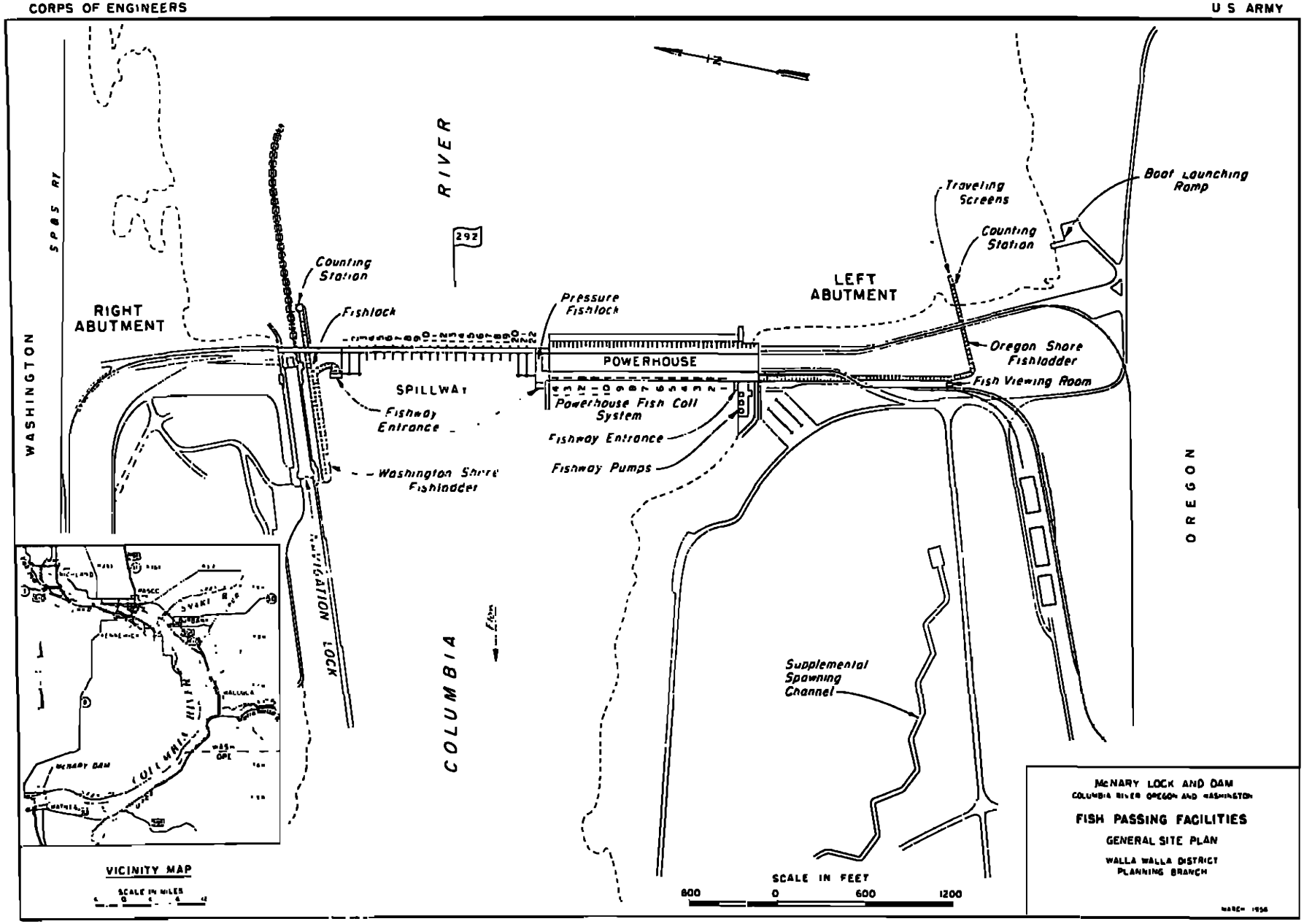

WASHINGTON
OREGON
COLUMBIA RIVER
SKAMANIA CO
KLICKITAT CO
HOOD RIVER
Mosier
HOOD RIVER CO
WASCO CO
BONNEVILLE LOCK & DAM
THE DALLES LOCK & DAM
THE DALLES
North Bonneville New Town Site
DISTANCE INDICATED ON COLUMBIA RIVER IS FROM OUTER END OF JETTIES AT THE MOUTH

