



US Army Corps
of Engineers®
Portland District
Walla Walla District

Annual Fish Passage Report 2019



Columbia and Snake River Projects

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2019

**ANNUAL FISH PASSAGE REPORT
COLUMBIA AND SNAKE RIVERS**

for

**SALMON, STEELHEAD, SHAD,
AND LAMPREY**

***BONNEVILLE DAM
THE DALLES DAM
JOHN DAY DAM
McNARY DAM
ICE HARBOR DAM
LOWER MONUMENTAL DAM
LITTLE GOOSE DAM
LOWER GRANITE DAM
PRIEST RAPIDS DAM
ROCK ISLAND DAM
ROCKY REACH DAM
WELLS DAM***

**NORTHWESTERN DIVISION
U.S. ARMY CORPS OF ENGINEERS**

**Prepared By:
U.S. Army Engineer Districts
Portland and Walla Walla**

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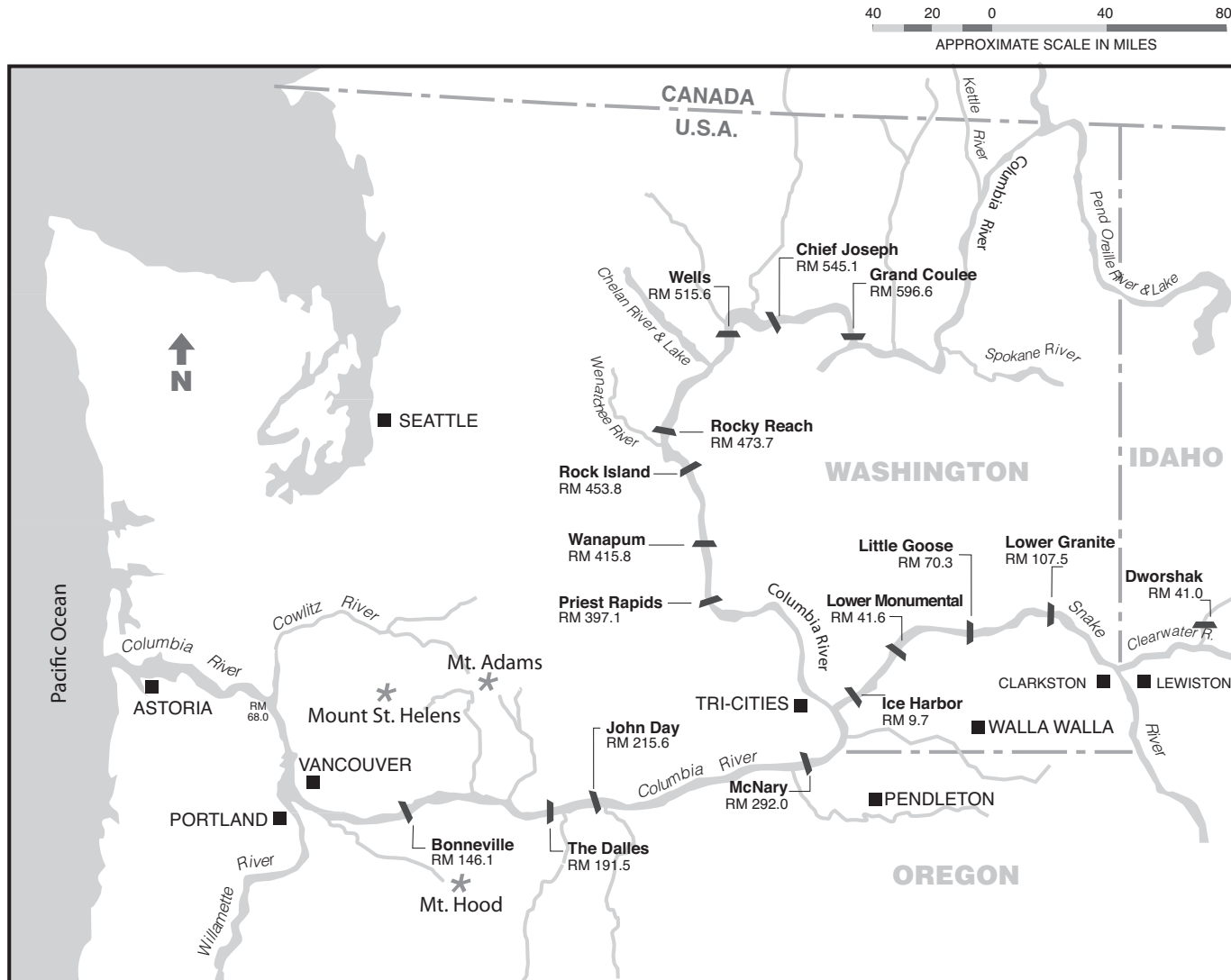


TABLE 1

FISH ESCAPEMENT AT MAIN STEM DAMS ON THE COLUMBIA AND SNAKE RIVERS: 2015-2019

SPECIES	BONNEVILLE	THE DALLES	JOHN DAY	M McNARY	ICE HARBOR	LOWER MONUMENTAL	LITTLE GOOSE	LOWER GRANITE
2015								
CHINOOK*	1,449,612	1,068,378	891,578	822,516	219,408	213,045	202,671	203,258
Spring*	233,562	206,423	177,529	164,918	122,207	120,208	113,677	113,252
Summer*	179,465	139,373	119,756	105,010	24,215	22,599	19,958	19,180
Fall*	1,036,585	722,582	594,293	552,588	72,986	70,238	69,036	70,826
Jacks	113,487	115,226	82,816	71,109	18,560	29,376	23,579	24,126
STEELHEAD	264,696	217,018	179,506	177,137	128,521	129,813	126,271	139,383
SOCKEYE	510,705	429,797	366,364	279,744	1,052	888	587	440
COHO*	41,297	26,959	21,828	19,901	1,492	1,353	1,986	1,688
Adults	36,455	23,777	18,762	16,523	1,307	1,014	1,671	1,449
Jacks	4,842	3,182	3,066	3,378	185	339	315	239
SHAD	1,815,001	**	**	999,552	220,757	**	**	84,833
LAMPREY	38,636	12,400	8,370	1,748	764	264	58	50
2016								
CHINOOK*	773,874	585,090	507,088	448,571	137,810	135,313	128,488	128,833
Spring*	148,319	115,503	101,921	93,515	72,513	72,381	68,959	67,530
Summer*	130,425	104,564	97,974	90,395	15,518	14,804	14,399	14,223
Fall*	495,130	365,023	307,193	264,661	49,779	48,128	45,130	47,080
Jacks	76,162	69,544	55,724	38,722	19,633	23,648	19,606	19,959
STEELHEAD	185,520	145,027	130,626	118,763	94,473	94,189	87,338	100,086
SOCKEYE	342,497	288,401	289,976	261,696	898	1,024	962	816
COHO*	47,358	22,909	19,635	12,013	2,141	3,293	2,392	3,170
Adults	41,882	21,007	17,019	10,899	1,997	2,804	1,827	2,841
Jacks	5,476	1,902	2,616	1,114	144	489	565	329
SHAD	1,770,303	**	**	1,003,755	264,827	**	**	42,486
LAMPREY	52,323	11,557	9,769	1,612	875	240	192	106
2017								
CHINOOK*	554,899	389,976	313,886	277,496	78,076	80,253	77,071	81,318
Spring*	101,726	70,795	59,150	51,313	35,255	36,815	34,933	35,613
Summer*	98,692	78,523	67,779	61,984	11,371	11,604	12,840	12,579
Fall*	354,481	240,658	186,957	164,199	31,450	31,834	29,298	33,126
Jacks	66,406	49,602	41,269	23,741	14,093	18,122	16,282	18,579
STEELHEAD	116,429	95,233	83,253	79,006	61,961	66,499	59,259	76,684
SOCKEYE	87,693	64,058	66,041	58,022	392	346	288	228
COHO*	79,099	36,591	34,246	23,201	5,737	7,587	7,891	8,801
Adults	74,347	33,457	29,080	21,637	5,328	6,536	6,810	8,177
Jacks	4,752	3,134	5,166	1,564	409	1,051	1,081	624
SHAD	3,135,401	**	**	1,610,611	368,693	**	**	28,771
LAMPREY	82,572	30,696	23,404	2,549	1,438	409	472	346
2018								
CHINOOK*	379,582	264,735	227,583	207,506	62,101	70,462	63,903	64,122
Spring*	94,346	62,719	55,615	47,898	34,792	38,418	34,320	34,109
Summer*	65,406	53,083	47,128	45,162	6,368	6,860	8,047	8,123
Fall*	219,830	148,933	124,840	114,446	20,941	25,184	21,536	21,890
Jacks	43,773	30,671	28,248	19,630	5,604	11,903	7,469	8,591
STEELHEAD	101,626	80,674	71,010	66,146	44,398	50,031	45,584	49,122
SOCKEYE	193,816	152,101	168,469	155,480	382	398	280	276
COHO*	47,041	24,426	19,371	13,928	1,516	2,058	1,752	2,389
Adults	38,695	21,949	16,486	12,142	1,248	1,552	1,434	1,497
Jacks	8,346	2,477	2,885	1,786	268	506	318	892
SHAD	6,059,933	**	**	3,871,859	807,491	**	**	49,709
LAMPREY	43,427	10,515	8,542	1,566	1,017	432	61	207
2019								
CHINOOK*	441,339	301,131	249,970	228,951	53,047	54,342	53,229	51,407
Spring*	61,384	43,804	41,127	36,792	25,215	26,194	24,582	23,025
Summer*	59,935	50,145	47,116	44,304	5,849	5,392	6,773	6,592
Fall*	320,020	207,182	161,727	147,855	21,983	22,756	21,874	21,790
Jacks	60,002	40,069	38,306	30,528	9,963	13,178	10,564	12,014
STEELHEAD	76,716	60,994	50,954	47,510	31,642	33,238	29,066	34,976
SOCKEYE	63,046	50,726	52,526	51,561	320	195	84	81
COHO*	77,472	43,230	34,111	28,145	6,797	7,384	7,006	8,085
Adults	71,465	38,742	29,847	25,503	6,425	6,471	5,428	7,682
Jacks	6,007	4,488	4,264	2,642	372	913	1,578	403
SHAD	7,459,145	**	**	3,051,348	527,068	**	**	16,345
LAMPREY	19,415	4,220	4,586	1,005	271	177	45	94

ASSUMED DATES FOR CHINOOK RUN (MAY VARY FROM PREVIOUS YEARS)

SPRING	15 MARCH - 31 MAY	1 APRIL - 3 JUNE	1 APR - 5 JUN	1 APR - 8 JUN	1 APR - 11 JUN	1 APR - 13 JUN	1 APR - 15-Jun	1 MAR - 17 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	16 JUN - 15-Aug	18 JUN - 17 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	16 AUG - 31 OCT	18 AUG - 15 DEC

*Includes Jack Counts.

Note: Counts are daytime window counts.

TABLE 2

FISH ESCAPEMENT AT MID COLUMBIA RIVER DAMS: 2015 - 2019

SPECIES	PRIEST RAPIDS	ROCK ISLAND	ROCKY REACH	WELLS
2015				
CHINOOK*	206,103	168,005	131,102	103,358
Spring*	29,286	42,263	19,896	21,491
Summer*	81,689	88,426	79,053	65,440
Fall*	95,128	37,316	32,153	16,427
Jacks	10,947	6,551	4,685	5,732
STEELHEAD	14,316	14,051	10,894	9,143
SOCKEYE	301,272	264,678	216,389	187,055
COHO*	5,036	4,499	2,140	1,173
Adults	4,411	4,360	2,016	1,125
Jacks	625	139	124	48
SHAD	17,043	**	**	**
LAMPREY	6,749	2,165	2,134	0
2016				
CHINOOK*	147,777	122,277	86,252	65,822
Spring*	17,846	27,449	13,080	12,622
Summer*	85,414	77,927	60,496	47,138
Fall*	44,517	16,901	12,676	6,062
Jacks	9,337	6,207	4,645	4,029
STEELHEAD	6,498	7,166	5,728	4,844
SOCKEYE	311,072	310,341	235,925	216,036
COHO*	1,987	2,489	418	423
Adults	1,781	2,359	391	392
Jacks	206	130	27	31
SHAD	11,361	**	**	**
LAMPREY	8,139	3,939	3,553	7
2017				
CHINOOK*	96,655	82,070	62,842	43,458
Spring*	8,051	12,055	7,372	7,409
Summer*	54,741	56,504	44,122	31,203
Fall*	33,863	13,511	11,348	4,846
Jacks	4,858	3,321	2,685	2,471
STEELHEAD	5,804	5,265	3,988	3,755
SOCKEYE	66,670	73,218	46,701	42,299
COHO*	8,719	13,200	5,432	3,847
Adults	8,120	13,090	5,373	3,790
Jacks	599	110	59	57
SHAD	8,090	**	**	**
LAMPREY	26,012	21,137	23,986	287
2018				
CHINOOK*	70,814	59,079	49,173	34,841
Spring*	8,016	13,280	8,716	8,476
Summer*	42,345	37,144	33,118	23,242
Fall*	20,453	8,655	7,339	3,123
Jacks	5,351	3,862	2,920	2,469
STEELHEAD	4,918	5,229	4,238	3,914
SOCKEYE	189,884	172,008	162,684	153,637
COHO*	5,186	9,014	4,424	2,946
Adults	4,856	8,391	4,009	2,812
Jacks	330	623	415	134
SHAD	79,326	**	**	**
LAMPREY	11,758	4,998	5,218	175
2019				
CHINOOK*	78,798	65,867	55,569	38,251
Spring*	8,742	14,977	10,195	8,736
Summer*	41,063	38,903	37,151	25,088
Fall*	28,993	11,987	8,223	4,427
Jacks	6,781	3,405	2,129	2,891
STEELHEAD	15,253	4,306	3,255	2,828
SOCKEYE	33,901	58,562	50,464	49,862
COHO*	8,673	13,554	6,761	4,088
Adults	8,148	12,872	6,364	3,957
Jacks	525	682	397	131
SHAD	0	**	**	**
LAMPREY	3,275	1,067	906	14

ASSUMED DATES FOR CHINOOK RUNS (MAY VARY FROM PREVIOUS YEARS)

SPRING	15 APR - 13 JUN	14 APR - 23 JUN	14 APR - 23 JUN	1 MAY - 28 JUN
SUMMER	14 JUN 13 AUG	24 JUN - 1 SEP	24 JUN - 1 SEP	29 JUN - 28 AUG
FALL	14 AUG - 15 NOV	2 SEP - 15 NOV	2 SEP - 15 NOV	29 AUG - 15 NOV

*Includes Jack counts.

TABLE 3 and TABLE 4

STEELHEAD OVER COLUMBIA AND SNAKE RIVER DAMS 1953-2019

BY RUN-YEAR (JUNE 1 - MAY 31)

Information Below Concerns the Following Two Tables

Estimating the size of the upriver steelhead run has previously been hampered because of the calendar year approach used in the summary tables. Problems in accountability arise due to over wintering behavior of summer steelhead, especially Snake River stocks, which often have sizeable proportions of the run remaining below mainstem projects during the winter months. Migration of these steelhead commences again the following spring when warming reservoir temperatures trigger upstream movement. For this reason, an additional table has been prepared that summarizes steelhead trout counts at each project on a "fish year" basis: June 1 - May 31. Because all stocks of steelhead cross Bonneville Dam during the calendar year, those summary counts have not been modified.

Footnotes for the Following Two Tables

*Because counting started at each dam early in the year after construction was complete, these figures are for the latter part of the run year only. That part of the run year starting after June 1st of the previous 'year passed the dams without being counted.

**1981 was the last year visual counts were made at Little Goose Project until 1991.

TABLE 3

STEELHEAD OVER COLUMBIA AND SNAKE RIVER DAMS 1953 - 2019

BY RUN-YEAR (JUNE 1 - MAY 31)

RUN-YEAR	THE DALLEES	JOHN DAY	M McNARY	ICE HARBOR	LOWER MONUMENTAL	LITTLE GOOSE**	LOWER GRANITE
1953-54			8,252 *				
1954-55			72,913				
1955-56			84,434				
1956-57	3,531 *		40,660				
1957-58	128,124		105,136				
1958-59	120,170		87,413				
1959-60	155,892		111,288				
1960-61	110,955		95,556				
1961-62	134,740		104,679	9,474 *			
1962-63	163,125		163,333	108,186			
1963-64	118,899		113,676	76,788			
1964-65	110,509		99,872	58,025			
1965-66	142,376		120,469	62,566			
1966-67	144,267		144,461	64,987			
1967-68	122,231	6,598 *	83,948	47,536			
1968-69	147,844	122,649	107,806	85,273	16,240 *		
1969-70	111,617	81,623	74,933	58,172	63,269	9,256 *	
1970-71	99,319	81,238	68,598	54,445	58,430	54,257	
1971-72	151,329	117,402	110,450	66,196	68,704	70,867	
1972-73	135,730	149,704	95,837	63,584	66,650	63,033	
1973-74	100,924	93,951	62,158	37,245	38,288	37,099	
1974-75	71,336	40,868	26,191	12,170	14,851	13,818	2,789 *
1975-76	57,695	33,640	25,150	15,895	17,236	15,177	16,592
1976-77	83,194	59,368	54,409	24,140	21,801	21,109	22,562
1977-78	133,096	102,193	86,962	54,911	48,160	47,617	57,029
1978-79	58,995	43,554	34,580	27,252	19,849	24,050	26,473
1979-80	86,317	59,825	54,213	26,790	20,073	23,816	28,758
1980-81	93,309	77,113	63,957	47,778	32,599	36,680	37,996
1981-82	112,265	96,663	62,955	43,274	37,755	36,896	42,420
1982-83	116,178	105,438	72,246	70,236	60,775	**	72,384
1983-84	172,033	157,602	126,706	90,030	82,555		88,760
1984-85	221,299	204,595	142,246	101,008	92,947		104,417
1985-86	274,826	245,087	181,635	123,187	104,400		116,147
1986-87	280,671	234,651	193,096	142,273	121,107		129,983
1987-88	219,822	172,290	151,587	77,565	64,717		71,280
1988-89	197,669	163,283	150,361	98,950	81,324		87,137
1989-90	236,584	193,951	170,014	149,361	131,050	**	131,420
1990-91	128,123	107,117	94,522	54,370	44,518	1,070	56,865
1991-92	199,244	158,790	168,156	122,874	97,454	96,421	99,052
1992-93	233,430	197,715	197,739	166,654	136,820	118,949	128,265
1993-94	123,449	94,080	90,359	68,568	65,883	58,747	59,768
1994-95	111,378	92,362	92,568	49,450	48,231	46,258	47,302
1995-96	146,152	123,319	114,813	91,938	89,953	77,417	79,126
1996-97	162,447	156,924	124,820	101,384	96,785	82,573	86,898
1997-98	164,657	159,442	129,772	104,220	85,959	74,845	86,617
1998-99	116,262	156,628	98,606	84,135	65,173	62,641	70,721
1999-00	157,062	165,239	84,413	84,253	73,135	65,505	73,811
2000-01	205,801	219,433	131,330	126,989	113,454	102,074	116,490
2001-02	504,704	489,215	401,881	286,874	298,042	270,031	269,281
2002-03	389,119	393,339	292,034	213,944	230,466	215,586	222,050
2003-04	281,586	298,452	242,677	189,143	181,005	170,582	172,487
2004-05	240,134	232,656	210,249	169,797	154,386	146,810	151,634
2005-06	244,295	231,858	224,369	158,099	155,682	145,202	158,511
2006-07	250,603	233,841	210,672	127,216	135,029	124,052	148,982
2007-08	244,996	234,667	215,873	154,512	155,817	135,730	154,534
2008-09	277,551	276,971	221,319	172,330	186,748	170,865	178,491
2009-10	516,214	581,067	408,091	328,107	316,665	303,183	323,378
2010-11	332,002	284,018	262,773	206,948	213,580	196,969	208,713
2011-12	299,396	256,475	248,202	198,131	187,003	173,052	180,285
2012-13	200,660	161,100	153,728	106,738	100,419	96,572	109,187
2013-14	190,819	157,974	143,740	114,091	109,422	95,223	107,954
2014-15	255,224	200,671	209,654	151,336	168,423	144,911	165,803
2015-16	216,916	179,273	176,870	128,742	129,481	128,189	136,069
2016-17	145,946	130,770	120,815	94,173	94,198	93,482	102,005
2017-18	95,703	83,105	80,309	62,197	66,262	58,993	74,026
2018-19	80,762	73,340	66,245	47,998	49,861	45,228	51,886
Total	11,131,506	8,773,127	8,684,831	5,862,508	5,112,634	3,954,835	4,856,338
10-Year Average	233,364	210,779	187,043	143,846	143,531	133,580	145,931

*Partial year

** 1981 was the last year visual counts were made at Little Goose Project until 1991.

Note: Extended video counts from participating projects included for 1996 - 2008, 2012-19.

TABLE 4

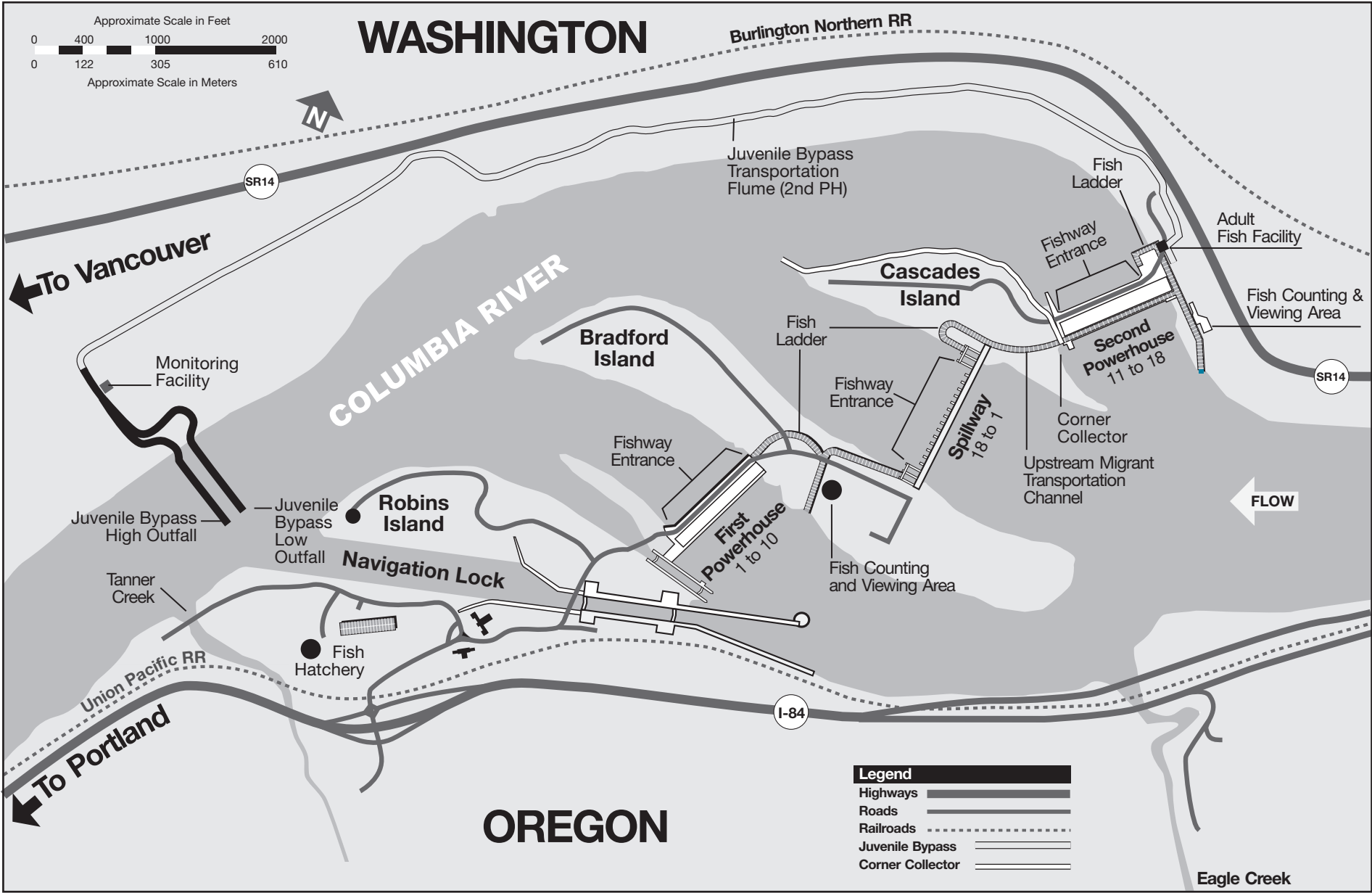
STEELHEAD OVER MID COLUMBIA RIVER DAMS 1959 - 2019

BY RUN-YEAR (JUNE 1 - MAY 31)

RUN-YEAR	PRIEST RAPIDS	ROCK ISLAND	ROCKY REACH	WELLS
1959-60	810 *			
1960-61	7,277			
1961-62	8,970			
1962-63	9,408			
1963-64	8,808			
1964-65	6,137			
1965-66	9,055			
1966-67	13,159			
1967-68	8,402			
1968-69	9,672			
1969-70	6,140			
1970-71	5,764			
1971-72	11,331			
1972-73	6,006			
1973-74	6,881			
1974-75	2,955			
1975-76	2,558			44 *
1976-77	9,490			4,636
1977-78	9,632			5,464
1978-79	4,479			1,475
1979-80	8,704			3,771
1980-81	8,308			3,363
1981-82	9,122	7,607	5,567	4,107
1982-83	10,948	9,737	6,037	7,805
1983-84	32,103	29,885	19,864	19,540
1984-85	26,566	25,287	17,349	16,663
1985-86	34,007	31,813	22,621	19,712
1986-87	22,332	22,766	15,060	13,251
1987-88	14,054	12,887	7,243	5,565
1988-89	10,138	9,100	5,573	4,358
1989-90	10,720	9,244	5,991	4,577
1990-91	7,858	6,926	5,023	3,842
1991-92	14,047	11,125	7,788	7,823
1992-93	13,596	12,382	7,429	7,029
1993-94	5,405	4,689	2,738	2,359
1994-95	6,710	5,633	2,825	2,181
1995-96	4,357	4,168	1,777	951
1996-97	8,323	7,295	5,780	4,154
1997-98	8,942	7,718	6,756	4,074
1998-99	5,846	4,968	4,404	2,676
1999-00	8,267	6,346	4,848	3,514
2000-01	11,341	10,565	8,307	6,287
2001-02	30,102	28,614	22,114	18,519
2002-03	15,867	15,243	11,718	9,430
2003-04	17,729	17,633	13,919	10,016
2004-05	18,655	19,448	14,624	9,306
2005-06	12,502	12,413	9,498	7,168
2006-07	10,415	9,371	8,141	6,691
2007-08	15,257	13,516	10,487	7,600
2008-09	16,658	16,119	13,798	9,733
2009-10	40,121	37,821	29,481	25,468
2010-11	26,431	22,129	18,091	12,957
2011-12	20,806	19,123	15,418	12,047
2012-13	17,192	15,387	12,529	9,741
2013-14	15,072	11,671	9,296	7,280
2014-15	19,766	14,893	10,450	7,650
2015-16	14,303	13,962	10,871	9,165
2016-17	6,507	7,182	5,762	4,820
2017-18	5,804	5,269	3,951	3,835
2018-19	4,909	5,244	4,283	3,912
Total	736,724	525,179	387,411	334,559
10-Year Average	17,091	15,268	12,013	9,688

*Partial year

Plate 2 Bonneville Lock and Dam



BONNEVILLE DAM

FISH COUNTING SCHEDULE

Jan 01 – Mar 31	Video 0400–2000 hours (PST)
Apr 01 – Nov 30	Visual 0500–2100 hours (DST)
May 15 – Sep 30	Night Video 2100–0500 hours (DST)
Dec 01 – Dec 31	Video 0400–2000 hours (PST)

*In 2019, Daylight Saving Time (DST) is in effect March 10 – November 3 and hours are adjusted forward 1 hour from Pacific Standard Time (PST). DST = PST+1.

FISH FACILITIES OPERATION SCHEDULE

Fish Facility	OOS Date 2018	In Service Date 2019	OOS Date 2019	Reason for Outage
BI Ladder	NA	NA	30-Nov	Winter Maintenance
A-branch	NA	NA	30-Nov	Winter Maintenance
B-branch	NA	NA	30-Nov	Winter Maintenance
CI Ladder	NA	NA	NA	Winter Maintenance
WA Shore Ladder	1-Dec	28-Feb	NA	Winter Maintenance
UMT	1-Dec	28-Feb	NA	Winter Maintenance
BI LPS	31-Oct	18-Apr	31-Oct	Winter Maintenance
CI LPS	31-Oct	16-Apr	31-Oct	Winter Maintenance
WA AWS LPS	31-Oct	11-Apr	31-Oct	Winter Maintenance
NDE LFS/LPS	14-Sep	13-May	13-Sep	Low CPUE
AFF Lamprey Trap	14-Sep	13-May	13-Sep	Low CPUE
BI Wetted Wall	10-Sep	17-Apr	10-Oct	Winter Maintenance
B2CC	1-Sep	16-Jan	1-Sep	Early start due to PH1 ITS closure
DSM	19-Dec	23-Feb	19-Dec	Winter Maintenance
AFF	7-Nov	30-Apr	18-Oct	CRITFC concluded sampling efforts
SMF	31-Oct	2-Mar	31-Oct	Winter Maintenance

FISHWAY ACTIVITIES

The following are fishway modifications for the 2018/2019 passage year:

POWERHOUSE ONE LAMPREY

2019. Bradford Island LPS exit ramp had grooves deepened and lid installed to dissuade algae growth and avian predation.

2018/19. Tested reduced nighttime entrance velocities at PH1 and B-branch entrances.

2018/19. Field tested the Bradford Is. Wetted Wall (BIWW).

POWERHOUSE TWO LAMPREY

2019. Orifice slots in weir 1 closed permanently. Six additional slots drilled in odd numbered weirs to exit (7, 9, 11, 13, 15, &17).

2019. Lamprey weir caps installed on NDE and NUE.

FISH REMOVAL

Fish passage facilities and turbine units are taken out of service and dewatered to allow for inspection, preventative maintenance, repairs, and modifications. As facilities and turbine units are dewatered, project biologists follow procedures outlined in the FPP and detailed in the Fish Salvage Plan to minimize impacts on fish. Adult salmonids and adult lamprey are generally released into the forebay above the new navigation lock. Juvenile salmonids, juvenile lamprey, and sturgeon are generally released below the dam at the Hamilton Island boat launch. The following is a summary of the number of fish that were removed during facility and turbine unit dewaterings. All fish were recovered in good condition unless otherwise noted.

Date	Location	Fish Salvaged	Release Site
12/3	UMT	2 juvenile salmonids, 3 American Shad, ~200 Cyprinids, 4 adult Steelhead Trout, and 3 adult Chinook Salmon	Upstream of Nav Lock
12/3	WA Shore Exit to Tailwater	~150 American Shad, ~200 Cyprinids, 9 adult Steelhead Trout, ~20 juvenile salmonids, 6 adult Chinook Salmon, and 16 Pacific Lamprey	Upstream of Nav Lock
12/8	PH2CC / Junction Pool	1 adult Chinook Salmon	Upstream of Nav Lock
2/5	MU1 Tail-logs	5 juvenile salmonids, 1 juvenile lamprey, 15 sculpin, 2 crayfish and 1 Peamouth	Hamilton Island Boat Launch
5/9	MU15 Tail-logs	~20 sculpin, 1 Pikeminnow, and 1 catfish	Tailwater
7/9	MU6 Draft Tube	9 Pacific Lamprey	Upstream of Nav Lock
8/29	MU6 Tail-logs	4 Steelhead Trout, ~16 sculpins, 1 Carp, and 1 Centrarchid	Upstream of Nav Lock
9/7	Nav Lock 2	~24 adult Salmonids	Upstream of Nav Lock
9/23	Nav Lock 2	1 adult Chinook Salmon and 2 adult Steelhead Trout	Upstream of Nav Lock
11/19	AFF	2 juvenile salmonids, 1 White Sturgeon, 4 Cyprinids, and ~300 American Shad	Upstream of Nav Lock

TABLE 5

MONTHLY TOTALS OF SALMONID, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER BONNEVILLE DAM.
2019

DAYTIME-Live plus video

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*			44	4,716	56,625	39,653	20,282	60,079	227,896	28,128	4,310	72	441,805
STEELHEAD	183	66	971	493	459	2,182	22,288	29,526	14,107	6,545	330	170	77,320
SOCKEYE					26	44,672	18,114	232	2				63,046
COHO*	5						10	8,251	50,441	16,489	2,965	2,066	80,227
CHUM								1	0	14	291	10	316
PINK							4	33	62	5			104
TOTAL	188	66	1,015	5,209	57,110	86,507	60,698	98,122	292,508	51,181	7,896	2,318	662,818

SHAD					754,337	6,309,363	390,956	4,489					7,459,145
LAMPREY	-16	-20	-3	0	258	6,076	9,184	3,626	287	-15	-3	0	19,374
STURGEON								39	84	8	-2		129
BULL TROUT													0

NIGHT -Video

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*					685	1,003	406	3,803	15,539				21,436
STEELHEAD					12	116	414	795	1,297				2,634
SOCKEYE						2,063	1,173	9	5				3,250
COHO*							7	430	3,822				4,259
CHUM													0
PINK													0
TOTAL					697	3,182	2,000	5,037	20,663				31,579

LAMPREY					437	11,465	12,429	5,619	306				30,256
BULL TROUT													0

LAMPREY PASSAGE SYSTEM-24 hour counts

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
LAMPREY				1	160	10,651	6,602	3,170	514	33			21,132

*Jacks included.

note: For count schedules and LPS operations refer to the BON narrative.

For 24 hour annual passage totals add the daytime and night totals. For annual Lamprey passage total add the daytime, night, and LPS totals

TABLE 6
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS														JANUARY 2019					
DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL						STEELHEAD	STEELHEAD									
Jan 1					2	0		7	2					0	136.8	1.0	7.0	44.0	
Jan 2					0	1		19	7					-1	131.5	1.0	7.0	44.0	
Jan 3					1	0		8	4					0	135.0	1.1	7.0	43.0	
Jan 4					0	0		18	12					0	122.7	1.0	7.0	43.0	
Jan 5					0	0		11	6					0	160.9	1.0	7.0	43.0	
Jan 6					1	0		8	1					0	131.5	1.0	7.0	43.0	
Jan 7					0	0		7	5					0	136.9	1.0	7.0	41.0	
Jan 8					0	0		1	-2					0	158.6	1.0	7.0	41.0	
Jan 9					0	0		2	0					0	156.0	1.0	7.0	42.0	
Jan 10					0	0		6	1					0	152.7	1.0	7.0	42.0	
Jan 11					0	0		9	7					-1	154.8	1.0	7.0	41.0	
Jan 12					0	0		4	-2					0	139.8	1.0	7.0	41.0	
Jan 13					0	0		5	4					0	137.4	1.0	7.0	41.0	
Jan 14					0	0		0	-2					0	146.0	1.0	7.0	41.0	
Jan 15					0	0		3	0					0	163.4	1.0	7.0	41.0	
Jan 16					0	0		4	1					0	155.2	1.0	7.0	40.0	
Jan 17					0	0		1	0					1	146.0	1.0	7.0	40.0	
Jan 18					0	0		5	1					-1	130.8	1.0	7.0	40.0	
Jan 19					0	0		9	4					-1	112.6	1.0	7.0	40.0	
Jan 20					0	0		9	4					0	112.7	1.0	7.0	40.0	
Jan 21					1	0		3	1					-1	114.7	1.0	7.0	40.0	
Jan 22					0	0		9	6					-4	139.6	1.0	7.0	40.0	
Jan 23					-1	0		6	5					0	125.6	1.0	7.0	40.0	
Jan 24					0	0		4	1					-2	139.0	1.1	7.0	40.0	
Jan 25					0	0		2	1					-1	137.0	1.1	7.0	40.0	
Jan 26					0	0		2	1					0	140.1	1.1	7.0	40.0	
Jan 27					0	0		0	1					-1	126.2	1.1	7.0	40.0	
Jan 28					0	0		3	2					0	134.4	1.1	7.0	40.0	
Jan 29					0	0		8	4					0	137.6	1.1	7.0	40.0	
Jan 30					0	0		8	7					-1	147.8	1.1	7.0	41.0	
Jan 31					0	0		2	1					-3	151.9	1.1	7.0	40.0	
TOTAL					4	1		183	83					-16					
AVG					0	0		6	3					-1	139.2	1.0	7.0	41.0	

Note: January 1 to March 31 counts were from video review. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.

TABLE 7
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

DATE	BONNEVILLE PROJECT - FISH COUNTS												FEBRUARY 2019				
	CHINOOK ADULT			CHINOOK	COHO			unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD					KCFS	KCFS	SECCHI	DEG F
Feb 1								3	2					129.1	1.1	7.0	40.0
Feb 2								3	2					142.9	1.0	7.0	40.0
Feb 3								6	4					130.6	1.0	7.0	40.0
Feb 4								1	0					137.7	1.1	7.0	40.0
Feb 5								2	2					148.4	1.1	7.0	40.0
Feb 6								5	3					153.7	1.1	7.0	40.0
Feb 7								0	1					142.4	1.1	7.0	40.0
Feb 8								3	2					138.3	1.1	7.0	39.0
Feb 9								-2	-1					135.0	1.1	7.0	39.0
Feb 10								1	1					134.0	1.1	7.0	37.0
Feb 11								-2	-2					131.1	0.5	7.0	38.0
Feb 12								1	2					135.1	0.6	7.0	37.0
Feb 13								2	1					136.8	0.2	7.0	36.0
Feb 14								1	1					150.9	0.0	7.0	36.0
Feb 15								0	0					125.7	0.0	7.0	37.0
Feb 16								6	1					128.9	0.9	5.0	37.0
Feb 17								5	0					147.2	1.1	7.0	37.0
Feb 18								1	1					157.1	1.2	7.0	37.0
Feb 19								5	3					137.1	1.2	7.0	37.0
Feb 20								4	0					136.0	1.2	7.0	37.0
Feb 21								3	3					127.7	1.1	7.0	36.0
Feb 22								5	4					137.3	1.1	7.0	37.0
Feb 23								2	2					142.4	1.1	7.0	37.0
Feb 24								0	0					154.3	1.1	7.0	37.0
Feb 25								4	3					131.6	1.2	7.0	37.0
Feb 26								2	2					146.0	1.2	7.0	37.0
Feb 27								2	2					145.5	1.2	5.0	37.0
Feb 28								3	2					130.4	1.2	7.0	37.0
TOTAL								66	41				-20				
AVG								2	1				-1	139.0	1.0	6.9	37.8

Note: January 1 to March 31 counts were from video review. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.

TABLE 8
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS														MARCH 2019				
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped							DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Mar 1	0							9	7				0		131.0	1.2	7.0	36.0
Mar 2	0							3	3				-1		134.1	1.2	7.0	36.0
Mar 3	0							5	4				0		132.7	1.3	7.0	35.0
Mar 4	0							-1	-1				0		136.6	1.2	7.0	35.0
Mar 5	0							3	3				0		143.8	1.2	7.0	35.0
Mar 6	0							1	1				0		151.9	1.3	7.0	35.0
Mar 7	0							1	1				0		175.6	1.3	7.0	35.0
Mar 8	0							1	0				0		167.6	1.3	7.0	35.0
Mar 9	0							7	4				0		178.9	1.2	7.0	35.0
Mar 10	0							6	2				-1		153.9	1.2	7.0	36.0
Mar 11	1							5	1				0		125.6	1.2	7.0	36.0
Mar 12	0							2	2				0		123.0	1.3	7.0	36.0
Mar 13	0							5	2				0		125.0	1.2	7.0	36.0
Mar 14	0							21	14				0		128.2	1.2	7.0	36.0
Mar 15	0							4	1				0		130.1	1.2	6.0	37.0
Mar 16	2							20	8				0		130.6	1.3	6.0	38.0
Mar 17	1							21	10				0		130.7	1.2	6.0	38.0
Mar 18	0							11	2				0		129.7	1.0	7.0	39.0
Mar 19	2							48	22				-1		130.3	1.2	5.0	39.0
Mar 20	0							49	23				0		131.1	1.2	6.0	40.0
Mar 21	3							45	23				0		139.5	1.3	6.0	40.0
Mar 22	1							69	41				0		155.2	1.4	7.0	40.0
Mar 23	2							192	108				0		189.6	1.2	5.0	41.0
Mar 24	0							145	68				0		177.7	1.3	6.0	41.0
Mar 25	4							49	28				0		190.5	1.2	3.0	42.0
Mar 26	1							50	28				0		197.6	1.2	3.5	42.0
Mar 27	1							27	17				0		201.8	1.3	4.0	42.0
Mar 28	4							47	29				0		187.3	1.2	3.0	42.0
Mar 29	8							40	21				0		195.8	1.2	3.0	42.0
Mar 30	2							46	33				0		196.9	1.2	4.0	42.0
Mar 31	12							40	21				0		188.4	1.2	4.0	43.0
TOTAL	44							971	526				-3					
AVG	1							31	17						155.2	1.2	5.9	38.2

Note: January 1 to March 31 counts were from video review. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST. Visual counting started April 1. Official Spring Chinook run started March 15. January, February, and March 1-14 Chinook counts were not added to spring totals.

TABLE 9
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS														APRIL 2019				
DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL															
Apr 1	4			2				27	12						188.9	1.2	3.5	44.0
Apr 2	8			-1				29	21						165.0	1.2	5.0	44.0
Apr 3	28			1				23	14						148.8	1.4	4.0	45.0
Apr 4	23			1				24	12						160.2	1.4	4.0	45.0
Apr 5	15			0				17	11						176.5	1.4	4.0	46.0
Apr 6	27			0				20	15						210.2	1.4	6.0	46.0
Apr 7	20			0				32	20						218.1	1.5	6.0	46.0
Apr 8	8			0				36	22						229.1	1.4	4.0	46.0
Apr 9	7			0				12	10						261.9	12.3	4.0	46.0
Apr 10	0			0				6	3						357.3	140.7	0.0	47.0
Apr 11	5			0				32	17						366.4	140.0	2.0	47.0
Apr 12	8			0				20	11						331.0	114.9	3.0	47.0
Apr 13	1			0				11	5						277.9	113.6	2.0	48.0
Apr 14	19			0				12	8						256.5	113.1	1.0	48.0
Apr 15	12			0				11	8						255.2	113.0	3.0	48.0
Apr 16	38			0				8	3						219.2	113.2	2.0	48.0
Apr 17	54			1				8	5						231.2	114.0	2.0	48.0
Apr 18	63			0				15	10						231.9	115.3	2.0	49.0
Apr 19	88			0				19	7						243.1	118.0	2.0	50.0
Apr 20	148			0				19	6						233.7	118.4	1.0	51.0
Apr 21	235			2				10	7						247.8	118.7	1.0	51.0
Apr 22	220			2				22	11						288.8	118.1	1.0	51.0
Apr 23	175			0				15	4						305.1	118.6	1.0	51.0
Apr 24	195			0				3	1						324.6	126.6	1.0	51.0
Apr 25	161			0				4	0						357.3	135.1	1.0	52.0
Apr 26	133			1				10	6						318.7	119.3	2.0	52.0
Apr 27	356			4				5	2						301.6	118.8	1.0	52.0
Apr 28	497			6				9	2						300.1	118.6	1.0	52.0
Apr 29	745			14				15	4						288.9	118.4	1.5	52.0
Apr 30	1,368			22				19	6						280.1	117.7	2.0	53.0
TOTAL	4,661			55				493	263									
AVG	155			2				16	9						259.2	84.9	2.4	48.5
RUN YEAR																		
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	unclipped STEELHEAD									
SPRING		4,704	55					1,396	746									

TABLE 10
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL														SECCHI	DEG F
May 1	2,488			27			0	15	13			0	1		267.5	117.1	2.5	54.0
May 2	5,051			96			0	20	15			0	0		246.7	116.3	2.0	53.0
May 3	2,592			48			0	17	12			0	0		248.6	117.4	3.0	53.0
May 4	1,606			25			0	19	14			0	0		251.0	119.8	3.0	53.0
May 5	1,565			53			0	15	14			0	0		238.3	119.9	3.0	53.0
May 6	2,259			96			0	20	13			0	1		235.0	120.3	3.0	54.0
May 7	4,807			263			0	26	17			1	1		243.7	119.9	3.0	55.0
May 8	2,736			209			0	21	14			12	0		238.5	119.5	0.0	55.0
May 9	2,209			194			0	14	7			114	0		251.1	119.9	3.0	56.0
May 10	2,422			243			0	10	8			223	2		265.9	119.3	4.0	55.0
May 11	2,449			369			0	15	10			638	-1		278.4	117.9	4.0	55.0
May 12	1,773			351			0	12	12			1,236	2		280.0	117.9	3.0	56.0
May 13	1,753			376			0	8	6			1,803	2		278.9	117.6	4.0	56.0
May 14	1,266			348			0	10	8			3,384	-1		308.0	117.7	3.0	56.0
May 15	1,297			318			0	13	9			2,270	1		335.9	119.3	3.0	56.0
May 16	930			248			0	15	11			1,804	-1		332.7	115.2	3.0	56.0
May 17	1,156			360			0	24	14			1,509	3		326.5	112.7	3.0	56.0
May 18	1,362			421			0	17	12			4,677	2		338.4	121.3	3.0	56.0
May 19	1,319			412			0	3	2			8,395	12		353.7	116.9	3.0	57.0
May 20	908			207			0	5	5			5,700	17		342.2	114.3	4.0	57.0
May 21	937			252			0	6	4			3,777	22		319.9	112.6	4.0	57.0
May 22	802			217			0	8	6			6,030	1		301.2	113.2	4.0	56.0
May 23	803			214			0	17	14			7,375	3		304.5	111.8	4.0	56.0
May 24	689			207			0	14	7			8,944	-1		276.3	114.9	4.0	57.0
May 25	698			198			0	16	14			6,275	7		278.4	112.6	4.0	57.0
May 26	699			148			0	14	7			15,406	11		289.6	113.8	5.0	56.0
May 27	584			150			0	18	9			25,084	16		278.9	113.6	4.0	57.0
May 28	632			153			2	15	10			34,196	10		299.3	113.7	4.0	57.0
May 29	646			116			0	16	7			108,763	13		299.5	116.4	4.0	57.0
May 30	684			169			10	14	9			151,868	23		308.7	117.2	4.0	57.0
May 31	830			185			14	22	15			354,853	112		331.8	116.9	3.5	58.0
TOTAL	49,952			6,673			26	459	318			754,337	258					
AVG	1,611			215			1	15	10			24,333	8		288.7	116.7	3.4	55.7
RUN YEAR TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	STEELHEAD	unclipped STEELHEAD			SHAD	LAMPREY					
	SPRING	54,656	6,728				26	1,855	1,064			754,337	258					

TABLE 11

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped			PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F	
	SPRING	SUMMER	FALL						STEELHEAD	STEELHEAD	STEELHEAD										
Jun 1		862		186			13	20	10					342,480	226		342.1	120.6	4.0	59.0	
Jun 2		970		138			15	21	11					352,186	229		311.6	115.9	4.0	59.0	
Jun 3		791		103			17	17	7					335,463	204		303.7	125.0	4.0	60.0	
Jun 4		795		106			40	22	6					315,678	151		312.3	130.9	4.0	60.0	
Jun 5		1,103		136			52	20	6					412,448	153		293.0	116.2	4.0	60.0	
Jun 6		933		101			104	23	9					362,927	160		295.9	120.8	3.0	60.0	
Jun 7		999		187			139	39	10					173,772	103		260.6	116.2	3.0	60.0	
Jun 8		949		165			185	33	7					183,872	135		251.7	118.2	4.0	60.0	
Jun 9		956		190			269	28	8					294,013	98		245.4	116.7	4.0	60.0	
Jun 10		1,053		136			295	25	17					354,495	94		257.5	116.8	4.0	61.0	
Jun 11		1,278		180			404	27	15					298,654	184		242.3	118.3	5.5	62.0	
Jun 12		1,327		176			540	24	15					267,782	176		233.5	119.0	5.0	62.0	
Jun 13		1,508		197			738	37	17					232,993	183		228.1	119.4	5.0	63.0	
Jun 14		1,569		178			674	41	29					207,887	443		212.7	119.3	5.0	63.0	
Jun 15		1,485		185			1,268	45	25					186,015	320		215.3	118.9	5.0	63.0	
Jun 16		1,818		183			1,307	42	17					213,089	221		191.4	95.3	4.0	63.0	
Jun 17		1,219		164			1,361	52	20					200,274	268		205.3	95.2	4.0	63.0	
Jun 18		1,383		173			1,969	49	24					193,713	263		189.1	95.1	5.0	63.0	
Jun 19		1,330		230			2,933	69	44					182,469	277		171.1	95.3	5.0	64.0	
Jun 20		895		182			1,987	78	47					93,664	125		179.9	95.3	5.0	64.0	
Jun 21		1,084		199			2,612	104	55					135,218	119		204.1	95.2	5.0	64.0	
Jun 22		825		143			2,782	71	46					165,383	126		204.8	95.2	5.0	63.0	
Jun 23		1,232		189			3,165	100	52					149,784	197		160.0	95.1	5.0	63.0	
Jun 24		1,126		188			3,037	94	59					133,758	176		177.4	95.3	5.0	64.0	
Jun 25		1,179		167			3,108	95	62					148,555	230		177.1	95.3	5.0	64.0	
Jun 26		976		136			2,850	167	105					114,476	285		179.5	95.4	6.0	64.0	
Jun 27		1,036		174			2,709	141	84					50,983	186		184.2	95.4	6.0	64.0	
Jun 28		1,225		253			3,512	214	138					48,726	177		178.0	95.0	6.0	64.0	
Jun 29		1,318		227			3,751	209	119					78,376	261		166.4	95.3	6.0	64.0	
Jun 30		1,228		229			2,836	275	171					80,230	306		155.0	95.2	6.0	64.0	
TOTAL		34,452		5,201			44,672	2,182	1,235					6,309,363	6,076						
AVG		1,148		173			1,489	73	41					210,312	203		224.3	107.4	4.7	62.2	
RUN YEAR		CHINOOK ADULT		CHINOOK JACK			SOCKEYE	STEELHEAD	unclipped STEELHEAD					SHAD	LAMPREY						
TOTALS TO DATE																					
SPRING		54,656		6,728			44,698	4,037	2,299					7,063,700	6,334						
SUMMER		34,452		5,201																	
TOTAL		89,108		11,929																	