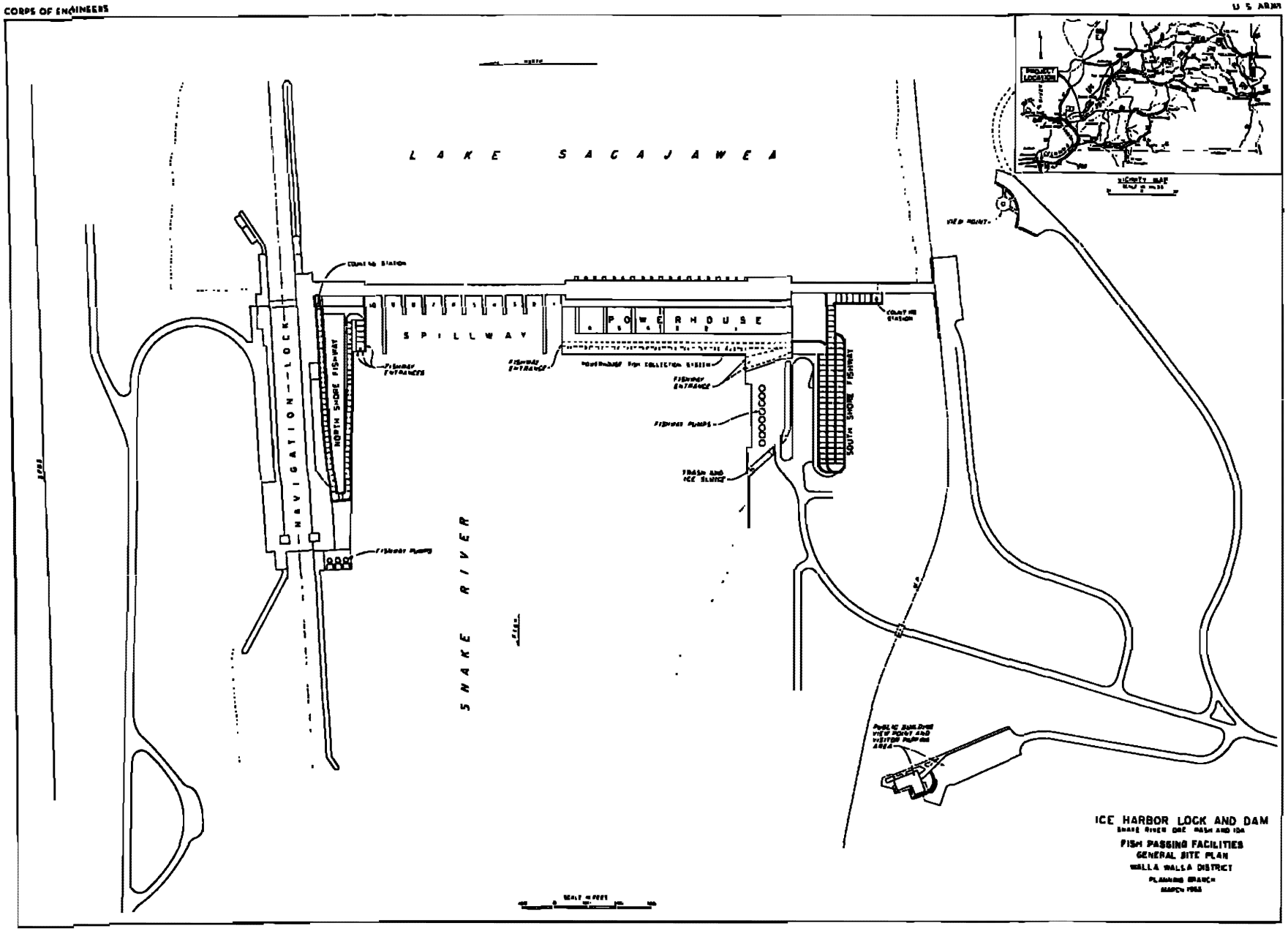

WASHINGTON
OREGON
COLUMBIA RIVER
NORTH BONNEVILLE NEW TOWN SITE
CASCADES ISLAND
BRIDGE
RR TUNNEL
STATE HIGHWAY 14
SECOND POWERHOUSE
SPILLWAY DAM
SPILLWAY
FISH COUNTING STATION
VIEWPOINT
BONNEVILLE AREA OFFICE
BRADFORD ISLAND
FISH VIEWING BLDG
BRADFORD ISLAND FISH LADDER
BONNEVILLE
TO PORTLAND
U.S. PROPERTY
COLUMBIA RIVER
BRADFORD ISLAND
SECTION THRU LOCK
SECTION THRU SPILLWAY DAM
PLAN
(INCLUDES R&M INSTALLATIONS)
SECTION THRU POWERHOUSE
UNITED STATES LANDS
BONNEVILLE
LOCK AND DAM
OREGON AND WASHINGTON
U.S. ARMY ENGINEER DISTRICT, PORTLAND

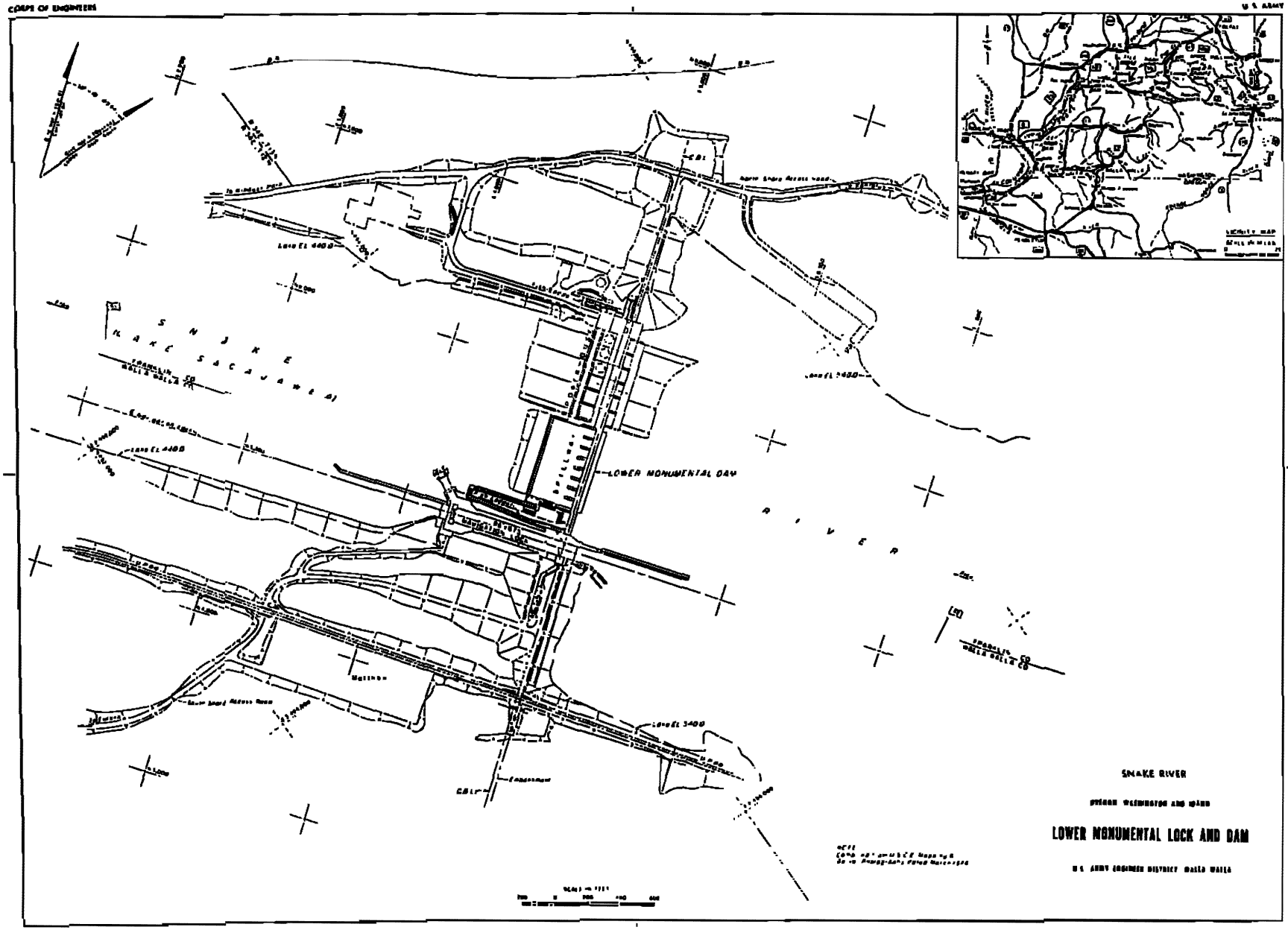

THE DALLES DAM
COLUMBIA RIVER WASHINGTON OREGON
GENERAL SITE MAP
FISH PASSING FACILITIES
SCALE IN FEET
500 0 500 1000
U S ARMY ENGINEER DISTRICT, PORTLAND
CORPS OF ENGINEERS
REGIONAL MAP
SCALE IN MILES
CANADA
WASHINGTON
OREGON
IDAHO
MONT
CALIF
NEVADA
PACIFIC OCEAN
SEATTLE
SPOKANE
PORTLAND
THE DALLES DAM
JOHN DAY DAM SITE
PORTLAND DISTRICT BOUNDARY
COLUMBIA
SNAKE
Salmon R.
Deschutes R.
Willamette R.
BOISE
River
NORTH
EAST FISH COUNTING STATION
FISHLOCK APPROACH CHANNEL
EAST NON OVER-FLOW DAM
CLOSURE DAM
PROP SPILLWAY
FISHLOCK
FISH ENTRANCE
EAST FISHWAY
EAST FISHWAY ENTRANCE
FOREBAY
POWERHOUSE
FISH COLLECTION SYSTEM
TWO AUXILIARY FISH WATER SUPPLY TURBINES
TAILRACE
WEST POWERHOUSE FISH ENTRANCE
ICE & TRASH SLUICE
NON OVERFLOW DAM
CHANNEL
FISH
SPILLWAY
NORTH FISH COUNTING STATION
NON OVERFLOW DAM
AUXILIARY WATER SUPPLY FOR FISH LADDER
NORTH SPILLWAY FISH ENTRANCE
NORTH FISHWAY
SOUTH SPILLWAY FISH ENTRANCE
NAVIGATION LOCK
NAVIGATION CHANNEL
COUNTY TOLL BRIDGE
ROCK FILL
COLUMBIA RIVER
N Shore Viewpoint
To Dallesport
To U.S. Hwy 830
UP MAIN LINE
THE DALLES DAM VIEWPOINT
101
23