TABLE 12

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped			SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL						STEELHEAD	PINK	CHUM						SECCHI	DEG F
Jul 1		1,009		222	0	0	1,883	292	159	0		60,795	289		176.2	95.3	7.0	65.0
Jul 2		1,093		192	0	0	1,654	339	203	0		35,991	292		144.1	95.2	6.0	66.0
Jul 3		959		196	0	0	1,802	460	272	0		28,145	174		139.2	95.2	6.0	66.0
Jul 4		825		178	0	0	1,562	482	298	0		31,966	130		139.3	95.2	6.0	66.0
Jul 5		770		139	0	0	1,642	479	307	0		38,874	217		139.3	95.1	6.0	65.0
Jul 6		683		138	0	0	1,611	457	269	0		27,337	160		139.4	95.3	7.0	65.0
Jul 7		501		122	0	0	923	396	237	0		17,844	175		139.7	95.2	7.0	65.0
Jul 8		613		150	0	0	1,069	454	292	0		25,057	242		142.6	95.4	5.0	66.0
Jul 9		659		159	0	0	1,031	572	352	0		28,195	383		144.6	95.5	6.0	66.0
Jul 10		735		125	0	0	768	511	330	0		18,102	300		139.2	95.0	6.0	66.0
Jul 11		509		127	0	0	508	596	385	0		15,323	492		139.0	94.9	6.0	67.0
Jul 12		583		131	0	0	415	650	395	0		15,426	608		145.9	95.7	7.0	67.0
Jul 13		522		114	0	0	427	545	361	0		9,642	579		159.9	96.0	7.0	67.0
Jul 14		484		127	0	0	374	633	401	0		6,167	448		141.4	95.9	7.0	67.0
Jul 15		542		137	0	0	367	807	493	0		5,910	403		153.6	95.9	7.0	68.0
Jul 16		533		115	0	0	306	878	550	0		4,567	355		151.9	95.9	7.0	68.0
Jul 17		422		89	0	0	247	824	503	0		4,426	381		140.7	95.6	7.0	68.0
Jul 18		440		76	0	0	289	921	570	0		2,596	238		140.0	95.4	7.0	69.0
Jul 19		388		87	0	0	191	702	395	0		1,610	194		146.4	95.6	6.0	69.0
Jul 20		363		59	0	0	158	754	470	2		1,353	179		152.3	96.0	7.0	69.0
Jul 21		465		114	0	2	190	822	522	1		1,402	378		147.0	96.0	7.0	69.0
Jul 22		471		109	2	2	129	880	537	0		1,352	374		140.6	94.6	5.0	69.0
Jul 23		434		128	0	0	116	1,000	575	0		1,310	325		140.0	95.8	7.0	69.0
Jul 24		373		97	0	0	92	914	506	0		1,862	433		128.8	85.0	7.0	69.0
Jul 25		361		83	1	1	84	1,067	643	0		1,189	357		143.2	94.6	7.0	69.0
Jul 26		297		70	0	0	63	751	454	1		1,239	316		161.6	94.5	7.0	70.0
Jul 27		339		79	0	0	58	1,005	659	0		752	331		142.1	94.6	7.0	70.0
Jul 28		377		124	0	0	52	1,226	715	0		785	100		134.4	90.0	7.0	70.0
Jul 29		290		75	0	0	36	1,141	618	0		556	98		139.7	95.5	7.0	71.0
Jul 30		305		57	1	1	38	1,005	559	0		531	147		147.2	91.2	7.0	71.0
Jul 31		253		65	0	0	29	725	440	0		652	86		152.4	95.2	7.0	71.0
TOTAL		16,598		3,684	4	6	18,114	22,288	13,470	4		390,956	9,184					
AVG		535		119			584	719	435			12,611	296		144.9	94.7	6.6	67.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	54,656	6,728
SUMMER	51,050	8,885
TOTAL	105,706	15,613

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY
4	6	62,812	26,325	15,769	4	7,454,656	15,518

TABLE 13

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped					DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL						STEELHEAD	PINK	CHUM	SHAD	LAMPREY			STURGEON	SECCHI	DEG F
Aug 1			396	77	1	1	26	1,231	717	0	0	388	92	1	170.0	95.6	7.0	70.0
Aug 2			289	45	0	0	23	983	551	0	0	429	295	0	154.4	95.8	7.0	70.0
Aug 3			356	77	1	0	19	1,038	592	0	0	219	163	0	157.0	95.5	7.0	70.0
Aug 4			424	85	2	0	19	1,214	690	0	0	237	147	0	150.3	95.3	7.0	70.0
Aug 5			342	77	0	2	21	1,215	658	0	0	250	136	0	142.3	95.4	7.0	72.0
Aug 6			418	74	0	1	19	1,222	703	0	0	185	102	0	146.2	95.6	0.0	72.0
Aug 7			362	157	1	1	13	1,553	855	0	0	217	153	0	148.6	95.7	7.0	72.0
Aug 8			202	49	1	0	10	1,371	729	0	0	350	146	0	153.7	95.1	7.0	72.0
Aug 9			258	47	1	0	7	1,252	648	0	0	227	133	0	133.3	89.4	7.0	72.0
Aug 10			438	67	0	0	7	777	425	0	0	215	104	1	125.7	81.6	7.0	72.0
Aug 11			693	58	0	1	3	976	511	0	0	124	111	0	124.0	80.7	7.0	72.0
Aug 12			986	91	3	2	10	1,190	656	0	0	131	86	0	119.5	76.0	7.0	72.0
Aug 13			844	162	9	1	9	1,172	621	0	0	89	791	0	134.7	85.1	7.0	71.0
Aug 14			488	143	8	3	10	1,483	720	1	0	175	402	0	150.5	94.7	3.0	71.0
Aug 15			555	142	20	7	3	1,149	562	0	0	178	159	1	127.2	83.1	3.0	72.0
Aug 16			564	106	19	4	1	1,085	493	0	0	89	78	0	120.8	77.9	4.0	72.0
Aug 17			820	152	23	8	3	1,312	624	0	0	123	99	0	121.8	78.8	4.0	72.0
Aug 18			719	165	35	9	6	845	375	1	0	62	-2	0	116.3	73.1	6.0	71.0
Aug 19			778	178	25	16	2	876	382	0	1	69	33	0	112.1	68.9	6.0	71.0
Aug 20			1,076	151	74	12	0	945	371	1	0	37	8	0	129.6	85.8	7.0	71.0
Aug 21			1,264	199	171	30	0	690	273	0	0	117	33	0	142.1	94.9	7.0	71.0
Aug 22			2,746	382	271	18	3	755	302	4	0	58	27	0	148.7	94.9	7.0	71.0
Aug 23			2,753	534	311	45	0	690	268	0	0	80	39	0	139.7	94.3	7.0	71.0
Aug 24			2,066	422	268	32	0	453	157	4	0	75	72	0	121.2	76.7	7.0	71.0
Aug 25			2,134	399	422	27	1	380	158	3	0	39	67	0	102.7	59.7	7.0	71.0
Aug 26			5,234	1,041	1,057	83	1	636	264	5	0	55	14	5	108.7	65.7	7.0	71.0
Aug 27			4,953	1,164	1,271	134	2	603	234	0	0	47	11	9	116.0	72.9	7.0	71.0
Aug 28			2,960	763	885	104	5	571	226	1	0	50	11	5	118.9	75.6	7.0	71.0
Aug 29			3,824	594	749	79	3	670	266	4	0	63	18	8	128.4	84.6	7.0	71.0
Aug 30			5,411	812	837	104	5	624	214	2	0	63	57	1	128.8	85.0	7.0	71.0
Aug 31			6,355	958	923	139	1	565	220	7	0	48	41	8	124.9	77.7	7.0	71.0
TOTAL			50,708	9,371	7,388	863	232	29,526	14,465	33	1	4,489	3,626	39				
AVG			1,636	302	238	28	7	952	467			145	117	1	132.8	84.6	6.3	71.2
RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK			COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON				
SPRING	54,656	6,728			7,392	869	63,044	55,851	30,234	37	1	7,459,145	19,144	39				
SUMMER	51,050	8,885																
FALL	50,708	9,371																
TOTAL	156,414	24,984																

TABLE 14

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped			LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL						STEELHEAD	PINK	CHUM					SHAD	SECCHI
Sep 1			6,863	1,114	823	146	1	814	280	3		94	2	108.3	1.9	7.0	72.0
Sep 2			5,187	658	595	118	1	612	230	2		49	5	100.5	1.4	7.0	72.0
Sep 3			7,241	681	732	109	0	477	164	0		16	14	110.0	1.3	7.0	72.0
Sep 4			6,678	950	1,287	152	0	513	214	1		19	8	106.5	1.4	7.0	72.0
Sep 5			9,479	1,436	2,306	205	0	598	210	6		4	14	104.0	1.4	7.0	72.0
Sep 6			6,585	1,170	1,907	172	0	466	156	3		13	-2	102.8	1.3	6.0	72.0
Sep 7			5,240	805	926	94	0	284	104	2		0	0	104.1	1.3	6.0	72.0
Sep 8			8,008	1,053	712	63	0	227	88	2		7	4	91.4	1.3	7.0	72.0
Sep 9			7,534	1,249	783	82	0	307	123	4		3	5	81.7	1.3	7.0	71.1
Sep 10			3,227	655	366	53	0	148	60	1		-5	3	87.7	1.3	7.0	71.1
Sep 11			6,754	721	536	72	1	254	94	0		15	2	94.6	1.3	6.0	71.1
Sep 12			14,946	1,814	1,856	100	0	524	187	3		22	6	113.5	1.3	7.0	71.1
Sep 13			18,260	2,092	4,008	194	-1	796	267	4		5	1	82.9	1.3	7.0	71.1
Sep 14			10,305	1,839	4,751	258	0	635	219	2		18	5	81.9	1.3	7.0	70.0
Sep 15			5,784	1,068	2,332	124	0	575	181	2		11	0	84.8	1.3	7.0	70.0
Sep 16			7,991	1,298	2,248	105	0	766	235	7		3	4	81.9	1.3	7.0	70.0
Sep 17			5,747	1,088	1,839	108	0	518	165	2		5	1	103.1	1.3	7.0	70.0
Sep 18			9,904	1,654	2,051	103	0	776	257	3		4	3	101.1	1.3	7.0	69.1
Sep 19			5,263	793	1,806	97	0	564	181	4		-1	1	78.8	1.2	6.0	69.1
Sep 20			5,375	910	2,279	188	0	621	174	1		3	2	72.9	1.2	6.0	69.1
Sep 21			3,868	826	2,062	175	0	441	143	3		6	1	75.5	1.2	7.0	69.1
Sep 22			6,189	979	1,490	140	0	602	173	3		-1	1	93.5	1.3	7.0	68.0
Sep 23			6,898	1,071	1,403	68	0	382	116	0		0	0	80.7	1.2	7.0	68.0
Sep 24			3,633	767	1,294	115	0	281	73	0		-2	1	74.2	0.7	7.0	66.9
Sep 25			4,786	613	1,517	99	0	382	116	0		-2	0	88.5	1.2	7.0	66.9
Sep 26			3,755	597	1,314	103	0	323	96	0		-1	0	74.5	1.2	7.0	66.9
Sep 27			3,139	464	1,072	130	0	283	71	0		0	0	79.8	1.2	7.0	66.9
Sep 28			2,051	428	742	80	0	278	83	1		1	2	92.4	1.3	7.0	66.0
Sep 29			1,553	312	604	54	0	273	78	0		1	0	85.7	1.3	6.0	66.0
Sep 30			5,809	739	1,195	98	0	387	119	3		0	1	102.1	1.2	7.0	64.9
TOTAL			198,052	29,844	46,836	3,605	2	14,107	4,657	62		287	84				

AVG			6,602	995	1,561	120	0	470	155			10	3	91.3	1.3	6.8	69.6
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY	STURGEON
TOTALS TO DATE											
SPRING	54,656	6,728	54,228	4,474	63,046	69,958	34,891	99	7,459,145	19,431	123
SUMMER	51,050	8,885									
FALL	248,760	39,215									
TOTAL	354,466	54,828									

Note:

TABLE 15

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped						DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Oct 1			1,146	269	550	53		170	52	2	0		-1	0	101.3	1.2	7.0	64.0
Oct 2			1,605	279	634	48		243	61	1	0		0	0	97.6	1.3	7.0	64.0
Oct 3			1,427	198	575	48		258	82	0	0		-1	1	100.7	1.7	7.0	63.0
Oct 4			1,369	266	586	50		271	93	0	0		-1	0	85.5	1.3	7.0	63.0
Oct 5			2,063	357	635	54		334	113	0	0		-1	0	83.6	1.2	7.0	63.0
Oct 6			925	250	436	40		309	86	0	0		0	0	81.1	1.2	7.0	63.0
Oct 7			1,024	258	475	40		342	96	0	0		1	1	81.9	1.2	7.0	63.0
Oct 8			1,505	320	459	34		323	105	0	0		0	0	75.2	1.2	7.0	63.0
Oct 9			1,880	458	554	47		520	177	0	0		-12	2	113.2	1.2	7.0	62.0
Oct 10			1,078	318	611	43		394	136	0	1		1	0	105.4	1.2	7.0	62.0
Oct 11			1,152	337	643	54		355	125	1	0		0	2	107.3	1.2	7.0	60.0
Oct 12			309	92	494	22		241	59	0	0		0	0	75.7	1.2	7.0	59.0
Oct 13			362	146	628	57		358	127	0	0		0	0	87.0	1.1	7.0	59.0
Oct 14			505	151	501	51		225	73	0	0		0	0	90.2	1.3	6.0	58.0
Oct 15			1,065	278	586	52		341	99	0	0		-1	0	101.2	1.2	7.0	58.0
Oct 16			547	113	221	9		221	59	0	0		1	0	100.8	1.2	7.0	58.0
Oct 17			383	72	230	21		164	58	0	0		-1	1	95.8	1.2	7.0	58.0
Oct 18			1,005	108	570	30		163	52	0	0		-2	0	95.7	1.2	7.0	58.0
Oct 19			339	57	336	24		96	44	0	1		1	1	76.3	1.3	7.0	58.0
Oct 20			293	53	771	67		193	89	0	0		1	0	104.3	1.3	7.0	57.0
Oct 21			325	73	624	77		160	60	0	0		0	1	91.9	1.0	7.0	57.0
Oct 22			344	36	372	40		111	52	0	2		0	0	77.9	1.1	7.0	57.0
Oct 23			342	49	370	35		139	53	0	0		0	0	99.1	1.2	7.0	57.0
Oct 24			413	77	377	49		108	39	0	1		0	1	93.3	1.2	7.0	57.0
Oct 25			432	59	287	25		97	25	0	0		0	0	80.0	1.2	6.0	57.0
Oct 26			335	55	297	25		102	25	0	1		0	0	82.0	1.2	7.0	56.0
Oct 27			362	50	174	13		78	31	0	1		0	0	89.9	1.2	7.0	56.0
Oct 28			209	26	180	15		63	19	0	0		0	-1	101.2	1.2	7.0	55.0
Oct 29			381	58	1,451	165		103	46	0	2		0	0	120.1	1.1	7.0	55.0
Oct 30			64	14	137	12		30	12	0	3		0	0	109.3	0.9	7.0	53.0
Oct 31			42	20	378	47		33	5	1	2		0	-1	96.5	1.0	5.0	52.0
TOTAL			23,231	4,897	15,142	1,347		6,545	2,153	5	14		-15	8				

AVG			749	158	488	43		211	69	0	0		0	0	93.6	1.2	6.9	58.9
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RUN YEAR TOTALS TO DATE	CHINOOK		COHO	COHO	unclipped							
	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON
SPRING	54,656	6,728	69,370	5,821	63,046	76,503	37,044	104	14	7,459,145	19,416	131
SUMMER	51,050	8,885										
FALL	271,991	44,112										
TOTAL	377,697	59,725										

TABLE 16

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

NOVEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD									
Nov 1			136	30	247	42		32	13		6		0	0	94.1	1.0	5.0	52.0
Nov 2			170	17	296	27		38	12		10		0	0	114.4	1.1	5.0	51.0
Nov 3			220	23	142	11		17	7		5		0	0	83.9	1.0	7.0	51.0
Nov 4			464	31	498	31		30	5		7		0	0	129.0	1.0	5.0	51.0
Nov 5			1,399	76	142	11		21	11		3		0	-1	132.2	1.0	7.0	52.0
Nov 6			521	24	207	13		12	3		3		0	0	134.1	1.0	7.0	52.0
Nov 7			331	26	187	16		14	8		4		0	-1	133.9	1.0	5.0	52.0
Nov 8			123	12	57	7		11	1		12		-1	0	131.1	1.0	5.0	52.0
Nov 9			71	11	73	1		10	6		3		0	-1	128.1	1.0	5.0	52.0
Nov 10			61	5	87	8		8	3		7		0	0	127.1	1.0	5.0	51.0
Nov 11			44	8	48	2		11	5		7		0	1	132.0	1.0	7.0	51.0
Nov 12			20	0	20	5		4	1		3		0	-1	127.7	1.0	7.0	50.0
Nov 13			15	9	46	4		2	2		25		0	1	128.9	1.0	7.0	50.0
Nov 14			31	3	29	4		-2	1		18		0	1	130.3	1.0	7.0	50.0
Nov 15			34	2	16	4		5	0		11		0	0	126.0	1.0	7.0	50.0
Nov 16			37	2	26	4		8	1		20		0	0	126.4	1.0	6.0	50.0
Nov 17			19	-1	24	1		6	1		4		0	0	127.2	1.0	7.0	50.0
Nov 18			33	4	34	3		7	1		19		0	0	128.6	1.0	7.0	50.0
Nov 19			72	3	312	27		16	8		49		0	0	126.6	1.0	7.0	50.0
Nov 20			59	2	66	8		15	7		23		0	0	129.8	1.0	7.0	50.0
Nov 21			17	3	43	3		15	11		7		0	0	132.1	1.0	7.0	50.0
Nov 22			21	8	42	1		7	-2		8		0	0	129.4	1.0	7.0	50.0
Nov 23			7	1	19	2		10	4		2		0	-1	127.3	1.0	7.0	49.0
Nov 24			14	-1	4	5		4	1		3		0	0	124.2	1.0	7.0	49.0
Nov 25			9	1	11	1		9	2		5		0	0	121.8	1.0	6.0	49.0
Nov 26			7	2	5	2		5	2		1		0	0	124.7	1.0	7.0	49.0
Nov 27			29	-2	15	2		3	2		17		-2	0	123.8	1.0	6.0	48.0
Nov 28			21	8	21	-1		8	2		6		0	0	126.4	1.0	5.0	48.0
Nov 29			11	2	2	0		3	1		3		0	0	127.9	1.0	7.0	48.0
Nov 30			7	-2	2	0		1	1		0		0	0	133.4	0.9	7.0	47.0
TOTAL			4,003	307	2,721	244		330	120		291		-3	-2				
AVG			133	10	91	8		11	4		10		0	0	125.4	1.0	6.4	50.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON
TOTALS TO DATE												
SPRING	54,656	6,728	71,465	6,007	63,046	76,716	37,122	104	305	7,459,145	19,415	129
SUMMER	51,050	8,885										
FALL	275,631	44,389										
TOTAL	381,337	60,002										

Note: Official Fall Chinook run ended November 15. Counts on November 16-30 are not included in fall totals. Pink, chum, and sturgeon counts are totals for the entire calendar year.

TABLE 17

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

DECEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK								STEELHEAD	SECCHI
Dec 1			3	0	4	1		5	2	1				138.1	0.5	7.0	46.0
Dec 2			1	0	1	0		7	5	0				140.4	0.6	7.0	46.0
Dec 3			2	0	1	1		4	1	0				135.7	0.5	7.0	46.0
Dec 4			2	0	1	-1		6	4	0				136.1	0.6	7.0	46.0
Dec 5			1	0	3	1		5	2	1				136.3	0.5	7.0	46.0
Dec 6			2	-3	3	3		2	1	3				138.3	0.5	7.0	46.0
Dec 7			0	0	0	0		1	-2	0				128.1	0.5	6.0	45.0
Dec 8			1	0	18	0		3	0	0				124.5	0.5	7.0	45.0
Dec 9			4	0	12	4		1	1	0				126.3	0.3	7.0	45.0
Dec 10			2	0	1	-1		0	0	0				127.2	0.0	7.0	45.0
Dec 11			2	0	3	0		0	0	0				125.0	0.0	7.0	45.0
Dec 12			7	0	1	0		2	1	0				118.0	0.5	7.0	45.0
Dec 13			13	1	745	59		7	5	2				116.9	0.5	7.0	44.0
Dec 14			1	0	16	1		0	0	2				118.9	0.5	7.0	44.0
Dec 15			1	0	16	2		1	0	1				120.0	0.5	7.0	44.0
Dec 16			7	0	8	2		6	5	0				125.4	0.5	7.0	43.0
Dec 17			1	1	3	0		2	1	0				131.1	0.5	0.0	43.0
Dec 18			2	0	4	0		5	1	0				139.0	0.5	7.0	43.0
Dec 19			2	0	1	0		1	0	0				136.5	0.5	7.0	43.0
Dec 20			1	0	788	67		29	16	0				117.1	0.5	7.0	42.0
Dec 21			10	1	161	38		16	8	0				114.6	0.5	6.0	42.0
Dec 22			2	0	52	14		14	7	0				113.5	0.5	6.0	43.0
Dec 23			5	0	14	3		11	6	0				115.1	0.5	7.0	43.0
Dec 24			1	0	3	-1		2	1	0				116.7	0.5	7.0	43.0
Dec 25			0	0	3	0		7	5	0				120.8	0.5	7.0	43.0
Dec 26			-1	0	0	5		4	2	0				120.1	0.5	7.0	43.0
Dec 27			0	0	3	0		4	0	0				120.9	0.5	7.0	43.0
Dec 28			0	0	0	0		9	2	0				123.9	0.5	7.0	43.0
Dec 29			0	0	0	2		4	0	0				127.2	0.5	7.0	43.0
Dec 30			0	0	0	0		2	1	0				125.7	0.6	7.0	43.0
Dec 31			0	0	1	0		10	5	0				126.0	0.5	7.0	43.0
TOTAL			72	0	1,866	200		170	80	10							
AVG			2	0	60	6		5	3					125.9	0.5	6.7	44.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON
TOTALS TO DATE												
SPRING	54,656	6,728	71,465	6,007	63,046	76,716	37,122	104	315	7,459,145	19,415	129
SUMMER	51,050	8,885										
FALL	275,631	44,389										
TOTAL	381,337	60,002										

Note: December 1 to 31 counts were from video review. The counts are 16-hour counts and occurred between 0400-2000 PST. Visual counting ended November 30. Official Fall Chinook run ended November 15. December counts were not added to fall totals. Pink, chum, and sturgeon counts are totals for the entire calendar year.

TABLE 18

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - NIGHT FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped		PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK			STEELHEAD	STEELHEAD			
May 1													
May 2													
May 3													
May 4													
May 5													
May 6													
May 7													
May 8													
May 9													
May 10													
May 11													
May 12													
May 13													
May 14													
May 15	140			3				0	0				0
May 16	116			26				4	1				8
May 17	123			21				0	0				-2
May 18	63			11				0	0				-2
May 19	24			3				0	0				10
May 20	15			-1				1	0				30
May 21	24			0				1	1				20
May 22	19			3				2	0				5
May 23	9			1				2	0				6
May 24	14			5				-1	-1				9
May 25	8			1				1	1				18
May 26	5			0				1	1				9
May 27	9			1				0	0				16
May 28	6			1				0	0				40
May 29	7			0				0	0				72
May 30	13			1				1	0				85
May 31	11			3				0	0				113
TOTAL	606			79				12	3				437
AVG	36			5				1	0				26

Note: night counts are video counts from 2000 to 0400 PST.

TABLE 19

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - NIGHT FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT			JACK			
Jun 1		23		1		0	3	2			243
Jun 2		21		2		0	2	0			168
Jun 3		12		0		0	0	0			230
Jun 4		7		2		1	0	1			132
Jun 5		22		1		6	0	1			139
Jun 6		10		3		3	2	0			19
Jun 7		22		1		3	0	0			43
Jun 8		33		0		7	4	2			100
Jun 9		20		1		4	1	1			247
Jun 10		30		2		9	1	1			303
Jun 11		34		4		18	1	1			376
Jun 12		58		5		26	6	3			459
Jun 13		79		1		17	3	1			371
Jun 14		25		2		20	1	-1			544
Jun 15		56		4		44	12	3			706
Jun 16		37		4		52	3	1			310
Jun 17		49		6		141	3	0			1,041
Jun 18		53		10		163	1	-4			1,324
Jun 19		26		1		82	8	3			604
Jun 20		25		2		117	6	3			254
Jun 21		39		10		146	12	7			355
Jun 22		33		12		112	8	2			353
Jun 23		30		7		200	4	4			318
Jun 24		28		0		166	7	4			209
Jun 25		28		2		117	0	-1			467
Jun 26		13		1		92	5	2			659
Jun 27		19		0		109	4	0			387
Jun 28		29		3		144	8	4			494
Jun 29		28		0		141	6	4			338
Jun 30		26		1		123	5	3			272
TOTAL		915		88		2,063	116	47			11,465
AVG		31		3		69	4	2			382

Note: night counts are video counts from 2000 to 0400 PST.

TABLE 20

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - NIGHT FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK			STEELHEAD			
Jul 1		13		1	0	0	46	8	3			217
Jul 2		11		0	0	0	69	8	2			200
Jul 3		12		3	0	0	64	7	2			393
Jul 4		12		3	0	0	72	9	6			184
Jul 5		12		2	0	0	118	6	0			541
Jul 6		3		0	0	0	83	5	5			413
Jul 7		7		4	0	0	85	5	7			539
Jul 8		11		2	0	0	79	15	10			318
Jul 9		26		0	0	0	63	14	1			1,023
Jul 10		7		2	0	0	49	8	3			363
Jul 11		16		1	0	0	58	18	14			380
Jul 12		6		2	0	0	37	4	3			247
Jul 13		14		3	0	0	46	6	7			1,263
Jul 14		7		4	0	0	27	10	4			839
Jul 15		16		2	0	0	26	10	5			-129
Jul 16		12		0	0	0	45	14	9			112
Jul 17		4		0	0	0	32	18	15			137
Jul 18		2		0	0	0	36	7	3			143
Jul 19		5		0	0	0	20	2	2			468
Jul 20		16		1	0	0	23	4	1			692
Jul 21		12		1	0	0	21	5	3			363
Jul 22		14		0	0	0	13	21	13			246
Jul 23		5		0	0	0	14	10	4			715
Jul 24		3		1	1	0	14	7	6			989
Jul 25		12		2	0	0	10	5	8			716
Jul 26		17		2	0	0	4	16	13			439
Jul 27		12		1	0	3	6	21	11			105
Jul 28		36		11	0	0	3	76	42			146
Jul 29		6		0	2	0	2	34	20			208
Jul 30		6		1	0	0	6	10	9			15
Jul 31		18		4	1	0	2	31	18			144
TOTAL		353		53	4	3	1,173	414	249			12,429
AVG		11		2	0	0	38	13	8			401

Note: night counts are video counts from 2000 to 0400 PST.

TABLE 21

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - NIGHT FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT			JACK			
Aug 1			8	5	0	0	2	16	9		411
Aug 2			7	1	0	0	0	5	7		154
Aug 3			26	5	0	0	1	31	20		275
Aug 4			28	0	0	0	2	24	19		138
Aug 5			24	0	0	0	0	21	24		88
Aug 6			31	3	0	0	0	35	32		192
Aug 7			24	2	0	0	1	20	29		157
Aug 8			13	2	0	0	2	10	6		180
Aug 9			36	16	0	0	-1	21	18		127
Aug 10			29	9	0	0	1	24	19		274
Aug 11			59	8	0	0	1	26	13		193
Aug 12			81	6	0	0	0	26	27		93
Aug 13			60	1	0	0	1	22	16		439
Aug 14			47	4	0	0	0	45	38		514
Aug 15			31	0	0	0	-1	6	-3		386
Aug 16			51	8	0	0	1	29	18		314
Aug 17			54	4	0	0	0	20	14		227
Aug 18			53	11	0	0	0	17	7		61
Aug 19			61	13	0	0	0	29	15		147
Aug 20			51	22	1	0	0	19	9		138
Aug 21			145	30	4	4	0	23	7		164
Aug 22			122	31	8	4	0	5	-4		218
Aug 23			129	20	13	5	0	11	5		81
Aug 24			55	15	6	0	0	11	8		128
Aug 25			250	92	17	2	0	20	10		142
Aug 26			126	6	12	1	0	13	7		33
Aug 27			162	25	54	5	0	35	14		1
Aug 28			169	12	7	4	0	18	8		50
Aug 29			338	40	28	3	0	49	23		83
Aug 30			721	73	158	25	0	129	68		93
Aug 31			316	32	59	10	-1	35	15		118
TOTAL			3,307	496	367	63	9	795	498		5,619

AVG 107 16 12 2 0 26 16 181

Note: night counts are video counts from 2000 to 0400 PST.

TABLE 22

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - NIGHT FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT			JACK			
Sep 1			421	48	98	13	0	89	14		100
Sep 2			669	-3	33	1	2	59	13		11
Sep 3			702	45	70	4	3	39	6		7
Sep 4			485	57	136	37	0	34	12		31
Sep 5			549	101	110	32	0	49	16		44
Sep 6			358	73	72	23	0	45	13		27
Sep 7			221	58	55	17	0	19	7		-2
Sep 8			1,021	205	234	31	0	40	12		8
Sep 9			710	252	113	19	0	30	7		-5
Sep 10			189	62	56	25	0	39	12		-3
Sep 11			488	180	90	30	0	39	14		24
Sep 12			2,773	313	542	161	0	94	30		11
Sep 13			795	144	275	65	0	105	20		17
Sep 14			344	75	197	22	0	67	22		17
Sep 15			665	63	183	14	0	67	23		2
Sep 16			430	64	125	46	0	67	26		2
Sep 17			847	69	180	19	0	83	25		-4
Sep 18			584	61	165	10	0	56	16		2
Sep 19			163	11	55	1	0	48	12		6
Sep 20			161	17	36	5	0	32	8		-2
Sep 21			141	7	30	0	0	33	4		3
Sep 22			189	22	79	0	0	19	8		0
Sep 23			57	14	16	5	0	22	4		2
Sep 24			107	8	43	1	0	26	7		4
Sep 25			191	27	70	11	0	18	5		2
Sep 26			98	6	56	0	0	21	9		6
Sep 27			43	10	26	2	0	18	3		-3
Sep 28			36	8	38	2	0	7	1		2
Sep 29			13	4	15	2	0	12	3		-1
Sep 30			72	16	21	5	0	20	4		-2
TOTAL			13,522	2,017	3,219	603	5	1,297	356		306
AVG			451	67	107	20	0	43	12		10

Note: night counts are video counts from 2000 to 0400 PST.

TABLE 23a

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM

1938 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
1938	271,799	107,003	75,040	15,185	2,117	0	471,144
1939	286,189	122,032	73,382	14,383	1,168	0	497,154
1940	391,587	185,174	148,807	11,917	1,729	0	739,214
1941	461,443	118,089	65,741	17,911	5,269	4	668,457
1942	401,998	151,800	55,464	12,402	1,865	11	623,540
1943	313,123	92,133	39,845	2,547	788	0	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	0	433,732
1961	281,980	139,719	17,111	3,456	896	12	443,174
1962	286,625	164,025	28,179	14,788	1,013	27	494,657
1963	278,560	129,418	60,319	12,658	739	34	481,728
1964	344,422	117,252	99,856	53,602	632	45	615,809
1965	317,957	166,453	55,125	76,032	496	64	616,127
1966	340,111	143,661	156,661	71,891	872	58	713,254
1967	366,237	121,872	144,158	96,488	352	50	729,157
1968	341,154	106,974	108,207	63,488	79	21	619,923
1969	507,543	140,782	59,636	49,378	143	86	757,568
1970	384,780	113,510	70,762	80,116	209	150	649,527
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	0	679,348
1978	394,600	104,431	18,436	52,590	28	0	570,085
1979	276,306	113,979	52,628	45,328	1	23	488,265
1980	245,518	129,254	58,882	22,052	44	0	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	0	604,512
1983	244,346	218,439	100,545	15,173	50	52	578,605
1984	324,425	315,560	152,541	29,487	64	8	822,085
1985	463,873	343,987	166,340	56,857	97	147	1,031,301

TABLE 23a
(continued)

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM
1938 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
1986	570,881	379,891	58,123	130,853	77	23	1,139,848
1987	547,494	303,081	116,993	27,635	147	20	995,370
1988	494,025	279,072	79,714	39,620	60	6	892,497
1989	416,117	287,798	41,884	39,281	16	12	785,108
1990	340,990	183,027	49,581	24,845	26	0	598,469
1991	274,622	274,545	76,481	64,057	5	550	690,260
1992	256,299	314,975	84,992	18,126	39	24	674,455
1993	277,657	188,386	80,178	11,732	17	15	557,985
1994	244,320	163,124	13,154	22,794	26	5	443,423
1995	245,250	209,071	9,135	12,572	30	36	476,094
1996	299,962	212,475	31,093	19,077	22	1	562,630
1997	399,784	274,536	48,342	27,919	47	64	750,692
1998	290,292	197,501	13,613	49,488	21	13	550,928
1999	347,486	212,118	18,304	45,805	43	28	623,784
2000	501,012	282,935	97,541	99,660	17	0	981,165
2001	1,037,440	676,793	123,416	277,934	29	-4	2,115,608
2002	965,356	510,680	51,200	100,835	72	0	1,628,143
2003	996,660	365,821	39,291	133,874	411	637	1,536,694
2004	906,197	313,378	123,291	119,851	80	1	1,462,798
2005	600,415	315,650	72,971	88,791	139	22	1,077,988
2006	526,538	339,301	37,066	110,054	165	6	1,013,130
2007	359,867	325,450	24,376	100,725	142	27	810,587
2008	587,428	357,845	213,607	146,059	75	60	1,305,074
2009	699,121	604,970	177,823	234,669	109	95	1,716,787
2010	902,439	416,603	386,524	127,644	124	4	1,833,338
2011	863,201	369,365	185,796	149,883	50	3,828	1,572,123
2012	733,930	235,303	515,673	60,023	65	1	1,544,995
2013	1,327,783	240,110	197,826	68,651	167	520	1,835,057
2014	1,363,284	338,533	656,103	302,559	122	1	2,660,602
2015	1,497,536	276,422	545,196	43,128	176	55	2,362,513
2016	799,259	194,364	357,863	48,249	47	3	1,399,785
2017	574,012	121,487	90,027	82,327	21	42	867,916
2018	389,228	2,634	204,930	50,095	180	4	647,071
2019	463,241	79,954	66,296	84,486	316	104	694,397
Total	38,114,652	17,103,576	9,246,766	4,363,239	41,490	7,673	68,877,396
10-Year Average	891,391	227,478	320,623	101,705	127	456	1,541,780

*Jacks included

Note: Totals from 1994 - 2003 include nighttime video and 24-hour video as described in the footnotes of the monthly count tables. Totals for 2013-19 include nighttime video counts.

TABLE 23b

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM -- DAYTIME COUNTS

1938 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
1938	271,799	107,003	75,040	15,185	2,117	0	471,144
1939	286,189	122,032	73,382	14,383	1,168	0	497,154
1940	391,587	185,174	148,807	11,917	1,729	0	739,214
1941	461,443	118,089	65,741	17,911	5,269	4	668,457
1942	401,998	151,800	55,464	12,402	1,865	11	623,540
1943	313,123	92,133	39,845	2,547	788	0	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	0	433,732
1961	281,980	139,719	17,111	3,456	896	12	443,174
1962	286,625	164,025	28,179	14,788	1,013	27	494,657
1963	278,560	129,418	60,319	12,658	739	34	481,728
1964	344,422	117,252	99,856	53,602	632	45	615,809
1965	317,957	166,453	55,125	76,032	496	64	616,127
1966	340,111	143,661	156,661	71,891	872	58	713,254
1967	366,237	121,872	144,158	96,488	352	50	729,157
1968	341,154	106,974	108,207	63,488	79	21	619,923
1969	507,543	140,782	59,636	49,378	143	86	757,568
1970	384,780	113,510	70,762	80,116	209	150	649,527
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	0	679,348
1978	394,600	104,431	18,436	52,590	28	0	570,085
1979	276,306	113,979	52,628	45,328	1	23	488,265
1980	245,518	129,254	58,882	22,052	44	0	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	0	604,512
1983	244,346	218,439	100,545	15,173	50	52	578,605
1984	324,425	315,560	152,541	29,487	64	8	822,085
1985	463,873	343,987	166,340	56,857	97	147	1,031,301

TABLE 23b
(continued)

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM -- DAYTIME COUNTS
1938 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
1986	570,881	379,891	58,123	130,853	77	23	1,139,848
1987	547,494	303,081	116,993	27,635	147	20	995,370
1988	494,025	279,072	79,714	39,620	60	6	892,497
1989	416,117	287,798	41,884	39,281	16	12	785,108
1990	340,990	183,027	49,581	24,845	26	0	598,469
1991	274,622	274,545	76,481	64,057	5	550	690,260
1992	256,299	314,975	84,992	18,126	39	24	674,455
1993	277,657	188,386	80,178	11,732	17	15	557,985
1994	243,450	161,978	12,678	22,794	26	5	440,931
1995	240,050	202,448	8,774	12,034	30	36	463,372
1996	296,635	205,213	30,252	18,747	22	1	550,870
1997	387,088	258,385	47,008	27,267	47	64	719,859
1998	280,944	185,094	13,218	49,920	21	13	529,210
1999	343,176	206,488	17,877	45,152	43	28	612,764
2000	491,905	275,178	93,398	97,032	17	0	957,530
2001	971,119	633,073	114,934	266,314	29	-4	1,985,465
2002	924,679	480,309	49,610	94,901	72	0	1,549,571
2003	996,660	365,821	39,291	133,874	411	637	1,536,694
2004	906,197	313,378	123,291	119,851	80	1	1,462,798
2005	600,415	315,650	72,971	88,791	139	22	1,077,988
2006	526,538	339,301	37,066	110,054	165	6	1,013,130
2007	359,867	325,450	24,376	100,725	142	27	810,587
2008	587,428	357,845	213,607	146,059	75	60	1,305,074
2009	699,121	604,970	177,823	234,669	109	95	1,716,787
2010	902,439	416,603	386,524	127,644	124	4	1,833,338
2011	863,201	369,365	185,796	149,883	50	3,828	1,572,123
2012	733,930	235,303	515,673	60,023	65	1	1,544,995
2013	1,300,711	234,047	185,505	66,758	167	508	1,787,696
2014	1,339,659	326,001	614,179	294,534	122	1	2,574,496
2015	1,450,683	268,730	510,706	42,267	176	55	2,272,617
2016	774,172	188,146	342,498	47,509	47	3	1,352,375
2017	555,440	117,878	87,693	80,756	21	42	841,830
2018	379,823	102,920	193,816	49,467	180	4	726,210
2019	441,805	77,320	63,046	80,227	316	104	662,818
Total	37,790,746	17,034,047	9,107,919	4,323,339	41,490	7,661	68,305,202
10-Year Average	874,186	233,631	308,544	99,907	127	455	1,516,850

*Jacks included

Note: These totals are for daytime counts and do not include night counting or 24 hour video counts.

TABLE 24

MONTHLY COUNT OF CHINOOK SALMON												BONNEVILLE DAM - 1938 - 2019			SPRING	SUMMER	FALL
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	Jan 1- May 31	Jun 1- Jul 31	Aug 1- Dec 31	
1938					22,371	8,221	6,556	34,765	197,294	2,302	263	27	271,799	22,371	14,777	234,651	
1939	6	12	121	51,410	25,159	5,602	17,828	32,909	150,851	2,197	78	16	286,189	76,708	23,430	186,051	
1940			504	37,253	28,621	7,027	14,938	58,643	240,515	3,765	287	34	391,587	66,378	21,965	303,244	
1941	4		1,360	51,486	19,445	7,013	9,395	12,590	351,967	7,179	866	138	461,443	72,295	16,408	372,740	
1942	1	15	34	9,506	30,915	11,816	12,821	27,581	303,995	4,485	639	190	401,998	40,471	24,637	336,890	
1943	11	6	43	12,172	53,268	5,440	8,044	28,985	201,414	3,354	365	21	313,123	65,500	13,484	234,139	
1944	1	2	65	15,671	15,127	4,363	8,241	55,468	139,254	2,388	164	20	240,764	30,866	12,604	197,294	
1945	6	4	81	17,148	26,276	11,293	16,317	32,254	189,675	4,281	137	6	297,478	43,515	27,610	226,353	
1946	1	2	25	14,196	53,313	30,253	20,967	45,422	277,152	4,523	173	25	446,052	67,537	51,220	327,295	
1947		2	141	83,520	49,899	25,502	13,358	43,062	260,385	3,945	526	37	480,377	133,562	38,860	307,955	
1948	10		251	21,205	20,262	44,137	23,100	35,934	270,238	3,928	467	23	419,555	41,728	67,237	310,590	
1949			5	5,765	44,304	24,232	22,500	41,500	137,599	1,571	215	6	277,697	50,074	46,732	180,891	
1950			21	6,630	50,638	16,667	32,937	40,462	205,521	4,356	143		357,375	57,289	49,604	250,482	
1951			32	28,801	86,055	54,889	24,394	33,785	97,131	6,489	212		331,788	114,888	79,283	137,617	
1952			255	8,130	107,807	62,491	21,800	82,290	135,053	2,576	477		420,879	116,192	84,291	220,396	
1953			1,254	126,450	42,583	27,228	30,593	27,398	75,145	1,495	333		332,479	170,287	57,821	104,371	
1954		2	657	82,877	51,230	46,801	32,596	24,969	80,426	1,189	200		320,947	134,766	79,397	106,784	
1955			1,391	84,436	85,769	45,502	37,437	32,833	70,558	1,803	124		359,853	171,596	82,939	105,318	
1956			161	8,850	54,438	64,262	36,938	42,203	92,030	1,854	179	2	300,917	63,449	101,200	136,268	
1957			328	90,984	45,128	104,243	30,790	34,829	95,457	1,352	175		403,286	136,440	135,033	131,813	
1958			468	15,361	59,377	74,375	27,524	19,735	227,504	1,948	127		426,419	75,206	101,899	249,314	
1959			182	26,944	34,007	39,581	49,371	24,945	168,187	1,643	168		345,028	61,133	88,952	194,943	
1960			184	37,064	32,349	65,247	19,923	22,719	76,327	2,012	224		256,049	69,597	85,170	101,282	
1961			476	72,526	25,693	41,302	25,159	22,675	90,688	3,108	353		281,980	98,695	66,461	116,824	
1962			1,278	56,201	33,637	52,392	25,093	23,526	91,320	2,759	419		286,625	91,116	77,485	118,024	
1963			2,802	43,859	28,810	36,836	27,178	28,586	104,415	5,571	503		278,560	75,471	64,014	139,075	
1964			2,418	69,031	19,979	35,814	44,717	26,546	141,525	4,157	235		344,422	91,428	80,531	172,463	
1965			1,238	47,083	35,945	38,482	37,515	38,727	112,664	6,074	229		317,957	84,266	75,997	157,694	
1966			2,168	92,637	17,864	40,233	31,764	20,608	128,421	6,052	364		340,111	112,669	71,997	155,445	
1967			1,620	71,957	11,358	41,847	53,812	25,760	154,323	5,405	155		366,237	84,935	95,659	185,643	
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		507,773	113,448	69,013	325,312	
1977			3,569	98,710	17,229	21,790	19,233	21,992	171,303	11,805	1,026		366,657	119,508	41,023	206,126	
1978			4,291	100,712	44,860	27,125	17,198	23,513	165,411	11,104	386		394,600	149,863	44,323	200,414	
1979			790	29,751	20,921	15,924	18,293	41,273	142,241	6,865	248		276,306	51,462	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	25,423	31,154	12,793	10,665	26,147	116,879	20,458	683		244,346	56,721	23,458	164,167	
1984			351	27,185	23,509	13,060	15,447	41,909	180,867	21,673	424		324,425	51,045	28,507	244,873	
1985			2,036	52,145	36,780	16,763	13,107	64,899	255,020	22,099	1,024		463,873	90,961	29,870	343,042	

TABLE 24

(Continued)

MONTHLY COUNT OF CHINOOK SALMON													SPRING	SUMMER	FALL	
BONNEVILLE DAM - 1938-2019													TOTAL*	Jan 1- May 31	Jun 1- Jul 31	Aug 1- Dec 31
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
1986			2,292	82,356	38,395	18,365	12,676	38,737	337,721	39,511	828		570,881	123,043	31,041	416,797
1987			2,727	68,866	30,214	22,728	14,979	82,500	298,865	25,614	1,001		547,494	101,807	37,707	407,980
1988			2,663	69,689	22,394	18,191	18,333	111,905	236,662	13,656	532		494,025	94,746	36,524	362,755
1989			36	56,583	30,640	15,659	17,316	102,573	181,691	11,218	401		416,117	87,259	32,975	295,883
1990			677	67,536	28,039	16,990	11,031	59,066	149,404	8,015	232		340,990	96,252	28,021	216,717
1991			601	41,431	19,196	12,755	9,198	21,959	159,068	10,116	298		274,622	61,228	21,953	191,441
1992			2,188	68,073	20,321	11,871	7,374	28,537	107,620	10,043	272		256,299	90,582	19,245	146,472
1993			226	77,174	34,772	15,968	7,648	37,893	97,693	6,036	247		277,657	112,172	23,616	141,869
1994			505	13,499	6,562	9,743	10,458	47,787	145,801	9,669	296		244,320	20,566	20,201	203,553
1995			206	7,144	5,511	8,565	9,226	47,145	150,990	15,614	835	14	245,250	12,861	17,791	214,598
1996	4		110	20,923	35,571	11,136	7,768	58,909	154,420	10,451	647	23	299,962	56,608	18,904	224,450
1997			466	67,577	49,921	20,162	10,943	82,123	158,589	9,488	516	-1	399,784	117,964	31,105	250,715
1998	0	1	695	24,549	14,587	14,500	10,396	58,135	155,716	11,308	398	7	290,292	39,832	24,896	225,564
1999			2	251	19,016	28,831	14,830	16,121	66,546	186,880	14,624	378	347,486	48,100	30,951	268,435
2000		4	3,166	130,193	71,222	25,864	19,209	100,658	139,073	11,380	227	16	501,012	204,585	45,073	251,354
2001	0	25	16,653	324,800	98,080	53,860	45,825	116,981	351,892	25,875	3,379	70	1,037,440	439,558	99,685	498,197
2002	74	207	4,160	156,379	128,894	91,120	47,111	152,200	358,941	20,509	5,506	255	965,356	289,714	138,231	537,411
2003	6	93	19,283	120,626	70,020	81,333	46,833	90,884	533,913	30,440	2,827	402	996,660	210,028	128,166	658,466
2004		17	593	104,978	73,605	69,622	35,410	111,550	473,727	34,858	1,760	77	906,197	179,193	105,032	621,972
2005	-1	2	43	31,504	46,793	52,917	30,786	47,880	363,426	25,199	1,855	11	600,415	78,341	83,703	438,371
2006	0	1	35	7,030	92,300	71,473	30,401	55,410	236,605	28,653	4,536	94	526,538	99,366	101,874	325,298
2007	1	1	75	31,919	51,256	39,619	21,949	53,174	136,977	23,968	893	35	359,867	83,252	61,568	215,047
2008		3	170	40,547	102,419	67,117	22,775	115,815	222,385	15,479	710	8	587,428	143,139	89,892	354,397
2009	-5	0	164	23,526	157,489	88,523	30,829	148,358	231,702	17,823	697	15	699,121	181,174	119,352	398,595
2010	3	2	482	134,447	122,101	82,577	30,630	102,676	395,450	32,845	1,184	42	902,439	257,035	113,207	532,197
2011	0	13	161	35,139	182,779	107,352	52,378	68,563	372,184	43,169	1,408	55	863,201	218,092	159,730	485,379
2012	2	-1	39	23,702	141,939	62,450	31,448	86,278	355,800	31,073	1,169	31	733,930	165,681	93,898	474,351
2013		6	282	30,709	86,168	79,375	39,908	233,202	752,978	74,597	3,452	34	1,300,711	117,165	119,283	1,064,263
2014	5		539	79,330	134,303	86,196	48,880	94,236	824,408	69,438	2,275	49	1,339,659	214,177	135,076	990,406
2015		9	1,679	139,344	92,762	113,020	66,445	153,178	770,647	108,532	4,889	178	1,450,683	233,794	179,465	1,037,424
2016	7	5	230	34,636	113,482	84,051	46,374	141,622	330,003	22,076	1,656	30	774,172	148,360	130,425	495,387
2017		1	15	3,357	98,361	66,919	31,773	58,495	260,765	32,105	3,578	71	555,440	101,734	98,692	355,014
2018	2	0	21	6,307	88,020	46,985	18,421	56,313	142,313	19,615	1,756	70	379,823	94,350	65,406	220,067
2019	0	0	44	4,716	56,625	39,653	20,282	60,079	227,896	28,128	4,310	72	441,805	61,385	59,935	320,485
TOTAL	138	436	104,070	4,595,587	4,314,557	3,155,403	2,073,258	4,520,362	17,923,243	1,182,335	71,003	2,210	37,942,602	9,014,788	5,228,661	23,699,153
10-Year Average			349	49,169	111,654	76,858	38,654	105,464	443,244	46,158	2,568		874,186	161,177	115,512	597,497

*Jacks included

1994 counts include nighttime video counts during the hours of 2100-0500 PST June 1 - August 16.