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

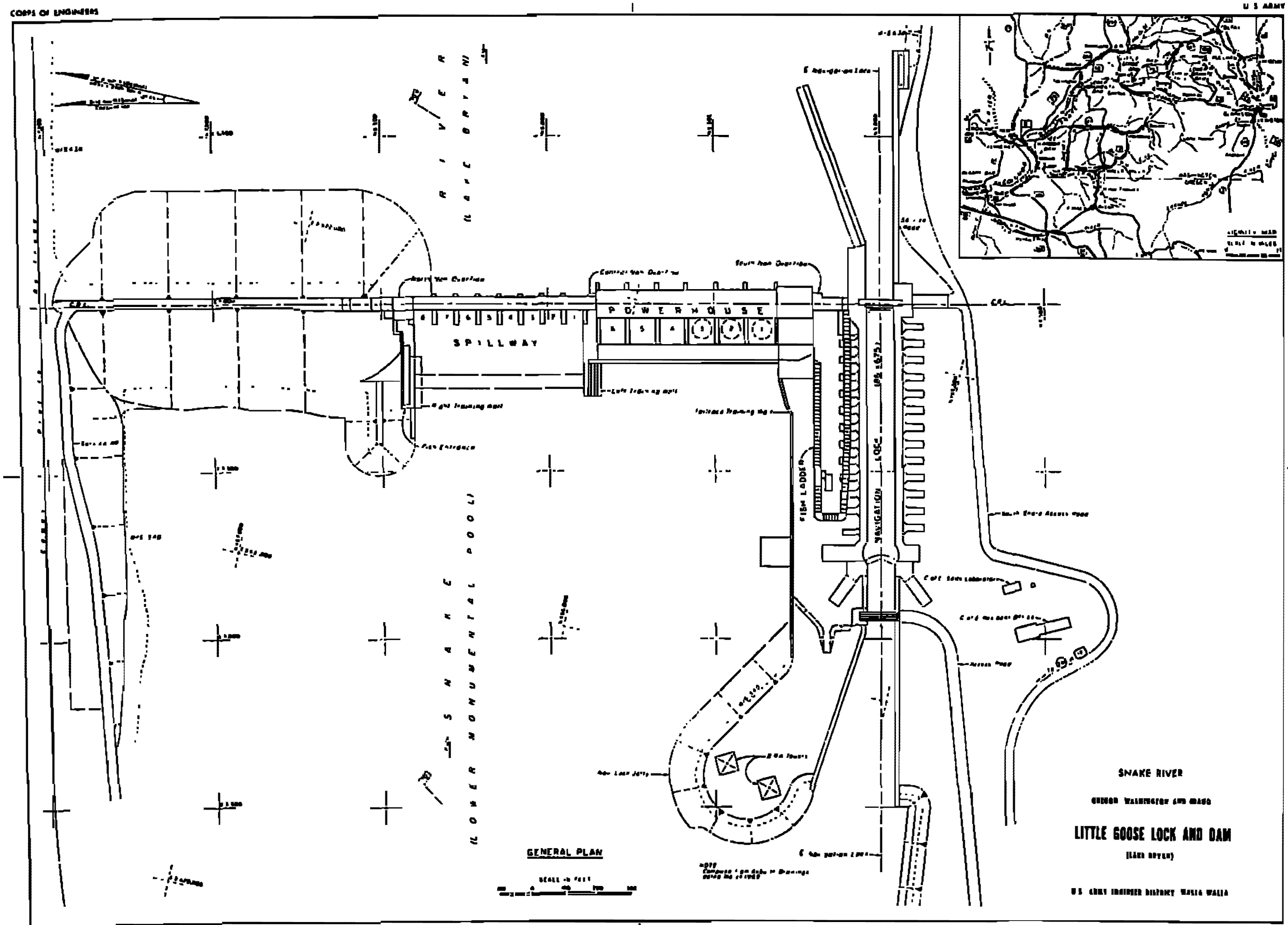

WASHINGTON
OREGON
COLUMBIA RIVER
SPAN RT
RIGHT ABUTMENT
LEFT ABUTMENT
292
Counting Station
Fishlock
Pressure Fishlock
POWERHOUSE
SPILLWAY
Fishway Entrance
Washington Shore Fishladder
Powerhouse Fish Coll System
Fishway Entrance
Fishway Pumps
Traveling Screens
Counting Station
Boat Launching Ramp
Oregon Shore Fishladder
Fish Viewing Room
NAVIGATION LOCK
Supplemental Spawning Channel
VICINITY MAP
SCALE IN MILES
SCALE IN FEET
600 0 600 1200
McNARY LOCK AND DAM
COLUMBIA RIVER OREGON AND WASHINGTON
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH
MARCH 1956


LAKE SACAJAWEA
SPILLWAY
POWERHOUSE
NAVIGATION LOCK
NORTH SHORE FISHWAY
SOUTH SHORE FISHWAY
SNAKE RIVER
COUNTING STATION
FISHWAY ENTRANCES
FISHWAY ENTRANCE
FISHWAY PUMPS
TRASH AND ICE SLUICE
VIEW POINT
PROJECT LOCATION
VICINITY MAP
ICE HARBOR LOCK AND DAM
FISH PASSING FACILITIES
GENERAL SITE PLAN
WALLA WALLA DISTRICT
PLANNING BRANCH
MARCH 1965