1995 counts include nighttime video counts during the hours of 2000 and 0400 PST April 1 - November 15. 24 hour counts November 16 - December 31.

1996 - 2002 counts include 24 hour video counts January 1 - March 15 and November 16 - Dec 31.

From March 16 through November 15, video counts took place between 2000 and 0400 hours PST.

2003 - 2014 counts include 16 hour video counts between 0400-2000 PST January 1 - March 31 and November 1 - December 31.

2015-2019 visual fish counting extended to November 30. Video counts between 0400-2000 PST January 1 - March 31 and December 1-31.

TABLE 25

MONTHLY COUNT OF SOCKEYE SALMON

BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1938					1,025	17,811	53,864	2,097	235	6	2		75,040
1939				48	189	29,386	43,124	616	19				73,382
1940					206	59,639	85,885	3,063	13	1			148,807
1941				299	1,052	23,536	39,193	1,615	46				65,741
1942					13	12,624	41,301	1,477	49				55,464
1943					9	4,525	33,613	1,697	1				39,845
1944			1		16	3,099	11,171	659	126				15,072
1945			10	51	521	1,507	6,903	498	10	1			9,501
1946				9	67	7,815	64,715	1,747	21	2			74,376
1947					5	59,378	108,175	3,564	15	1		1	171,139
1948						12,023	117,652	1,849	13	4			131,541
1949					151	9,013	41,619	655	6				51,444
1950					341	75,784	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
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						52,134	48,004	400	5	2			100,545
1984					6	106,892	45,141	494	7	1			152,541
1985				3	13	112,054	53,842	422	4	2			166,340

TABLE 25

(Continued)

MONTHLY COUNT OF SOCKEYE SALMON

BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1986					2	27,303	30,279	475	63	1			58,123
1987					1	75,674	40,930	383	5				116,993
1988					11	44,409	35,168	121	5				79,714
1989					3	24,638	17,000	231	11	1			41,884
1990						26,141	23,244	195	1				49,581
1991						22,318	53,699	457	7				76,481
1992					20	54,292	30,409	271					84,992
1993					7	49,667	30,377	127					80,178
1994					2	9,835	3,306	11					13,154
1995					1	5,924	3,151	59					9,135
1996					3	23,005	8,044	41					31,093
1997					9	23,559	24,392	381	1				48,342
1998					1	7,796	5,723	93					13,613
1999						8,613	9,629	61	1				18,304
2000					146	83,479	13,847	69	0				97,541
2001					32	102,570	20,496	317	1				123,416
2002					3	32,760	18,349	85	3				51,200
2003					2	26,432	12,714	139	4				39,291
2004					134	100,702	22,253	194	3		5		123,291
2005					16	47,093	25,724	118	20				72,971
2006					9	27,398	9,518	129	12				37,066
2007					36	18,742	5,487	107	4				24,376
2008					53	188,756	24,735	46	17				213,607
2009					57	141,543	36,117	104	2				177,823
2010				1	169	297,778	88,415	156	5				386,524
2011				1	8	87,794	97,798	195					185,796
2012					80	382,529	132,889	170	5				515,673
2013					60	114,293	70,593	554	5				185,505
2014	2			2	50	316,243	296,595	1,276	11				614,179
2015		1			314	357,048	151,589	1,685	67	3	-1		510,706
2016	1				451	283,893	57,186	955	9	2	1		342,498
2017					68	62,372	24,971	274	8				87,693
2018					40	143,354	50,079	339	4				193,816
2019					26	44,672	18,114	232	2				63,046
TOTAL	3	1	76	545	9,692	4,885,208	4,177,034	50,424	2,805	142	37	1	9,125,968
10-Year Average					127	208,998	98,823	584	13				308,544

1994 counts include nighttime video counts during the hours of 2100-0500 PST June 1 - August 16.

1995 counts include nighttime video counts during the hours of 2000 and 0400 PST April 1 through November 15.

24 hour counts November 16 - December 31.

1996 - 2002 counts include 24 hour video counts January 1 - March 15 and November 16 - Dec 31.

From March 16 - November 15, video counts took place between 2000 and 0400 hours PST.

2003-2014 counts include video counts which took place between 0400-2000 PST January 1 - March 31 and November 1- December 31.

2015-2019 Visual counting extended to November 30. Video counts between 0400-2000 PST January 1 - March 31 and December 1-31.

TABLE 26
MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM 1938 - 1919

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	JACKS
1938	3							3,070	10,995	972	141	7	15,188	
1939	3							1,811	12,226	310	15	18	14,383	
1940	2							1,451	10,212	213	33	5	11,916	
1941								1,317	16,061	369	160	2	17,909	
1942								1,193	11,062	147			12,402	
1943								762	1,676	89	20		2,547	
1944								1,052	3,021	103	29	2	4,207	
1945							2	239	533	15		1	790	
1946		10	4				22	228	3,609	1		24	3,898	
1947	12	2	1					217	10,928	10	3	1	11,174	
1948	1						11	158	3,893	10	3	5	4,081	
1949							17	270	703	5	8	1	1,004	
1950								1,570	8,545	36			10,151	
1951								197	4,773	225	6		5,201	
1952							10	2,581	5,131	22	24		7,768	
1953							1	7,094	5,890	22	11		13,018	
1954								668	3,319	74	1		4,062	
1955								443	3,188	94			3,725	
1956							7	1,158	4,879	83			6,127	
1957								1,564	3,046	63	2		4,675	
1958								341	3,220	99	13		3,673	
1959								122	2,551	22			2,695	
1960								538	2,502	224	4		3,268	
1961								277	2,867	306	6		3,456	
1962							1	1,116	13,091	543	37		14,788	
1963							4	1,071	8,664	2,724	195		12,658	
1964							23	3,776	46,535	3,069	199		53,602	
1965						2	21	5,911	61,335	8,566	197		76,032	
1966						46	874	4,921	59,457	6,361	232		71,891	34,919
1967						33	715	3,814	87,254	4,560	112		96,488	47,893
1968						48	124	10,450	50,900	1,868	98		63,488	20,435
1969						38	443	4,671	41,176	2,998	52		49,378	25,216
1970						2	128	6,604	70,631	2,631	120		80,116	25,248
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							44	319	7,237	5,020	2,553		15,173	6,775
1984							41	1,394	20,174	6,229	1,649		29,487	12,728
1985			1			7	92	3,977	46,749	5,670	361		56,857	18,307

TABLE 26

(Continued)

MONTHLY COUNT OF COHO SALMON

BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	JACKS
1986							181	2,502	110,714	14,436	3,020		130,853	22,204
1987							464	2,364	21,002	3,556	249		27,635	9,713
1988							78	3,377	26,303	8,614	1,248		39,620	12,566
1989							60	2,353	24,089	9,543	3,236		39,281	11,863
1990							9	587	18,202	5,230	817		24,845	13,218
1991							5	941	46,331	13,713	3,067		64,057	5,189
1992							19	222	10,304	5,953	1,628		18,126	3,757
1993							15	448	8,191	2,786	292		11,732	1,090
1994							5	1,608	12,521	8,239	421		22,794	2,503
1995							118	978	7,049	3,969	458		12,572	1,639
1996							66	431	10,413	7,775	392		19,077	3,010
1997							22	1,441	19,412	6,755	289		27,919	3,206
1998							13	896	35,245	13,047	282	5	49,488	3,630
1999		19				1	3	951	34,901	9,673	252	5	45,805	4,468
2000							3	13,348	55,550	29,698	949	112	99,660	11,383
2001	15					2	145	34,112	205,352	34,401	3,907		277,934	6,781
2002							6	4,742	54,917	38,184	2,803	183	100,835	6,817
2003							10	11,389	86,621	35,516	334	4	133,874	8,127
2004	1						0	11,171	78,512	29,544	622	1	119,851	4,809
2005							0	3,487	64,253	20,414	637	0	88,791	5,486
2006							1	12,771	58,048	35,014	4,192	28	110,054	7,943
2007	-2						6	8,888	55,968	32,607	3,200	58	100,725	12,531
2008	-1						2	8,335	84,639	51,771	1,309	4	146,059	68,486
2009	-4						7	37,438	104,294	89,979	2,936	19	234,669	9,776
2010	-11	0					1	7,365	53,947	62,961	3,255	126	127,644	6,933
2011		0					6	12,870	108,156	28,202	644	5	149,883	4,572
2012							3	6,162	37,556	15,345	951	6	60,023	5,039
2013							0	5,871	31,618	25,345	3,758	166	66,758	7,097
2014	3						0	6,085	185,680	85,640	16,840	286	294,534	14,803
2015							1	3,029	27,481	8,122	3,431	203	42,267	4,865
2016								2,807	30,250	13,491	952	9	47,509	5,489
2017								3,088	47,178	25,314	4,923	253	80,756	4,820
2018							3	7,331	26,965	9,940	3,187	2,041	49,467	8,579
2019	5						10	8,251	50,441	16,489	2,965	2,066	80,227	6,265
TOTAL	27	31	6	1	0	179	5,557	372,292	2,920,505	941,532	99,486	5,646	4,345,262	737,975
10 Year Average							3	6,286	59,927	29,085	4,091		99,907	6,846

*Jacks included

Notes:

1995 counts include nighttime video counts during the hours of 2000 and 0400 PST April 1 through November 15.

24 hour counts November 16 through December 31.

1996 - 2002 counts include 24 hour video counts January 1 through March 15 and November 16 through Dec 31.

From March 16 through November 15, video counts took place between 2000 and 0400 hours PST.

2003-14 counts include 16 hour video counts between 0400-2000 PST January 1 through March 31

and November 1 through December 31.

Correction to 2014 total Jacks.

2015-2019 live (real time) counting through November 30. Video counts between 0400-2000 PST January 1 - March 31 and December 1-31.

TABLE 27

MONTHLY COUNT OF STEELHEAD
BONNEVILLE DAM 1938 -2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	A-Run	B-Run
														Jan 1- Aug 25	Aug 26- Dec 31
1938					6,622	2,382	19,455	29,231	46,618	2,264	339	92	107,003	49,306	57,697
1939	23	19	570	8,110	1,587	1,490	36,681	38,062	33,891	1,264	216	119	122,032	80,096	41,936
1940	5	96	1,688	4,125	998	4,489	61,188	46,071	64,377	1,786	292	59	185,174	106,724	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	58,109	59,980
1942	4	37	256	3,642	4,159	1,588	19,905	41,973	77,076	2,412	566	182	151,800	65,219	86,581
1943	14	18	654	3,374	4,698	1,564	7,755	29,894	41,051	2,444	573	94	92,133	41,219	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	51,585	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	72,685	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	93,422	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	75,035	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	87,453	51,609
1949	1		1,689	3,293	1,712	1,264	34,314	54,281	20,786	1,161	686	98	119,285	90,762	28,523
1950	13	8	1,156	4,537	1,667	691	25,142	53,904	24,226	1,932	811		114,087	80,191	33,896
1951			375	2,338	1,568	5,187	74,980	39,712	15,357	947	225		140,689	121,100	19,589
1952			278	1,248	1,751	8,202	118,110	79,735	48,293	2,735	638		260,990	190,012	70,978
1953			1,310	5,308	1,456	5,313	106,712	64,006	36,107	2,797	905		223,914	173,135	50,779
1954		6	679	5,511	1,571	6,115	59,443	65,234	34,941	2,209	551		176,260	126,085	50,175
1955			1,006	2,100	1,149	2,418	79,124	84,746	24,239	3,361	268		198,411	161,614	36,797
1956			1,409	2,718	1,582	3,122	48,306	47,148	23,343	2,846	635	7	131,116	99,692	31,424
1957			926	2,081	760	8,434	66,738	34,915	24,029	1,069	231		139,183	105,179	34,004
1958			495	651	1,457	5,645	53,734	22,827	44,478	1,859	291		131,437	79,533	51,904
1959			219	746	1,236	2,562	60,549	38,417	23,579	1,540	178		129,026	98,198	30,828
1960			412	904	1,090	4,314	44,026	33,571	28,058	1,090	211		113,676	77,141	36,535
1961			374	1,161	692	2,246	44,379	41,237	47,409	1,561	660		139,719	79,269	60,450
1962			381	1,957	1,491	3,737	49,789	40,177	64,084	1,798	611		164,025	86,990	77,035
1963			503	1,035	1,385	4,192	51,951	31,441	35,446	2,920	545		129,418	83,858	45,560
1964			490	1,609	769	1,940	50,640	26,892	32,406	1,954	552		117,252	76,135	41,117
1965			211	1,516	1,419	4,265	89,405	29,506	37,529	1,971	631		166,453	120,560	45,893
1966			658	2,682	2,389	13,051	57,975	25,779	37,733	2,657	737		143,661	97,545	46,116
1967			416	1,182	899	3,062	40,881	36,787	35,472	2,701	472		121,872	78,794	43,078
1968			340	861	1,315	3,664	29,773	41,006	27,865	1,645	505		106,974	68,423	38,551
1969			911	2,164	2,897	6,889	63,222	36,077	26,565	1,484	573		140,782	104,051	36,731
1970			244	1,267	1,331	4,208	30,866	46,307	27,073	1,909	305		113,510	78,106	35,404
1971			463	1,377	1,810	4,469	84,877	58,249	38,619	3,739	363		193,966	141,054	52,912
1972			492	2,562	2,137	3,444	59,933	48,223	65,523	3,432	140		185,886	107,227	78,659
1973			830	2,534	1,367	5,360	53,820	46,399	43,275	3,918	320		157,823	100,011	57,812
1974			1,292	4,127	5,547	6,349	57,212	44,266	14,654	3,080	527		137,054	84,402	52,652
1975			1,080	4,284	4,324	6,058	30,823	28,623	9,106	904	338		85,540	71,586	13,954
1976			1,285	3,459	3,677	9,130	38,907	44,204	21,084	1,953	478		124,177	92,370	31,807
1977			1,159	4,121	4,115	11,395	67,554	35,161	66,084	3,298	550		193,437	113,682	79,755
1978			1,750	3,327	4,587	10,883	25,284	25,637	30,461	2,168	334		104,431	64,188	40,243
1979			1,333	1,905	1,785	7,585	33,379	39,399	23,592	4,710	291		113,979	79,472	34,507
1980			1,139	3,378	1,409	7,790	28,448	51,073	32,277	3,233	507		129,254	85,010	44,244
1981			1,031	3,812	3,887	12,628	56,787	52,435	25,737	2,650	303		159,270	121,785	37,485
1982			1,239	4,188	5,335	8,636	39,159	51,329	44,456	3,146	152		157,640	103,159	54,481
1983			458	1,253	1,638	6,017	69,036	86,066	48,920	4,636	415		218,439	148,853	69,586
1984			579	2,106	4,216	14,454	92,546	93,866	102,877	4,463	453		315,560	189,365	126,195
1985			977	2,956	3,997	13,036	102,256	152,455	63,575	4,088	647		343,987	251,723	92,264

TABLE 27
(Continued)
MONTHLY COUNT OF STEELHEAD
BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	Jan 1-	Aug 26-
														Aug 25	Dec 31
1986			2,712	3,674	4,500	16,655	136,622	129,089	76,532	9,280	827		379,891	279,154	100,737
1987			1,189	2,112	3,233	12,443	104,615	115,481	58,815	4,331	862		303,081	227,013	79,120
1988			1,158	3,728	5,016	13,615	72,718	113,791	63,864	4,421	761		279,072	190,030	89,042
1989			630	2,213	3,343	10,176	62,913	117,686	84,665	5,419	753		287,798	176,965	110,833
1990			966	2,563	4,501	11,643	37,140	52,327	65,813	7,522	552		183,027	89,144	93,883
1991			640	2,082	2,196	6,601	52,187	110,027	93,152	6,947	713		274,545	150,542	124,003
1992			646	1,964	3,239	9,708	55,090	135,162	103,792	4,918	456		314,975	175,218	139,757
1993			771	1,744	2,691	9,923	34,148	64,062	69,129	5,531	387		188,386	99,941	88,445
1994			422	1,976	3,132	7,511	27,202	59,157	54,856	8,079	789		163,124	83,968	79,156
1995			333	863	1,257	6,419	29,305	112,812	48,781	6,691	1,104	1,506	209,071	126,537	82,534
1996	793	57	1,862	1,776	2,424	6,912	40,813	102,200	48,397	6,143	761	337	212,475	141,999	70,476
1997	342	426	1,966	1,950	2,485	7,696	57,472	127,882	53,571	18,428	2,234	84	274,536	185,381	89,155
1998	161	239	984	883	1,655	7,236	36,437	60,403	76,293	12,136	489	585	197,501	89,413	108,088
1999	15	287	699	833	1,308	5,157	48,278	101,610	46,200	6,509	637	585	212,118	141,245	70,873
2000	340	420	1,495	1,235	2,006	13,864	80,259	106,918	68,407	7,306	510	175	282,935	189,821	93,114
2001	333	239	2,196	2,043	3,331	24,076	199,969	263,518	152,434	21,542	4,343	2,769	676,793	455,422	221,371
2002	1,311	833	1,770	2,918	2,752	19,918	119,923	180,381	151,807	24,004	4,140	923	510,680	294,743	215,937
2003	724	1,728	2,264	1,474	1,714	10,966	95,185	139,612	95,759	12,467	3,115	813	365,821	231,717	134,104
2004	236	646	1,799	1,815	2,947	16,183	66,621	111,886	94,482	15,024	972	767	313,378	178,653	134,725
2005	149	62	103	1,064	1,517	9,286	84,968	110,487	83,450	21,694	2,598	272	315,650	191,275	124,375
2006	1,587	446	944	1,174	1,537	7,172	46,912	154,325	104,659	13,400	5,750	1,395	339,301	180,418	158,883
2007	601	387	1,514	1,020	1,666	6,789	58,362	185,281	54,543	13,096	1,433	758	325,450	232,586	92,864
2008	145	119	780	1,427	1,896	12,509	122,870	102,636	107,693	6,053	1,325	392	357,845	223,943	133,902
2009	167	43	677	1,547	2,395	9,942	119,486	353,478	97,236	17,535	1,620	844	604,970	426,264	178,706
2010	803	685	2,529	2,567	3,388	23,314	157,387	139,354	75,509	8,898	1,318	851	416,603	306,420	110,183
2011	805	264	1,267	1,385	1,558	6,807	96,220	172,287	78,963	7,651	1,294	864	369,365	263,861	105,504
2012	280	669	1,940	1,312	1,703	7,943	72,994	86,419	49,966	10,478	1,128	471	235,303	160,509	74,794
2013	208	224	1,234	964	764	4,010	57,616	118,382	42,232	7,356	797	260	234,047	169,926	64,121
2014	238	235	2,120	1,274	1,829	10,422	85,879	115,167	94,401	11,740	1,902	794	326,001	198,289	127,712
2015	611	809	1,780	939	1,078	6,114	60,690	113,906	64,735	13,899	2,905	1,264	268,730	171,198	97,532
2016	314	892	1,569	922	1,565	9,751	47,117	50,639	62,868	11,182	1,029	298	188,146	106,010	82,136
2017	42	297	1,327	783	792	1,916	17,643	53,829	35,198	5,296	374	381	117,878	63,673	54,205
2018	238	410	1,029	912	1,109	4,462	26,758	29,041	31,273	6,928	579	181	102,920	57,044	45,876
2019	183	66	971	493	459	2,182	22,288	29,526	14,107	6,545	330	170	77,320	52,499	24,821
TOTAL	12,191	12,969	89,350	205,558	190,443	588,618	4,849,421	6,282,689	4,371,529	470,934	71,382	20,030	17,165,114	11,121,934	6,046,232
10-Year Average			1,577	1,155	1,425	7,692	64,459	90,855	54,925	8,997	1,166		233,631	154,943	78,688

1994 counts include nighttime video counts during the hours of 2100-0500 PST June 1 through August 16.

1995 counts include nighttime video counts during the hours of 2000 and 0400 PST April 1 through November 15.

24 hour counts November 16 through December 31.

1996 - 2002 counts includes 24 hour video counts January 1 through March 15 and November 16 through Dec 31.

2003 - 2014 counts include 16 hour video counts between 0400-2000 PST January 1 through March 31

and November 1 through December 31.

2015-2019 visual fish counting extended to November 30. Video counts between 0400-2000 PST January 1 through March 31.

and December 1-31.

TABLE 28
MONTHLY COUNT OF SHAD at
BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1938						39	3,184	1,502	527	21			5,273
1939					14	1,539	3,065	157	28				4,803
1940					48	12,931	9,178	72	1				22,230
1941					5	2,417	16,010	197	12	16			18,657
1942					2	38	11,341	1,473	5				12,859
1943						18	2,545	265	20				2,848
1944						287	16,568	248					17,103
1945						2,801	90,773	948	4				94,526
1946						3,895	16,073	415					20,383
1947					8	5,645	20,280	105	3				26,041
1948						8	6,458	1,953	2	1			8,422
1949						2,647	19,609	322	1				22,579
1950							7,265	548	3				7,816
1951						1,269	6,792	277	15				8,353
1952						487	2,595	45	4				3,131
1953						53	14,856	1,502	19				16,430
1954						34	3,848	1,136	11				5,029
1955						21	4,411	1,358	18				5,808
1956					1	67	6,838	1,168	11				8,085
1957						1,695	11,039	422	1	2			13,159
1958						3,885	6,257	59					10,201
1959					3	32	6,315	369	1				6,720
1960						35,259	57,443	594	72				93,368
1961						18,952	245,471	1,236	33	5			265,697
1962						43,689	387,554	4,657	82	4	2		435,988
1963					70	77,961	307,466	4,044	217	14			389,772
1964					19	3,203	236,321	13,008	121	2			252,674
1965					1	33,815	570,432	12,844	194	35	2		617,323
1966					94	181,187	367,643	7,988	545	51	5		557,513
1967			1	1		6,673	212,681	2,944	152	8			222,460
1968					800	107,881	183,878	1,387	121	10	1		294,078
1969			2	5	158	233,018	81,159	2,846	163	7			317,358
1970				2	250	228,519	99,659	566	262	18			329,276
1971					30	34,345	154,215	951	55	1			189,597
1972					38	16,689	192,608	5,301	88	1			214,725
1973					116,057	377,830	24,701	577	38	4			519,207
1974					7	6,122	91,302	1,496	17	1			98,945
1975					11	43,712	219,133	1,349	38	3			264,246
1976					4	123,053	179,994	2,112	49	7			305,219
1977					51,709	431,540	11,818	568	76	12			495,723
1978					30	802,110	57,997	991	33	5			861,166
1979					800	994,253	43,734	658	258	141	13		1,039,857
1980					1,460	766,473	170,705	685	51	15	1		939,390
1981				2	20,976	708,295	150,730	1,080	79	17			881,179
1982				1	6,888	655,037	117,325	914	37	9	1		780,212
1983					78,105	1,224,342	118,975	1,103	112	37			1,422,674
1984					553	950,406	320,526	4,097	153	55	1		1,275,791
1985					101,770	816,288	55,233	1,410	206	39	5		974,951

TABLE 28
(Continued)
MONTHLY COUNT OF SHAD at
BONNEVILLE DAM 1938 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1986					104,724	722,443	29,622	1,164	166	47	4		858,170
1987				28	254,326	678,850	10,254	379	32	5	1		943,875
1988				20	408,822	734,635	20,146	697					1,164,320
1989				1	199,327	1,651,338	24,697	2,041					1,877,404
1990				4	532,617	2,296,098	116,799	2,347					2,947,865
1991				1	37,677	1,566,933	307,835	1,971					1,914,417
1992				256	685,939	1,767,696	93,446	4,102					2,551,439
1993			11	10	111,459	1,883,831	167,900	3,463					2,166,674
1994				53	136,547	1,223,421	195,894	1,640					1,557,555
1995				1	231,973	1,289,390	193,091	1,724					1,716,179
1996					24,653	1,676,695	221,795	1,514					1,924,657
1997					97,507	1,760,507	312,779	768					2,171,561
1998				1	185,810	1,660,405	44,656	120					1,890,992
1999					132,782	1,374,822	129,625	1,043					1,638,272
2000				6	229,344	961,587	52,558	822					1,244,317
2001				9	704,104	1,550,639	41,596	1,611					2,297,959
2002				0	382,611	2,670,772	110,780	393					3,164,556
2003					420,265	4,025,864	108,226	4,195					4,558,550
2004					662,249	4,544,400	142,236	6,792					5,355,677
2005					288,233	3,768,400	182,603	2,893					4,242,129
2006					205,664	3,555,887	197,303	6,400					3,965,254
2007				56	695,605	1,763,670	112,508	3,438					2,575,277
2008					67,013	1,856,442	217,538	3,763					2,144,756
2009					313,849	1,028,718	30,571	600					1,373,738
2010					45,038	943,332	53,049	1,052					1,042,471
2011					1,857	766,135	177,334	2,744					948,070
2012					18,446	2,331,533	79,282	3,133					2,432,394
2013					381,393	3,298,348	68,417	3,217					3,751,375
2014					487,086	2,084,362	31,012	809					2,603,269
2015					192,809	1,450,924	169,229	2,039					1,815,001
2016					53,855	1,541,004	169,585	5,859					1,770,303
2017					16,950	2,641,858	468,807	7,786					3,135,401
2018					94,960	5,610,352	336,809	17,812					6,059,933
2019					754,337	6,309,363	390,956	4,489					7,459,145
TOTAL				14	457	9,539,742	81,951,114	9,952,941	192,767	4,136	593	36	101,641,800
10 Year - Average					204,673	2,697,721	194,448	4,894					3,101,736

TABLE 29
MONTHLY COUNT OF LAMPREY at
BONNEVILLE DAM 1939¹ - 1969, 1997 - 2019

The counts in the following table represent an approximation of trends, only. Lamprey are difficult to count. They move back and forth in the count window, spend long periods of time resting and are more likely to pass at night than salmonids. In addition, lamprey do not always use the fish ladder and may pass over a dam through several routes including the navigation lock, the auxiliary water supply, and specific lamprey passage structures.

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1939				732	9,027	95,814	103,726	14,403	3,349	71	0		227,122
1940				338	24,551	40,642	67,760	20,554	2,217	40	0		156,102
1941				1,428	7,449	6,960	34,952	12,801	1,305	57	2		64,954
1942				13	1,302	3,457	28,641	16,270	2,619	40	19		52,361
1943				0	1,684	3,539	14,332	26,508	5,017	14	2		51,096
1944				22	2,189	1,411	19,288	11,853	1,342	86	18		36,209
1945				56	1,676	4,365	16,395	11,533	2,407	56	0		36,488
1946				57	684	13,834	42,772	15,820	1,565	93	0		74,825
1947				158	9,183	7,563	54,032	17,680	3,566	2,141	3		94,326
1948			1	82	295	13,744	79,507	44,511	4,948	725	2		143,815
1949				5	1,105	5,678	41,438	8,264	1,372	40	7	19	57,928
² 1950					207	1,073	6,702	22,128	2,436	140	7		32,693
1951				1	4	11,001	8,554	25,078	420	51	1		45,110
1952					8	3,674	13,854	7,462	1,194	11			26,203
1953				79	946	727	17,917	26,053	1,381	25	1		47,129
1954				33	201	1,001	10,303	26,535	2,824	89			40,986
1955					210	764	16,368	21,765	3,341	154	1		42,603
1956					24	657	36,987	10,181	1,949	113			49,911
1957				19	185	17,698	28,506	5,907	699	17			53,031
1958				132	877	8,092	79,548	7,448	1,036	171	1,115		98,419
1959				23	67	6,273	123,104	79,976	4,006	1,626	8		215,083
1960				8	1,521	12,185	125,962	30,751	7,329	142			177,898
1961				30	649	16,786	200,722	126,438	20,110	70			364,805
1962				1	441	13,573	49,868	30,253	7,103	166	21		101,426
1963				21	20,827	5,803	28,348	24,639	7,702	597			87,937
1964			2	8	2,575	17,796	39,223	41,214	3,167	347	5		104,337
1965				54	6,674	8,886	71,027	16,949	4,617	772	8		108,987
1966				168	6,562	11,772	25,813	20,543	2,207	844	5		67,914
1967				211	4,416	6,348	38,591	14,792	1,570	225	18		66,171
1968				92	14,698	18,389	57,011	17,611	949	275	4		109,029
1969				44	24,386	230,096	87,769	32,908	4,126	170	10		379,509
*** Counting lamprey was stopped after 1969. It was resumed again in 1997. ***													
1997				4	1,691	³ #####	1,939	9,783	8,643	770	0		22,830
1998				103	2,213	12,851	14,548	5,304	2,211	285	0		37,515
1999				65	4,780	8,801	12,047	7,584	3,717	302	0		37,296
2000				91	2,204	7,953	4,184	3,408	1,038	123	1		19,002
2001				1	2,075	11,143	9,895	4,141	620	72			27,947
2002				0	1,280	34,070	39,405	17,380	7,977	364			100,476
2003				6	2,874	50,875	45,863	13,230	3,843	336			117,027
2004				0	1,670	27,515	23,607	6,644	2,170	174			61,780
2005				-1	774	10,706	12,271	2,320	498	96			26,664
2006				1	446	8,874	18,603	6,868	4,013	122	13		38,940
2007				0	297	2,397	12,948	2,884	818	-26	-9		19,309
2008				0	444	3,942	6,276	3,159	680	59	2		14,562
2009				0	818	2,740	3,819	1,057	203	-14	2	-3	8,622
2010				0	11	1,285	2,793	1,646	460	44	-6	1	6,234
2011	1				281	1,210	9,408	5,987	1,314	112	-5	7	18,315
2012				20	1,141	8,073	10,780	6,555	2,583	81	-10	1	29,224
2013					1,294	6,329	11,095	3,795	1,352	102	1	3	23,971
2014				2	2,599	7,944	15,598	4,802	943	62	4	-1	31,953
2015				0	936	11,478	15,814	9,280	927	111	168	2	38,716
2016	-1			10	3,429	8,808	26,671	12,130	1,162	111	4	0	52,324
2017					4,219	31,381	35,958	9,623	1,348	42	1	-8	82,564
2018	-5	5	0	0	2,944	20,661	13,707	5,402	707	7	-1	-8	43,419
2019	-16	-20	-3	0	258	6,076	9,184	3,626	287	-15	-3	0	19,374
TOTAL	0	4,117	183,301	874,713	1,925,433	935,436	155,387	12,688	1,419				4,092,471
10-Year Average	5	1,711	10,325	15,101	6,285	1,108	66	15					34,609

¹No data are available for 1938.

²Because of changes in the Washington shore counting station, lamprey counts from 1939-1949 cannot be compared with counts from 1950 on.

³Because of the heavy shad run, fish counters were not asked to count lamprey from June 1 through July 27.

TABLE 29b

MONTHLY COUNT OF LAMPREY PASSAGE at BONNEVILLE DAM - 24 hour passage
2009 - 2019

Total window counts (day plus night).

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2009					818	3,735	8,749	1,281	-297	-14	2	-3	14,271
2010					11	4,092	8,465	5,874	1,184	44	-6	1	19,665
2011	1				281	2,733	18,683	11,876	3,490	112	-5	7	37,178
2012				20	1,141	18,853	31,878	17,599	9,153	81	-10	1	78,716
2013					1,294	11,261	22,808	10,837	4,122	102	1	3	50,428
2014				2	2,599	14,079	30,817	16,837	-198	62	4	-1	64,201
2015					936	-41,470	-51,937	6,652	2,777	111	168	2	-82,761
2016	-1			10	4,380	6,342	33,487	18,358	1,275	111	4	0	63,966
2017					5,918	44,383	83,314	30,376	4,773	42	1	-8	168,799
2018	-5	5	0	0	4,778	29,617	22,294	10,490	833	7	-1	-8	68,010
2019	-16	-20	-3	0	695	17,541	21,613	9,245	593	-15	-3	0	49,630
TOTAL	-21	-15	-3	32	22,851	111,166	230,171	139,425	27,705	643	155	-6	532,103

TABLE 29c

MONTHLY COUNT OF LAMPREY PASSAGE at BONNEVILLE DAM - LPS & flume passage
2017 - 2019

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2017	oos	oos	oos	oos	1,749	42,985	55,955	15,667	4,075	31	oos	oos	120,462
2018	oos	oos	oos	1	736	36,820	16,389	4,909	1,525	40	oos	oos	60,420
2019	oos	oos	oos	1	160	10,651	6,602	3,170	514	33	oos	oos	21,132
TOTAL				2	2,645	90,456	78,946	23,746	6,114	104			202,014

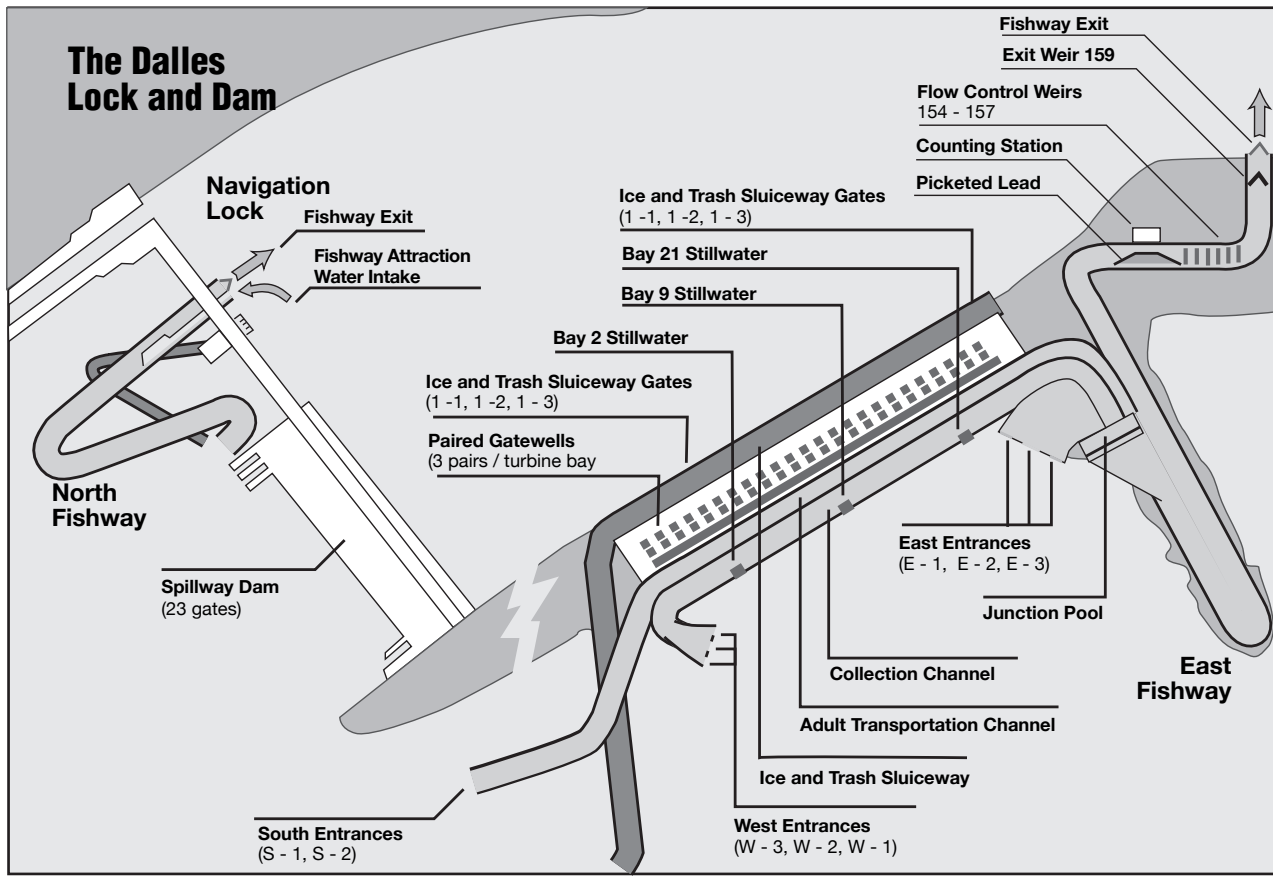
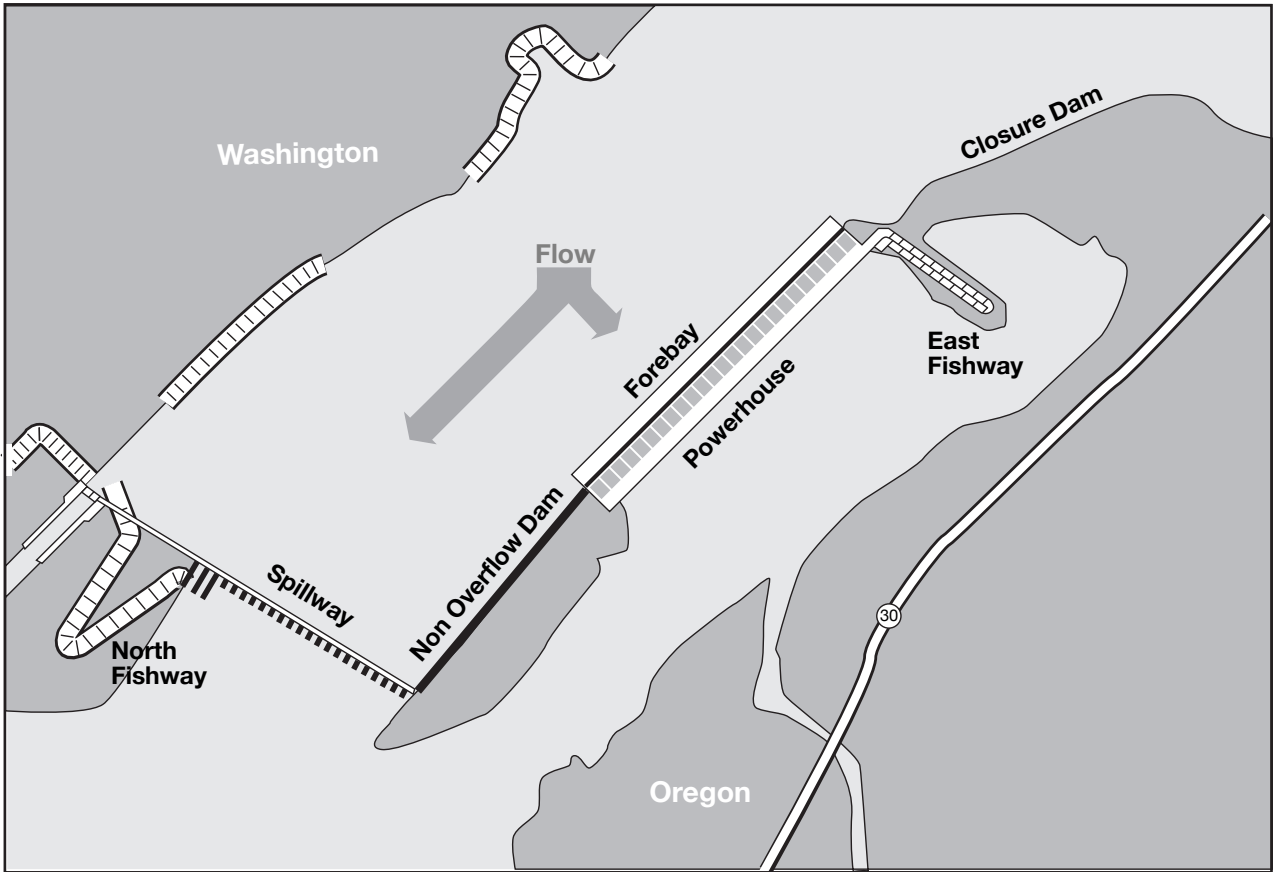
Note: Lamprey passage systems (LPSs) operational between May 1st and October 31st.

Lamprey Passage System counts are 24-hour mechanical counts, corrected.

During the operation of the wetted wall, located upstream of the Bradford Island count station, lampreys using the wall could be counted passing at both the window and the LPS potentially inflating the counts by an estimated 1,000 lampreys.

Estimated lamprey passage at Bonneville Dam in 2019 including both 24 hour window counts and LPS & flume = **70,762**

Plate 3 The Dalles Lock and Dam



THE DALLES DAM

FISH COUNTING SCHEDULE

Apr 1 – Oct 31 Visual counting daily 0400-2000 hours Pacific Standard Time.
June 15 – Sep 30 Video counting daily 2000-0400 hours Pacific Standard Time.

INTRODUCTION

The Dalles Dam has specific requirements for Columbia River fish passage that are specified in the annual Fish Passage Plan. The Dalles Dam has two fish ladders for upstream adult fish passage, as well as an ice trash sluiceway and spillway used for downstream steelhead kelt and juvenile fish passage. The following document is a summary of all fish related activities that occurred at The Dalles Dam in 2019. In addition Northern Wasco Co PUD has a turbine that supplies auxiliary water to the north fishway, which has a complete juvenile bypass system. Information on this systems operation can be acquired through Pacific States Marine Fish Commission monitoring report.

FISHWAY OPERATION

The following information includes fish passage system operation for calendar year 2019. Total length of time for annual fishway outages can be determined by referring to previous years' annual reports. These fishways were closed or dewatered for maintenance when they were not in operation.

East Adult Fishway

Jan 1 – Jan 16 Dewatered for winter maintenance
Jan 17 - Feb 8 AWS backup open
Feb 8 – Mar 21 AWS backup closed for vibration
Mar 21 – Mar 31 AWS backup open for second time
Mar 31 – Apr 2 AWS backup closed for flooding
Apr 2 – Apr 8 AWS backup open
Apr 8 Fish units return to service?AWS backup closed
Dec 3 – Dec 31 Dewatered for winter maintenance
Aug 7 Attraction water off half day for required ROV grating inspection

North Adult Fishway

Jan 1 – Jan 21 In full operation with attraction water
Jan 21 – Feb 7 Dewatered for annual maintenance
Feb 7 – Dec 31 In full operation with attraction water
Aug 7 Attraction water off half day for required ROV grating inspection

Ice/Trash Sluiceway (Juvenile)

Jan 1- Feb 28 End gate closed
Mar 1 – Mar 31 In service with 4 sluice gates open
Apr 1 – Nov 30 In service with 6 sluice gates open
Dec 1 – Dec 16 In service with 4 sluice gates open
Dec 16 – Dec 31 End gate closed

Spillway

Jan 1 – April 9 Closed, all gates on seal
April 10 – Aug 31 Variable spill
Sept 1 – Dec 31 Closed, all gates on seal

FISHWAY DEWATERING

Dewatering fishways provides the best opportunity for maintenance and inspection. To dewater the fishladders, exit bulkheads are installed and the ladder is allowed to drain. Entrance bulkheads are installed and dewatering pumps operated to dewater all

areas of fishways below tailwater elevation. Fisheries personnel enter these areas to salvage trapped fish when water levels allow entry. Fish are pushed toward tailwater or captured. Captured fish are transported to forebay or tailwater, depending on location, fish species, age class and stress levels. A follow up inspection is made to capture any missed fish. Efforts are made to provide continual water supply during the entire operation to reduce fish stranding and stress. Fishway areas that cannot be dewatered are inspected by ROV underwater camera.

Fishway Dewatering Results

Key: adult=a, juvenile=j, carp=cp, catfish=ca, sculpin=sp, shad=sh, small mouth bass=smb, crappie=cr, pikeminnow=pm, whitefish=wf, reidside=rs, large scale sucker=lss

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts
1/23/19	N upper	3j	0	0	0	12	0	1	trout		0
12/2/19	E upper	0	16j	0	0	0	234	0	0	0	shad
12/10/19	E lower	1	2a,2j	0	0	37a,4j	0	2a,(2juv-morts)	3	Wf, pmouth sturgeon tagged	Shad,1CH
9/9/19	MU9	0	0	0	0	0	0	0	0	0	0
9/23/19	MU13	0	0	0	0	0	0	0	0	0	0
11/26/19	MU11	0	0	0	0	0	0	6-DT	1-SC PM	0	0

RESEARCH

The following are a list of fish related research and contract personnel that were on site during the 2019 passage season;

4 Peaks – New fish counting contractors performed fish counts at the north and east fishways via count stations.

Oregon Dept of Fish and Wildlife – Captured, tagged, and collected biological data from northern pikeminnow as part of an evaluation of the Northern Pikeminnow Management Program.

Oregon Department of Fish and Wildlife and Fish Passage Center – Continued to provide once monthly fishway inspections of adult and juvenile systems.

Pacific States Marine Fish Commission – FERC required sampling at the Northern Wasco County PUD intake structure as per the Cooperative Agreement between Pacific States Marine Fisheries Commission and Wasco County PUD.

Pacific States Marine Fisheries Commission PTAGIS Information System – monitored Thin Wall PIT Tag detection system in The Dalles east and north count stations.

U.S. Dept of Agriculture – Provided avian hazing of piscivorous birds to reduce avian predation on juvenile salmonids May to August via pyrotechnics during juvenile passage season.

U. S. Geological Survey – Total Dissolved Gas (TDG) and water temperature monitoring.

CTUIR - Captured adult Pacific lamprey as part of the on-going project to restore lamprey to various tributaries. CTUIR worked with the Nez Perce and Yakama Nation to help with lamprey collection efforts. Yakama Nation was allocated 209, 189 for Nez Perce and 196 for CTUIR.

For the second and final year, the University of Idaho captured and released of adult Pacific lamprey in order to monitor upstream migratory movements outfitted with radio- and PIT-tags at Bonneville Dam. tagged lamprey for testing lower entrance flows 6/1 to 8/31. Entrances were opened and fish turbines were reduced in order to change from salmon to lamprey criteria. Conclusions point to no benefit for passage

For the second and final year, Portland district water quality section placed temperature string in front of both ladder exits to look for cooler water gradients from the forebay to perhaps tap into this column of cooler water due to environmental concerns of potential overheating summer ladder conditions. Data still being analyzed.

TABLE 30

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER THE DALLES DAM

2019

DAYTIME-Live													
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				864	40,377	34,137	17,820	26,711	147,602	33,620			301,131
STEELHEAD				202	21	572	8,587	10,731	27,662	13,219			60,994
SOCKEYE					8	33,503	16,925	212	39	39			50,726
COHO*							1	1,094	26,111	16,024			43,230
CHUM													0
PINK								1	15	7			23
TOTAL				1,066	40,406	68,212	43,333	38,749	201,429	62,909			456,104
LAMPREY					-1	765	2,294	891	268	3			4,220
STURGEON					5	14	45	33	17	7			121
BULL TROUT													0
NIGHT-Video													
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*						431	367	805	2,622				4,225
STEELHEAD						29	188	409	2,633				3,259
SOCKEYE						1,910	1,217	32	0				3,159
COHO*								52	2,053				2,105
CHUM													0
PINK													0
TOTAL						2,370	1,772	1,298	7,308				12,748
LAMPREY						3,037	6,904	3,453	470				13,864

*Jacks included

note: Shad no longer counted at The Dalles Dam. For count schedules refer to The Dalles Dam narrative.
For 24 hour annual totals add the daytime and night totals.