SNAKE RIVER
OREGON WASHINGTON AND IDAHO
LOWER MONUMENTAL LOCK AND DAM
U.S. ARMY ENGINEER DISTRICT WALLA WALLA
LOWER MONUMENTAL DAM
S N A K E
R I V E R
VICINITY MAP

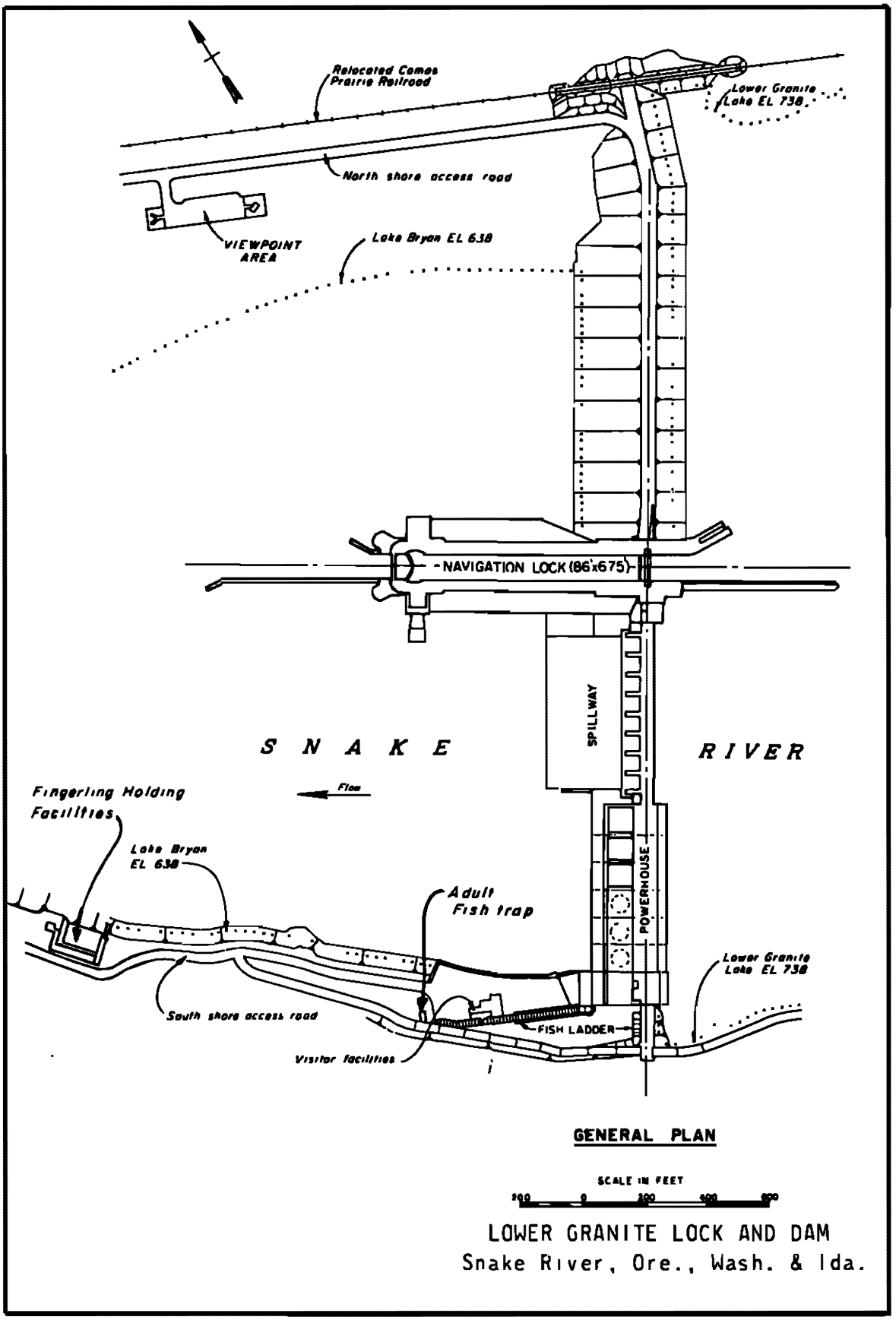
CORPS OF ENGINEERS

U S ARMY



VOL NO

PLATE 27



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

GDG-1-0-1/14