TABLE 31

DISCHARGE AND WATER QUALITY DATA

THE DALLES PROJECT 2019

JANUARY				
DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Jan 1	118.9	0.0	5.0	43.4
Jan 2	125.6	0.0	5.0	43.3
Jan 3	125.7	0.0	5.0	43.3
Jan 4	117.0	0.0	5.0	43.3
Jan 5	114.3	0.0	5.0	43.2
Jan 6	141.5	0.0	5.0	42.9
Jan 7	120.2	0.0	5.0	42.7
Jan 8	122.4	0.0	5.0	42.5
Jan 9	139.1	0.0	5.0	42.2
Jan 10	139.0	0.0	5.0	42.1
Jan 11	138.8	0.0	5.0	42.0
Jan 12	147.4	0.0	5.0	42.0
Jan 13	138.2	0.0	5.0	41.8
Jan 14	107.9	0.0	5.0	41.5
Jan 15	138.1	0.0	5.0	41.1
Jan 16	148.1	0.0	5.0	40.8
Jan 17	149.7	0.0	5.0	40.8
Jan 18	142.4	0.0	5.0	40.9
Jan 19	112.3	0.0	5.0	40.9
Jan 20	107.4	0.0	5.0	40.9
Jan 21	106.9	0.0	5.0	40.7
Jan 22	94.6	0.0	5.0	40.7
Jan 23	132.1	0.0	5.0	40.9
Jan 24	106.7	0.0	5.0	41.1
Jan 25	129.8	0.0	5.0	41.1
Jan 26	122.8	0.0	5.0	41.0
Jan 27	128.9	0.0	5.0	41.0
Jan 28	111.0	0.0	5.0	41.1
Jan 29	116.5	0.0	5.0	41.0
Jan 30	132.1	0.0	5.0	40.8
Jan 31	137.6	0.0	5.0	40.8
AVG.	126.2	0.0	5.0	41.7

FEBRUARY				
DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Feb 1	133.9	0.0	5.0	40.9
Feb 2	133.2	0.0	5.0	41.0
Feb 3	134.0	0.0	5.0	41.2
Feb 4	122.0	0.0	5.0	41.0
Feb 5	127.6	0.0	5.0	40.5
Feb 6	134.2	0.0	5.0	40.2
Feb 7	142.6	0.0	5.0	39.7
Feb 8	127.7	0.0	5.0	39.2
Feb 9	132.3	0.0	5.0	38.7
Feb 10	122.6	0.0	5.0	38.3
Feb 11	127.0	0.0	5.0	38.2
Feb 12	119.6	0.0	5.0	38.0
Feb 13	125.3	0.0	5.0	37.9
Feb 14	132.4	0.0	5.0	37.5
Feb 15	142.4	0.0	5.0	37.0
Feb 16	117.1	0.0	5.0	36.9
Feb 17	131.0	0.0	5.0	36.5
Feb 18	137.7	0.0	5.0	36.2
Feb 19	147.1	0.0	5.0	36.0
Feb 20	129.2	0.0	5.0	36.1
Feb 21	120.5	0.0	5.0	36.2
Feb 22	118.0	0.0	5.0	36.2
Feb 23	130.7	0.0	5.0	36.1
Feb 24	139.5	0.0	5.0	36.0
Feb 25	139.3	0.0	5.0	36.0
Feb 26	126.5	0.0	5.0	36.0
Feb 27	137.1	0.0	5.0	35.9
Feb 28	137.4	0.0	5.0	35.8
AVG.	131.0	0.0	5.0	37.8

MARCH				
DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Mar 1	122.2	0.0	5.0	36.0
Mar 2	112.7	0.0	5.0	36.1
Mar 3	112.9	0.3	5.0	36.1
Mar 4	117.5	0.0	5.0	36.1
Mar 5	132.3	0.3	5.0	35.8
Mar 6	142.9	0.0	5.0	35.6
Mar 7	151.9	0.5	5.0	35.6
Mar 8	160.4	0.0	5.0	35.9
Mar 9	149.4	0.3	5.0	36.1
Mar 10	155.2	0.0	5.0	36.0
Mar 11	142.6	0.3	5.0	36.1
Mar 12	125.5	0.0	5.0	36.4
Mar 13	115.1	0.3	5.0	37.0
Mar 14	115.9	0.0	5.0	37.6
Mar 15	111.3	0.4	5.0	37.9
Mar 16	128.3	7.4	5.0	38.1
Mar 17	108.2	8.7	5.0	38.5
Mar 18	131.7	7.5	5.0	38.8
Mar 19	122.8	7.5	5.0	39.2
Mar 20	120.3	7.5	5.0	39.6
Mar 21	126.5	11.3	5.0	40.3
Mar 22	114.6	7.2	5.0	40.8
Mar 23	148.7	0.0	4.0	41.3
Mar 24	159.6	0.0	4.0	41.8
Mar 25	171.8	0.0	3.0	42.1
Mar 26	165.8	6.0	2.5	42.5
Mar 27	180.2	13.6	2.5	42.9
Mar 28	177.7	0.0	2.5	43.1
Mar 29	181.3	0.0	2.5	43.8
Mar 30	178.0	0.0	2.5	44.3
Mar 31	175.7	0.0	2.5	44.7
AVG.	140.6	2.6	4.4	38.9

TABLE 32

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped		PINK	CHUM	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE	STEELHEAD					STEELHEAD	KCFS	KCFS	SECCHI
Apr 1	0			0			21	7						185.1	6.4	2.5	45.1
Apr 2	6			0			14	8						167.1	7.5	3.0	45.4
Apr 3	2			0			11	4						147.7	7.4	3.0	45.7
Apr 4	0			0			21	11						126.1	0.0	3.5	46.1
Apr 5	7			2			18	12						153.2	0.0	3.5	46.4
Apr 6	7			0			7	4						164.2	0.0	4.0	46.5
Apr 7	13			0			16	8						189.6	0.0	4.0	46.9
Apr 8	10			0			11	3						202.1	0.0	2.5	47.0
Apr 9	4			0			10	3						193.8	0.0	2.5	47.3
Apr 10	2			0			5	4						234.2	16.0	2.5	47.7
Apr 11	2			1			3	1						337.4	138.0	2.5	48.2
Apr 12	1			0			5	4						324.1	135.9	2.0	48.4
Apr 13	3			0			7	4						290.8	138.7	2.0	48.4
Apr 14	6			0			9	7						235.8	134.1	1.5	48.3
Apr 15	1			0			11	4						227.6	131.0	1.5	48.4
Apr 16	4			1			6	4						225.0	122.2	1.5	49.0
Apr 17	6			0			7	3						200.3	117.1	1.5	49.7
Apr 18	20			4			3	2						202.4	108.3	1.5	50.1
Apr 19	7			0			0	0						208.6	107.6	1.5	50.8
Apr 20	23			2			2	2						217.9	105.2	1.5	51.1
Apr 21	23			4			1	0						202.3	96.2	1.5	51.2
Apr 22	31			0			2	2						236.2	103.5	1.5	51.3
Apr 23	21			0			2	1						271.1	107.3	1.5	51.6
Apr 24	25			2			5	2						286.4	118.0	1.5	51.7
Apr 25	49			2			0	0						306.1	119.6	1.5	52.1
Apr 26	70			3			1	0						331.1	131.6	1.5	52.7
Apr 27	64			3			1	0						288.3	124.1	1.5	53.0
Apr 28	88			0			0	0						279.9	119.5	2.0	53.2
Apr 29	127			1			0	0						272.6	118.7	2.0	53.4
Apr 30	216			1			3	0						266.1	120.4	2.0	53.4
TOTAL	838			26			202	100									
AVG.	28			1			7	3						232.4	81.1	2.2	49.3

Note: Visual counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST. Shad counting discontinued.

TABLE 33

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD							SECCHI	DEG F
May 1	207			1			0	0	0			0	0	251.7	111.1	2.0	53.3
May 2	575			5			0	0	0			0	0	250.1	109.3	2.5	53.0
May 3	979			7			0	0	0			0	0	224.0	95.6	2.5	52.9
May 4	1,886			30			0	0	0			0	0	232.0	101.9	2.5	53.2
May 5	1,794			42			0	0	0			0	0	230.2	105.4	2.5	53.5
May 6	1,891			52			0	0	0			0	0	210.5	94.2	3.0	53.7
May 7	1,458			44			0	0	0			0	0	215.9	92.4	2.5	54.0
May 8	2,566			118			0	2	2			0	0	228.0	94.2	3.0	54.4
May 9	3,156			148			0	2	2			0	0	220.6	88.4	3.0	54.7
May 10	1,660			123			0	0	0			0	0	234.9	93.8	3.0	55.2
May 11	1,615			175			0	0	0			0	0	240.2	96.1	3.0	55.4
May 12	1,926			250			0	6	6			0	0	261.4	104.8	3.0	55.8
May 13	1,813			356			0	0	0			0	0	258.4	103.2	3.0	56.1
May 14	1,103			280			0	1	1			0	0	264.9	106.0	3.5	56.2
May 15	1,009			326			0	2	2			0	1	284.0	113.2	3.5	56.2
May 16	1,004			332			0	0	0			0	0	319.6	127.9	3.0	56.2
May 17	965			290			0	1	1			0	0	306.3	122.7	3.0	56.3
May 18	708			171			0	0	0			0	0	299.2	120.4	3.0	56.7
May 19	963			316			0	0	0			0	0	333.6	135.2	3.5	56.9
May 20	933			285			0	0	0			0	1	331.0	136.9	3.5	56.5
May 21	909			336			0	0	0			0	1	316.3	127.2	3.5	56.1
May 22	552			160			0	1	0			0	0	285.5	114.2	3.5	56.0
May 23	756			245			0	1	1			0	0	283.6	112.5	3.5	56.1
May 24	675			191			0	0	0			0	0	276.3	110.2	3.5	56.7
May 25	614			186			0	0	0			0	0	247.2	99.9	3.5	56.5
May 26	583			186			0	1	1			0	1	260.8	104.1	3.5	56.6
May 27	637			199			0	0	0			0	0	273.4	109.3	3.5	57.0
May 28	567			195			0	0	0			0	1	255.6	102.2	3.5	57.1
May 29	470			113			0	4	4			0	0	278.4	110.8	3.5	57.4
May 30	526			104			4	0	0			-1	0	278.3	111.1	3.5	58.1
May 31	514			97			4	0	0			0	0	288.4	115.3	3.0	58.2
TOTAL	35,014			5,363			8	21	20			-1	5				
AVG.	1,129			173			0	1	1			0	0	265.8	108.7	3.1	55.7
RUN YEAR		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD			LAMPREY	STURGEON				
TOTALS TO DATE		35,852	5,389				8	223	120			-1	5				

TABLE 34

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped		PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	SECCHI							DEG F	
Jun 1	541			132			10	2	1				1	1	311.2	124.4	3.0	58.8
Jun 2	791			125			11	7	5				1	0	319.1	128.6	3.0	59.3
Jun 3	824			150			9	1	0				0	1	285.9	114.8	3.5	59.9
Jun 4		540		111			14	1	1				0	0	292.0	116.6	3.5	60.4
Jun 5		1,021		142			11	2	2				7	0	291.1	116.0	3.5	60.6
Jun 6		853		111			18	1	1				3	1	267.2	107.0	4.0	60.5
Jun 7		1,014		72			54	1	0				5	0	281.3	112.2	4.0	60.4
Jun 8		873		119			62	2	3				4	0	232.5	92.7	3.5	60.5
Jun 9		1,030		136			112	2	0				5	0	229.0	91.7	4.0	60.9
Jun 10		725		125			167	3	3				4	1	229.2	91.8	3.5	61.4
Jun 11		880		136			171	4	1				13	0	240.5	95.3	3.5	61.7
Jun 12		939		128			236	9	1				19	1	216.6	86.7	3.0	62.1
Jun 13		1,033		126			300	4	4				8	0	214.6	85.9	3.0	62.5
Jun 14		1,488		217			542	5	4				45	0	206.0	82.4	4.0	62.5
Jun 15		1,433		178			575	9	7				22	0	200.7	80.1	4.5	62.6
Jun 16		1,366		227			926	9	3				19	0	197.9	79.0	4.5	63.5
Jun 17		1,542		197			1,189	10	9				62	1	175.4	70.3	4.0	64.1
Jun 18		1,208		148			1,015	3	0				57	0	182.8	72.7	4.0	64.6
Jun 19		1,019		121			1,340	0	6				26	2	170.3	68.1	4.0	64.3
Jun 20		1,242		158			2,236	22	16				26	0	152.7	61.2	4.0	63.9
Jun 21		866		164			1,593	21	10				30	1	166.2	66.5	4.0	64.0
Jun 22		843		143			1,918	19	13				41	0	185.0	74.0	4.0	64.4
Jun 23		946		129			2,398	30	18				66	1	180.4	72.3	4.0	64.5
Jun 24		940		123			2,497	27	19				24	0	141.2	56.7	4.0	64.2
Jun 25		742		188			2,179	33	25				12	1	164.2	65.9	4.0	64.1
Jun 26		730		154			2,860	32	22				34	1	157.0	62.8	4.0	64.0
Jun 27		1,064		168			2,856	78	52				54	0	163.0	65.1	5.0	64.0
Jun 28		1,002		138			2,355	80	61				42	2	158.0	63.0	5.0	64.3
Jun 29		1,147		129			3,100	57	45				76	1	165.6	66.1	5.0	64.7
Jun 30		1,139		161			2,749	98	81				59	-1	148.3	59.4	5.0	64.9
TOTAL	2,156	27,625		4,356			33,503	572	413				765	14				
AVG.	719	1023		145			1,117	19	14				26	0	210.8	84.3	3.9	62.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	38,008	5,796
SUMMER	27,625	3,949
TOTAL	65,633	9,745

	TOTAL STEELHEAD	unclipped STEELHEAD
SOCKEYE	33,511	533

LAMPREY	STURGEON
764	19

TABLE 35

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL					DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM			LAMPREY	STURGEON	KCFS	KCFS
Jul 1		1,169		175	0	0	2,744	125	102			67	2	144.0	57.3	5.0	65.0
Jul 2		768		201	0	0	1,690	112	72			74	2	153.4	61.5	4.0	64.9
Jul 3		701		159	0	0	1,191	139	102			60	-1	121.6	48.8	4.0	65.0
Jul 4		989		147	1	0	1,329	186	117			31	0	124.9	49.8	3.5	65.5
Jul 5		886		193	0	0	1,311	240	154			72	-1	117.0	46.7	4.0	66.1
Jul 6		731		150	0	0	1,351	236	140			136	2	122.7	49.1	3.5	66.5
Jul 7		637		150	0	0	1,203	344	217			99	2	122.5	49.0	4.5	66.4
Jul 8		465		100	0	0	802	297	164			73	4	123.2	49.1	4.0	66.6
Jul 9		521		129	0	0	847	288	196			57	5	131.3	52.2	4.0	66.9
Jul 10		465		116	0	0	800	225	150			37	2	125.2	50.0	4.0	67.1
Jul 11		578		148	0	0	622	238	165			68	1	113.4	45.2	4.0	67.4
Jul 12		466		88	0	0	402	311	198			37	2	132.0	52.7	4.0	67.8
Jul 13		479		117	0	0	318	362	232			72	1	133.9	53.3	4.0	68.0
Jul 14		434		130	0	0	316	371	248			54	2	141.4	56.5	4.5	68.2
Jul 15		422		95	0	0	228	368	238			79	2	119.6	47.5	4.5	68.4
Jul 16		430		130	0	0	261	302	205			111	2	139.4	55.5	4.5	68.7
Jul 17		357		117	0	0	278	384	236			208	2	129.6	52.1	4.5	68.9
Jul 18		343		102	0	0	191	256	156			59	2	120.5	48.2	5.0	69.0
Jul 19		344		64	0	0	201	344	229			55	1	119.5	47.9	5.0	68.8
Jul 20		227		103	0	0	147	309	193			88	1	136.6	54.6	5.0	69.1
Jul 21		339		48	0	0	127	302	190			73	1	135.7	54.1	5.0	69.5
Jul 22		407		87	0	0	110	371	250			63	1	129.3	51.7	5.0	69.9
Jul 23		368		71	0	0	101	363	229			84	2	118.9	47.6	5.0	70.2
Jul 24		306		103	0	0	88	327	219			94	0	130.7	52.2	5.0	69.7
Jul 25		319		99	0	0	76	353	234			38	1	120.7	47.9	5.0	69.8
Jul 26		213		67	0	0	41	273	182			88	1	127.1	50.9	5.0	70.4
Jul 27		257		98	0	0	41	310	194			103	1	145.3	58.4	5.0	70.7
Jul 28		204		59	0	0	22	223	134			62	0	121.7	48.4	5.0	70.4
Jul 29		255		74	0	0	35	263	185			68	2	116.5	46.7	5.0	70.7
Jul 30		150		39	0	0	25	155	96			40	1	127.2	50.9	5.0	70.7
Jul 31		184		47	0	0	27	210	109			44	2	124.5	49.6	5.0	70.3

TOTAL	14,414	3,406	1	0	16,925	8,587	5,536	2,294	45	128.0	51.1	4.5	68.3
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AVG	465	110	0	0	546	277	179	74	1	128.0	51.1	4.5	68.3
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	38,008	5,796
SUMMER	42,039	7,355
TOTAL	80,047	13,151

COHO ADULTS	COHO JACKS	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD
1	0	50,436	9,382	6,069

LAMPREY	STURGEON
3,058	64

TABLE 36

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL	unclipped		PINK	CHUM	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT		JACK	SOCKEYE							STEELHEAD	STEELHEAD	KCFS
Aug 1		170		40	0	0	31	282	183	0		77	-1	132.5	52.9	5.0	70.7
Aug 2		215		55	0	0	14	306	164	0		41	1	155.3	62.1	5.0	70.9
Aug 3		224		47	0	0	10	419	288	0		62	5	139.7	55.8	5.0	71.2
Aug 4			205	42	0	0	5	327	178	0		60	0	138.8	55.5	5.0	71.7
Aug 5			215	32	1	0	12	318	200	0		16	1	130.4	52.8	5.0	72.2
Aug 6			180	54	-1	0	10	271	164	0		90	0	130.8	52.2	5.0	72.5
Aug 7			143	28	0	0	9	191	119	0		47	2	130.6	52.1	5.0	72.4
Aug 8			171	29	0	0	4	295	187	0		33	2	136.7	54.5	5.0	72.0
Aug 9			193	50	-1	0	6	352	229	0		29	0	134.4	53.4	5.0	71.6
Aug 10			129	31	0	0	9	246	139	0		34	8	113.5	45.8	5.0	71.9
Aug 11			236	33	0	0	4	267	171	0		20	1	122.1	48.5	5.0	72.1
Aug 12			357	37	1	0	0	406	247	0		34	1	106.9	42.6	5.0	71.7
Aug 13			291	33	0	0	2	244	139	0		12	-1	105.3	42.2	5.0	71.9
Aug 14			326	36	1	0	4	164	92	0		21	1	122.9	49.1	5.0	72.2
Aug 15			388	59	3	0	7	262	146	0		34	-1	136.9	54.7	5.0	72.0
Aug 16			273	63	1	0	1	359	201	0		30	0	110.2	44.0	5.0	71.6
Aug 17			388	81	3	1	2	409	222	0		13	0	104.2	41.5	5.0	70.9
Aug 18			545	85	2	0	2	394	208	0		8	3	106.8	42.9	5.0	71.0
Aug 19			589	85	4	3	1	576	285	0		16	1	96.7	38.5	5.0	71.2
Aug 20			661	90	5	3	3	423	225	0		18	2	100.0	40.0	5.0	71.4
Aug 21			365	53	8	1	22	257	126	0		27	0	113.9	45.5	5.0	71.6
Aug 22			594	80	10	5	2	265	133	0		14	0	126.2	50.1	5.0	71.2
Aug 23			1,271	139	38	7	2	389	169	0		21	0	129.7	51.8	5.0	71.2
Aug 24			1,877	216	29	10	3	355	169	0		21	0	122.3	48.9	5.0	71.3
Aug 25			1,235	181	38	12	17	366	195	0		23	0	103.5	41.3	5.0	71.1
Aug 26			1,290	225	65	21	9	441	199	0		17	1	92.0	34.7	5.0	70.9
Aug 27			1,457	240	56	13	2	334	177	0		17	1	97.1	39.0	5.0	71.2
Aug 28			2,393	339	93	24	2	376	148	1		12	2	102.2	41.0	5.0	71.6
Aug 29			3,493	457	188	101	1	656	291	0		14	1	109.8	43.8	5.0	71.9
Aug 30			1,139	222	88	21	15	290	113	0		5	1	116.3	46.7	5.0	71.8
Aug 31			2,212	324	141	99	1	491	232	0		25	2	108.7	43.3	5.0	71.6
TOTAL		609	22,616	3,486	773	321	212	10,731	5,739	1		891	33				

AVG.	203	808	112	25	10	7	346	185	0		29	1	118.6	47.3	5.0	71.6
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RUN YEAR	CHINOOK		COHO			TOTAL	unclipped	LAMPREY	STURGEON	
	ADULT	JACK	ADULTS	JACKS	SOCKEYE	STEELHEAD	STEELHEAD			PINK
TOTALS TO DATE										
SPRING	38,008	5,796	774	321	50,648	20,113	11,808	1	3,949	97
SUMMER	42,648	7,497								
FALL	22,616	3,344								
TOTAL	103,272	16,637								

TABLE 37

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT. PORTLAND

THE DALLES PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped		PINK	CHUM	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT		JACK	STEELHEAD	STEELHEAD					KCFS	KCFS	SECCHI	DEG F
Sep 1			3,494	508	154	29	7	441	188	2		33	0	108.5	43.5	5.0	71.8
Sep 2			3,504	453	112	78	4	461	206	1		24	0	97.9	0.1	5.0	71.9
Sep 3			2,247	458	119	18	8	300	129	0		22	1	92.2	0.0	5.0	71.7
Sep 4			1,392	323	63	9	1	259	91	0		10	0	105.5	0.0	5.0	71.8
Sep 5			2,402	414	58	16	1	290	101	0		21	0	97.4	0.0	5.0	71.8
Sep 6			3,391	513	116	19	0	376	127	0		19	1	92.6	0.0	5.0	72.0
Sep 7			3,329	619	144	102	0	365	146	0		10	2	90.3	0.0	5.0	72.1
Sep 8			3,776	623	259	61	0	692	260	0		7	0	86.9	0.0	5.0	71.9
Sep 9			3,257	605	283	105	4	1,132	428	0		7	1	74.6	0.0	5.0	71.5
Sep 10			4,375	821	273	62	4	1,042	483	1		10	1	69.5	0.0	5.0	71.0
Sep 11			3,982	445	384	176	0	813	308	0		14	1	81.9	0.0	5.0	70.9
Sep 12			2,983	454	218	24	1	826	366	0		3	-1	84.1	0.0	5.0	70.9
Sep 13			8,451	965	316	52	0	1,124	408	0		11	1	104.6	0.0	5.0	70.9
Sep 14			9,805	1,112	469	39	1	968	440	1		11	1	79.1	0.0	5.0	70.9
Sep 15			10,983	1,484	1,282	115	0	1,451	518	1		8	1	78.1	0.0	5.0	70.3
Sep 16			4,666	757	1,261	125	6	735	306	2		7	1	73.0	0.0	5.0	69.9
Sep 17			3,432	655	645	76	0	573	212	0		7	0	76.2	0.0	5.0	69.2
Sep 18			4,409	765	666	171	0	895	337	0		4	2	96.8	0.0	5.0	69.1
Sep 19			5,554	862	1,083	141	0	1,828	552	0		2	0	87.7	0.0	5.0	69.1
Sep 20			8,418	767	2,001	79	0	2,722	1,138	1		6	-3	82.2	0.0	5.0	68.9
Sep 21			5,755	715	2,348	247	1	1,659	577	1		10	2	73.7	0.0	5.0	68.4
Sep 22			4,428	543	2,504	154	0	1,445	538	2		4	1	72.7	0.0	5.0	68.1
Sep 23			3,049	411	1,324	63	0	829	308	1		0	1	84.0	0.0	5.0	67.9
Sep 24			4,520	713	1,080	193	0	965	324	0		4	2	71.4	0.0	5.0	67.5
Sep 25			3,691	662	1,276	66	0	948	350	1		3	0	66.5	0.0	5.0	67.1
Sep 26			2,607	541	872	134	0	934	274	1		3	-1	81.8	0.0	5.0	67.1
Sep 27			4,111	491	1,078	152	0	897	325	0		2	1	66.1	0.0	5.0	66.8
Sep 28			3,078	487	1,623	183	0	1,254	433	0		3	1	72.5	0.0	5.0	66.0
Sep 29			2,079	317	814	103	1	729	273	0		1	1	84.2	0.0	5.0	65.1
Sep 30			1,649	302	448	46	0	709	240	0		2	0	70.7	0.0	5.0	64.9
TOTAL			128,817	18,785	23,273	2,838	39	27,662	10,386	15		268	17				
AVG.			4,294	626	776	95	1	922	346	1		9	1	83.4	1.5	5.0	69.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	38,008	5,796
SUMMER	42,648	7,497
FALL	151,433	22,129
TOTAL	232,089	35,422

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK
24,047	3,159	50,687	47,775	22,194	16

LAMPREY	STURGEON
4,217	114

TABLE 38

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD							STEELHEAD	SECCHI	DEG F
Oct 1			3,063	335	871	106	7	1,036	391	0		1	0	91.2	0.0	5.0	64.5
Oct 2			4,653	489	908	38	4	858	345	0		0	0	88.7	0.0	5.0	64.2
Oct 3			1,211	227	526	37	8	679	290	0		1	0	92.8	0.0	5.0	64.2
Oct 4			1,290	225	664	36	1	532	215	1		0	2	92.4	0.0	5.0	63.9
Oct 5			1,045	225	612	26	1	579	190	0		0	0	76.9	0.0	5.0	63.6
Oct 6			1,565	230	589	31	0	652	248	1		0	0	77.6	0.0	5.0	63.1
Oct 7			1,193	247	408	50	0	543	193	0		0	0	73.7	0.0	5.0	62.8
Oct 8			869	248	499	92	0	548	214	0		1	0	73.7	0.0	5.0	62.5
Oct 9			919	202	839	82	4	760	264	0		0	1	72.4	0.0	5.0	61.7
Oct 10			1,576	240	923	123	4	579	270	0		0	0	100.3	0.0	5.0	60.8
Oct 11			1,431	216	465	27	0	477	196	0		0	1	94.2	0.0	5.0	60.4
Oct 12			970	240	503	84	1	452	164	0		0	1	95.8	0.0	5.0	60.0
Oct 13			894	193	444	22	0	427	157	0		0	1	74.4	0.0	5.0	59.8
Oct 14			441	142	335	14	1	436	147	0		0	1	12.1	0.0	5.0	59.5
Oct 15			513	126	271	8	0	502	192	0		0	0	80.4	0.0	5.0	59.5
Oct 16			673	165	157	9	6	325	135	0		0	0	90.8	0.0	5.0	59.3
Oct 17			686	146	192	17	0	371	146	1		0	0	96.8	0.0	5.0	59.1
Oct 18			503	115	725	19	0	493	204	0		0	0	79.7	0.0	5.0	58.7
Oct 19			567	87	1,455	181	0	534	248	0		0	0	84.0	0.0	5.0	58.3
Oct 20			815	90	1,308	68	0	542	281	1		0	0	72.4	0.0	5.0	57.7
Oct 21			472	67	841	142	1	429	210	0		0	0	90.8	0.0	5.0	57.3
Oct 22			352	40	335	29	0	242	119	0		0	0	82.0	0.0	5.0	57.3
Oct 23			352	64	272	44	0	270	141	0		0	0	67.1	0.0	5.0	57.2
Oct 24			432	38	176	12	0	156	71	0		0	0	87.1	0.0	5.0	57.1
Oct 25			400	41	113	5	0	184	90	0		0	0	79.2	0.0	5.0	57.0
Oct 26			447	59	64	5	0	158	55	0		0	0	67.4	0.0	5.0	56.7
Oct 27			424	25	44	6	0	100	45	0		0	0	72.2	0.0	5.0	56.2
Oct 28			406	38	27	4	0	112	35	2		0	0	80.9	0.0	5.0	55.7
Oct 29			244	27	38	6	1	87	25	0		0	0	96.9	0.0	5.0	54.9
Oct 30			321	31	38	5	0	64	20	1		0	0	104.8	0.0	5.0	54.0
Oct 31			246	29	53	1	0	92	37	0		0	0	99.6	0.0	5.0	53.5
TOTAL			28,973	4,647	14,695	1,329	39	13,219	5,338	7		3	7				
AVG.			935	150	474	43	1	426	172	0		0	0	82.2	0.0	5.0	59.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	38,008	5,796
SUMMER	42,648	7,497
FALL	180,406	26,776
TOTAL	261,062	40,069

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	CHUM	LAMPREY	STURGEON
38,742	4,488	50,726	60,994	27,532	23	0	4,220	121

Note: Visual counts ended October 31.

TABLE 39

DISCHARGE AND WATER QUALITY DATA

THE DALLES PROJECT 2019

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Nov 1	87.4	0.0	5.0	53.2	Dec 1	125.5	0.0	5.0	47.5
Nov 2	88.1	0.0	5.0	53.1	Dec 2	128.4	0.0	5.0	47.0
Nov 3	102.2	0.0	5.0	53.0	Dec 3	127.6	0.0	5.0	46.7
Nov 4	88.7	0.0	5.0	53.0	Dec 4	125.7	0.0	5.0	46.4
Nov 5	107.0	0.0	5.0	52.9	Dec 5	131.5	0.0	5.0	46.0
Nov 6	123.4	0.0	5.0	52.7	Dec 6	135.4	0.0	5.0	45.7
Nov 7	130.0	0.0	5.0	52.4	Dec 7	129.9	0.0	5.0	45.2
Nov 8	121.0	0.0	5.0	52.0	Dec 8	120.8	0.0	5.0	44.9
Nov 9	121.4	0.0	5.0	51.4	Dec 9	113.2	0.0	5.0	44.9
Nov 10	124.0	0.0	5.0	51.1	Dec 10	122.6	0.0	5.0	44.8
Nov 11	125.2	0.0	5.0	51.1	Dec 11	125.5	0.0	5.0	44.6
Nov 12	124.8	0.0	5.0	50.9	Dec 12	117.0	0.0	5.0	44.4
Nov 13	119.1	0.0	5.0	50.6	Dec 13	112.6	0.0	5.0	44.1
Nov 14	114.0	0.0	5.0	50.1	Dec 14	111.6	0.0	5.0	43.9
Nov 15	123.5	0.0	5.0	49.8	Dec 15	110.5	0.0	5.0	43.7
Nov 16	117.5	0.0	5.0	49.7	Dec 16	112.9	0.0	5.0	43.7
Nov 17	117.8	0.0	5.0	49.8	Dec 17	120.2	0.0	5.0	43.6
Nov 18	112.5	0.0	5.0	49.9	Dec 18	123.4	0.0	5.0	43.4
Nov 19	119.0	0.0	5.0	50.1	Dec 19	124.6	0.0	5.0	43.2
Nov 20	118.3	0.0	5.0	50.4	Dec 20	125.8	0.0	5.0	43.2
Nov 21	121.4	0.0	5.0	50.5	Dec 21	106.2	0.0	5.0	43.3
Nov 22	122.7	0.0	5.0	50.2	Dec 22	93.3	0.0	5.0	43.4
Nov 23	121.5	0.0	5.0	49.8	Dec 23	91.8	0.0	5.0	43.7
Nov 24	115.1	0.0	5.0	49.5	Dec 24	108.5	0.0	5.0	43.8
Nov 25	118.0	0.0	5.0	49.6	Dec 25	107.9	0.0	5.0	43.6
Nov 26	120.3	0.0	5.0	49.6	Dec 26	106.1	0.0	5.0	43.4
Nov 27	121.2	0.0	5.0	49.2	Dec 27	116.8	0.0	5.0	43.3
Nov 28	122.6	0.0	5.0	48.6	Dec 28	123.3	0.0	5.0	43.1
Nov 29	113.3	0.0	5.0	48.2	Dec 29	116.4	0.0	5.0	43.0
Nov 30	130.6	0.0	5.0	47.9	Dec 30	109.5	0.0	5.0	42.8
					Dec 31	109.1	0.0	5.0	42.8
AVG.	116.4	0.0	5.0	50.7	AVG.	117.2	0.0	5.0	44.3

TABLE 40

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

June 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD			
Jun 1												
Jun 2												
Jun 3												
Jun 4												
Jun 5												
Jun 6												
Jun 7												
Jun 8												
Jun 9												
Jun 10												
Jun 11												
Jun 12												
Jun 13												
Jun 14												
Jun 15		49		2			43	0	0			155
Jun 16		34		4			86	1	1			197
Jun 17		31		2			65	1	1			370
Jun 18		19		0			83	1	0			243
Jun 19		28		4			73	1	0			184
Jun 20		19		4			99	2	1			151
Jun 21		21		3			117	2	1			211
Jun 22		30		7			152	2	1			173
Jun 23		13		0			126	2	1			164
Jun 24		20		2			156	2	2			129
Jun 25		15		5			159	0	0			93
Jun 26		12		2			145	2	2			146
Jun 27		17		1			109	5	4			225
Jun 28		22		4			155	3	2			198
Jun 29		24		2			187	4	2			209
Jun 30		33		2			155	1	1			189
TOTAL		387		44			1,910	29	19			3,037
AVG.		24		3			119	2	1			190

Note: Night counts are video counts from 2000-0400 PST.

TABLE 41

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

July 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped STEELHEAD	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					
Jul 1		11		2			93	2	1		169
Jul 2		10		1			90	1	0		125
Jul 3		11		2			88	6	6		131
Jul 4		18		1			102	3	1		125
Jul 5		19		3			80	5	3		156
Jul 6		15		0			62	5	3		203
Jul 7		13		2			87	8	6		128
Jul 8		7		5			45	8	6		114
Jul 9		5		1			58	1	1		89
Jul 10		11		3			58	8	5		101
Jul 11		21		1			63	5	4		154
Jul 12		18		1			48	10	7		153
Jul 13		9		0			35	5	2		193
Jul 14		7		3			36	5	2		197
Jul 15		6		0			26	2	2		199
Jul 16		15		0			28	10	6		331
Jul 17		9		0			33	6	4		169
Jul 18		5		2			21	3	3		263
Jul 19		15		0			27	6	3		353
Jul 20		9		0			21	9	3		346
Jul 21		7		1			18	14	14		328
Jul 22		14		1			18	7	5		357
Jul 23		8		2			18	16	13		305
Jul 24		6		3			15	2	1		149
Jul 25		12		2			9	10	7		257
Jul 26		4		1			12	7	6		399
Jul 27		8		2			10	4	3		278
Jul 28		5		1			7	3	4		298
Jul 29		12		0			4	6	4		385
Jul 30		8		1			3	7	6		258
Jul 31		5		3			2	4	1		191
TOTAL		323		44			1,217	188	132		6,904
AVG		10		1			39	6	4		223

Note: Night counts are video counts from 2000-0400 PST.

TABLE 42

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

August 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD			
Aug 1		10		0	0	0	1	10	4			367
Aug 2		14		0	0	0	4	6	6			177
Aug 3		3		0	0	0	5	7	5			163
Aug 4			17	0	0	0	3	14	7			163
Aug 5			10	0	0	0	0	11	6			287
Aug 6			9	2	0	0	0	5	5			213
Aug 7			14	0	0	0	3	14	11			129
Aug 8			16	0	0	0	4	10	6			69
Aug 9			2	1	0	0	2	13	8			73
Aug 10			12	0	0	0	0	9	6			104
Aug 11			3	0	0	0	0	9	4			4
Aug 12			18	0	0	0	0	7	3			9
Aug 13			14	2	0	0	1	9	9			111
Aug 14			15	2	0	0	2	11	8			148
Aug 15			9	7	0	0	0	14	7			83
Aug 16			8	1	1	0	1	17	8			41
Aug 17			13	1	0	0	0	14	9			45
Aug 18			19	2	0	0	0	10	6			84
Aug 19			17	2	0	0	0	20	16			129
Aug 20			22	3	0	0	0	9	5			180
Aug 21			30	3	0	0	0	9	4			129
Aug 22			31	3	0	0	0	5	4			106
Aug 23			35	4	0	0	0	8	1			80
Aug 24			44	7	3	0	3	20	9			84
Aug 25			24	3	3	0	0	20	10			68
Aug 26			23	1	0	0	3	25	13			65
Aug 27			70	6	3	0	0	16	11			62
Aug 28			90	6	15	0	0	25	9			122
Aug 29			52	4	16	2	0	30	9			84
Aug 30			21	14	2	2	0	13	3			36
Aug 31			56	10	3	2	0	19	5			38
TOTAL		27	694	84	46	6	32	409	217			3,453
AVG.		9	25	3	1	0	1	13	7			111

Note: Night counts are video counts from 2000-0400 PST. Night counts from Aug 11 and 12 are single ladder counts (East).

TABLE 43

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

September 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD			
Sep 1			103	10	17	2	0	20	9			93
Sep 2			74	7	4	4	1	20	12			78
Sep 3			19	2	3	1	0	17	5			52
Sep 4			22	4	3	1	0	20	6			31
Sep 5			71	9	10	2	0	14	5			25
Sep 6			113	7	12	5	0	32	14			21
Sep 7			116	8	22	4	0	58	25			23
Sep 8			94	6	45	2	0	95	39			14
Sep 9			99	5	40	5	0	148	47			13
Sep 10			38	8	11	1	0	80	32			16
Sep 11			57	4	27	3	0	93	31			7
Sep 12			140	10	43	2	0	124	46			10
Sep 13			248	21	70	5	0	171	60			6
Sep 14			136	7	83	7	0	108	48			13
Sep 15			178	11	108	3	0	108	46			7
Sep 16			71	5	50	3	0	77	28			9
Sep 17			120	5	61	1	0	115	56			4
Sep 18			114	6	80	3	0	119	34			7
Sep 19			188	10	128	6	0	254	66			3
Sep 20			114	14	217	5	0	133	41			5
Sep 21			48	1	263	2	0	124	49			9
Sep 22			79	7	73	1	0	96	46			7
Sep 23			53	5	76	1	0	71	29			4
Sep 24			36	3	110	1	0	86	39			0
Sep 25			13	3	74	2	0	77	40			3
Sep 26			16	2	56	1	0	64	23			3
Sep 27			15	4	109	1	-1	84	30			5
Sep 28			18	2	109	0	0	97	39			1
Sep 29			19	3	40	0	0	53	22			1
Sep 30			20	1	35	0	0	75	29			0
TOTAL			2,432	190	1,979	74	0	2,633	996			470
AVG.			81	6	66	2	0	88	33			16

Note: Night counts are video counts from 2000-0400 PST.

TABLE 44

**YEARLY TOTALS OF SALMONIDS COUNTED OVER THE DALLES DAM
1957 - 2019**

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTALS
1957	312,678	129,361	90,201	6,793	75	4	539,112
1958	301,960	121,420	111,039	2,395	31	5	536,850
1959	207,461	156,090	86,259	2,709	25	9	452,553
1960	196,962	111,189	59,441	3,000	35	5	370,632
1961	201,335	134,572	16,689	2,139		4	354,739
1962	187,132	163,301	27,127	3,696		5	381,261
1963	180,969	118,957	56,931	3,716	23	3	360,599
1964	183,842	110,033	79,042	5,978		5	378,900
1965	195,049	141,052	44,279	17,468	1	3	397,852
1966	240,671	146,172	147,886	32,279		1	567,009
1967	280,112	121,614	120,589	32,015	1	4	554,335
1968	262,975	147,481	116,897	42,687		1	570,041
1969	314,258	112,529	37,226	17,054		1	481,068
1970	261,457	99,187	77,678	23,219		4	461,545
1971	250,528	151,348	76,103	29,061		3	507,043
1972	268,628	135,303	44,671	16,562			465,164
1973	280,945	100,082	52,303	11,152		1	444,483
1974	217,181	70,875	28,827	14,655			331,538
1975	217,283	57,675	43,198	13,976			332,132
1976	216,163	82,568	27,747	19,392			345,870
1977	224,950	133,882	86,252	10,021			455,105
1978	199,228	60,485	11,845	18,877			290,435
1979	150,647	83,364	32,791	8,726		4	275,532
1980	113,951	93,963	42,088	6,326			256,328
1981	135,176	113,268	35,447	6,941		1	290,833
1982	172,682	117,434	33,331	7,383			330,830
1983	156,190	171,055	84,204	3,459	1		414,909
1984	203,920	219,123	101,177	3,142		1	527,363
1985	370,982	276,025	117,254	4,625		5	768,891
1986	443,013	281,953	48,477	4,842	3	4	778,292
1987	421,190	217,768	87,599	3,310	1	2	729,870
1988	378,080	198,499	55,802	9,226			641,607
1989	282,168	235,639	39,672	12,611			570,090
1990	207,556	129,271	40,230	4,645			381,702
1991	153,023	199,853	63,405	9,601		103	425,985
1992	168,507	232,179	66,384	3,825		3	470,898
1993	184,953	124,829	62,252	4,360			376,394
1994	161,758	112,254	9,356	4,376			287,744
1995	141,793	145,844	7,166	3,269			298,072
1996	167,911	162,456	25,055	4,583			360,005
1997	223,801	164,756	32,430	4,729			425,716
1998	154,132	116,682	8,826	8,970			288,610
1999	199,491	156,874	13,715	15,041		19	385,140
2000	316,836	205,241	73,383	29,536		1	624,997
2001	629,334	503,327	102,562	64,557			1,299,780
2002	583,155	387,920	40,554	12,786			1,024,415
2003	618,472	282,574	34,180	46,101	29	128	981,484
2004	562,737	241,123	107,466	41,645	5	0	952,976
2005	389,905	244,213	65,273	36,129	0	23	735,543
2006	341,371	249,223	30,026	34,339	3	3	654,965
2007	253,613	246,960	19,124	32,961	11	1	552,670
2008	397,766	277,640	177,984	42,682	0	12	896,084
2009	525,837	515,111	155,591	77,492	7	28	1,274,066
2010	618,699	333,033	325,133	31,374	0	1	1,308,240
2011	591,869	299,007	138,293	76,753	3	1,158	1,107,083
2012	539,930	201,640	410,099	34,019	7	2	1,185,697
2013	898,424	190,750	161,896	26,682	4	87	1,277,843
2014	905,449	255,691	586,188	157,646	0	2	1,904,976
2015	1,068,378	217,018	429,797	26,959	0	137	1,742,289
2016	585,090	145,027	288,401	22,909	0	1	1,041,428
2017	394,690	96,803	64,058	36,911	0	7	592,469
2018	264,744	80,717	152,101	24,430	0	0	521,992
2019	301,131	60,994	50,726	43,230	0	23	456,104
Totals	20,580,121	11,192,277	5,861,726	1,361,975	265	1,814	38,998,178
10-Year Average	616,840	188,068	260,669	48,091			1,113,812

*Jacks included

TABLE 45
MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM 1957 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	SPRING	SUMMER	FALL	JACKS
														1 JAN- 3 JUN	4 JUN- 3 AUG	4 AUG- 31 DEC	
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				13,270	22,893	8,766	8,430	12,501	73,942	16,388			156,190	36,856	17,051	102,283	41,335
1984				9,326	23,784	9,992	12,332	23,495	105,786	19,205			203,920	33,848	22,472	147,600	70,798
1985				36,035	39,173	15,785	10,332	37,806	203,470	27,058	1,323		370,982	76,514	25,385	269,083	145,007
1986			175	48,892	36,928	14,175	10,452	22,684	264,091	45,616			443,013	87,004	24,826	331,183	176,461
1987				48,812	27,586	17,923	12,145	50,680	236,216	27,828			421,190	77,453	30,804	312,933	65,115
1988				51,680	20,756	16,644	13,494	66,509	193,490	15,507			378,080	73,663	29,892	274,525	69,631
1989				24,474	27,477	15,539	13,899	58,674	130,931	10,438	736		282,168	53,014	30,555	198,599	28,671
1990			115	36,062	20,749	13,390	9,099	22,152	96,538	9,451			207,556	57,424	22,615	127,517	32,794
1991				14,513	17,313	10,949	7,638	8,384	84,861	9,365			153,023	32,359	18,467	102,197	36,820
1992				38,141	19,414	9,595	5,797	14,589	71,281	9,690			168,507	58,451	14,976	95,080	27,160
1993				42,391	25,824	14,165	6,481	19,297	71,395	5,400			184,953	69,356	20,063	95,534	12,298
1994				6,573	4,938	7,376	8,360	22,910	98,997	12,604			161,758	11,798	15,997	133,963	25,470
1995				3,008	4,244	6,176	7,111	23,094	82,723	15,437			141,793	7,553	13,558	120,682	32,813
1996				5,631	20,896	8,018	6,718	26,505	90,762	9,381			167,911	27,127	14,488	126,296	5,851
1997				25,639	42,467	14,718	8,011	23,666	100,652	8,648			223,801	69,740	21,134	132,704	16,249
1998				14,927	10,488	10,289	6,702	20,129	78,191	13,406			154,132	25,743	16,906	111,483	20,513
1999				5,396	17,579	10,972	13,864	30,830	107,411	13,439			199,491	23,743	24,937	150,811	28,412
2000				68,618	47,131	20,878	15,442	57,600	97,042	10,125			316,836	117,749	35,580	163,507	63,769
2001				228,568	79,627	50,030	35,889	38,452	172,871	23,897			629,334	313,865	80,249	233,081	72,644
2002				63,869	116,008	76,400	45,761	63,943	197,956	19,218			583,155	185,046	118,812	279,297	42,982
2003			11	7,227	84,312	54,173	70,347	43,926	280,091	33,070	3,085	84	618,472	149,967	111,931	356,574	62,007
2004				272	74,705	59,127	59,859	30,999	41,935	261,434	32,361	2,017	562,737	138,229	87,925	336,583	48,732
2005			1	44	18,797	41,560	48,505	27,685	25,764	203,518	23,064	9	389,905	64,219	73,136	252,550	24,991
2006				9	1,006	61,711	58,394	26,404	24,419	141,212	26,060	2,140	341,371	64,012	84,839	192,520	27,212
2007			1	51	19,338	46,147	34,405	19,510	21,415	93,517	17,883	1,326	253,613	68,253	52,062	133,298	65,306
2008					21,531	86,590	58,430	21,041	46,608	147,583	15,983		397,766	111,239	77,279	209,248	66,298
2009					8,464	132,674	83,688	30,189	74,468	176,655	19,699		525,837	147,554	107,794	270,489	175,120
2010					83,785	108,482	72,234	29,689	45,375	246,464	32,670		618,699	201,385	93,820	323,494	75,458
2011					8,526	150,084	76,725	47,267	37,941	230,089	41,237		591,869	164,310	120,968	306,591	151,007
2012					8,662	110,476	52,142	31,102	44,449	257,070	33,903	2,088	539,930	124,262	79,614	336,054	126,554
2013		4	2	18	18,841	79,731	70,063	37,731	99,513	513,045	79,494		898,424	101,513	106,389	690,522	141,021
2014					34,797	123,507	73,974	45,718	45,707	513,377	68,369		905,449	164,222	115,659	625,568	133,342
2015					103,729	95,758	89,752	53,573	78,324	524,977	122,265		1,068,378	206,423	139,373	722,582	115,226
2016					11,830	98,780	67,404	40,341	57,734	283,586	25,415		585,090	115,503	104,564	365,023	69,544
2017					660	65,479	54,335	28,049	20,970	182,869	37,614	4,622	394,690	70,806	78,523	245,361	50,114
2018		5	4	**	1,346	57,605	41,198	15,174	25,579	101,404	22,429		264,744	62,728	53,083	148,933	30,671
2019					864	40,377	34,137	17,820	26,711	147,602	33,620		301,131	43,804	50,145	207,182	40,069
Total				9,829	2,196,369	2,899,067	2,060,344	1,465,023	1,916,327	8,860,013	1,153,373	19,490	20,580,121	5,244,470	3,471,099	11,862,190	3,835,567
10-Year Average				27,304	93,028	63,196	34,646	48,230	300,048	49,702			616,840	125,496	94,214	397,131	93,301

*Jacks included

**No fish count data for March in 2013 and 2018

TABLE 46

MONTHLY COUNT OF SOCKEYE SALMON
THE DALLES DAM
1957 - 2019

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	0				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					0	8,887	66,841	369	6				76,103
1972					0	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	0				28,827
1975					0	7,679	35,291	225	2	1			43,198
1976					1	10,988	16,637	121	0				27,747
1977					5	60,049	26,146	52	0				86,252
1978					24	7,158	4,559	104	0				11,845
1979					0	14,750	17,734	307	0				32,791
1980					0	11,096	30,046	927	19				42,088
1981					0	17,692	17,686	68	1				35,447
1982					0	11,430	21,742	144	15				33,331
1983					1	34,684	49,302	197	19	1			84,204
1984					0	62,500	37,926	745	6				101,177
1985				1	17	75,603	41,107	521	4		1		117,254
1986					12	17,224	30,686	550	4	1			48,477
1987					1	48,798	38,443	348	8	1			87,599
1988					5	30,443	25,096	208	50				55,802
1989					1	22,196	17,321	152	2				39,672
1990					0	17,603	22,406	218	3				40,230
1991					1	14,106	48,824	443	27	4			63,405
1992					16	38,319	27,812	232	4	1			66,384
1993					2	36,517	25,584	146	3				62,252
1994					0	6,752	2,594	8	2				9,356
1995					1	4,195	2,890	61	15	4			7,166
1996					0	17,013	7,983	44	15				25,055
1997					4	11,707	20,292	395	29	3			32,430
1998					0	4,777	3,978	65	6				8,826
1999					0	5,210	8,445	57	3				13,715
2000					69	61,980	11,242	88	4				73,383
2001					12	85,939	16,527	82	2				102,562
2002					1	22,714	17,746	93	0				40,554
2003					8	21,233	12,862	70	3			4	34,180
2004					61	84,332	22,978	94	1				107,466
2005					4	38,474	26,688	98	7	2			65,273
2006					1	20,817	9,099	105	4				30,026
2007					10	13,475	5,540	99	0				19,124
2008					6	152,255	25,678	45	0				177,984
2009					27	114,162	41,260	126	16				155,591
2010					1	45	235,935	88,980	168	3	1		325,133
2011					1	50,335	87,699	255	3				138,293
2012					15	270,789	139,045	248	2				410,099
2013					1	24	89,464	71,889	514	4			161,896
2014					13	257,785	327,001	1,330	59				586,188
2015					113	290,869	136,068	2,448	273	26			429,797
2016					113	230,899	56,414	887	83	5			288,401
2017					14	40,575	23,139	250	76	4			64,058
2018					4	102,292	49,412	324	66	3			152,101
2019					8	33,503	16,925	212	39	39			50,726
Total				3	1,955	3,171,058	2,657,185	29,744	1,670	106	1	4	5,861,726
10-Year Average					35	160,245	99,657	664	61				260,669

TABLE 47
MONTHLY COUNT OF COHO SALMON
THE DALLES DAM: 1957-2019

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	2,343	1,051			3,459	2,256
1984								24	2,521	597			3,142	1,282
1985							4	208	3,537	828	48		4,625	1,555
1986							2	1	3,772	1,067			4,842	1,458
1987							12	91	2,409	798			3,310	1,953
1988								232	7,082	1,912			9,226	2,701
1989								283	9,027	3,173	128		12,611	4,781
1990								60	3,229	1,356			4,645	2,340
1991								30	7,714	1,857			9,601	1,053
1992								11	3,119	695			3,825	1,239
1993								18	3,256	1,086			4,360	3,416
1994							1	121	2,922	1,332			4,376	590
1995							6	204	2,013	1,046			3,269	483
1996							3	73	3,795	712			4,583	967
1997								35	3,649	1,045			4,729	662
1998								7	3,520	5,443			8,970	774
1999								37	11,456	3,548			15,041	1,226
2000								2,248	20,526	6,762			29,536	4,570
2001								1,351	36,099	27,107			64,557	2,179
2002								275	8,286	4,225			12,786	3,021
2003								1,084	29,129	15,161	713	14	46,101	2,853
2004								565	29,591	10,408	1,072	10	41,645	1,919
2005		-1					1	438	20,376	13,814	1,500	0	36,129	2,187
2006							1	1,541	18,080	12,574	2,142	1	34,339	2,468
2007								596	17,545	14,608	198	14	32,961	2,095
2008								1,369	26,714	14,599			42,682	4,700
2009							4	8,214	29,912	39,362			77,492	8,552
2010								1,082	20,090	10,202			31,374	2,283
2011							2	3,172	52,196	21,383			76,753	4,633
2012							8	2,262	28,707	2,921	119	2	34,019	2,861
2013								840	17,205	8,637			26,682	2,572
2014								711	134,991	21,944			157,646	10,843
2015								510	22,447	4,002			26,959	3,182
2016								458	18,494	3,957			22,909	1,902
2017								392	28,602	7,734	305	15	37,048	3,139
2018		3	1					1,769	18,394	4,263			24,430	2,477
2019							1	1,094	26,111	16,024			43,230	4,488
Total							1,585	51,362	971,177	331,555	6,374	56	1,362,112	249,956
10-Year Average							1,229	36,724	10,107				48,105	3,838

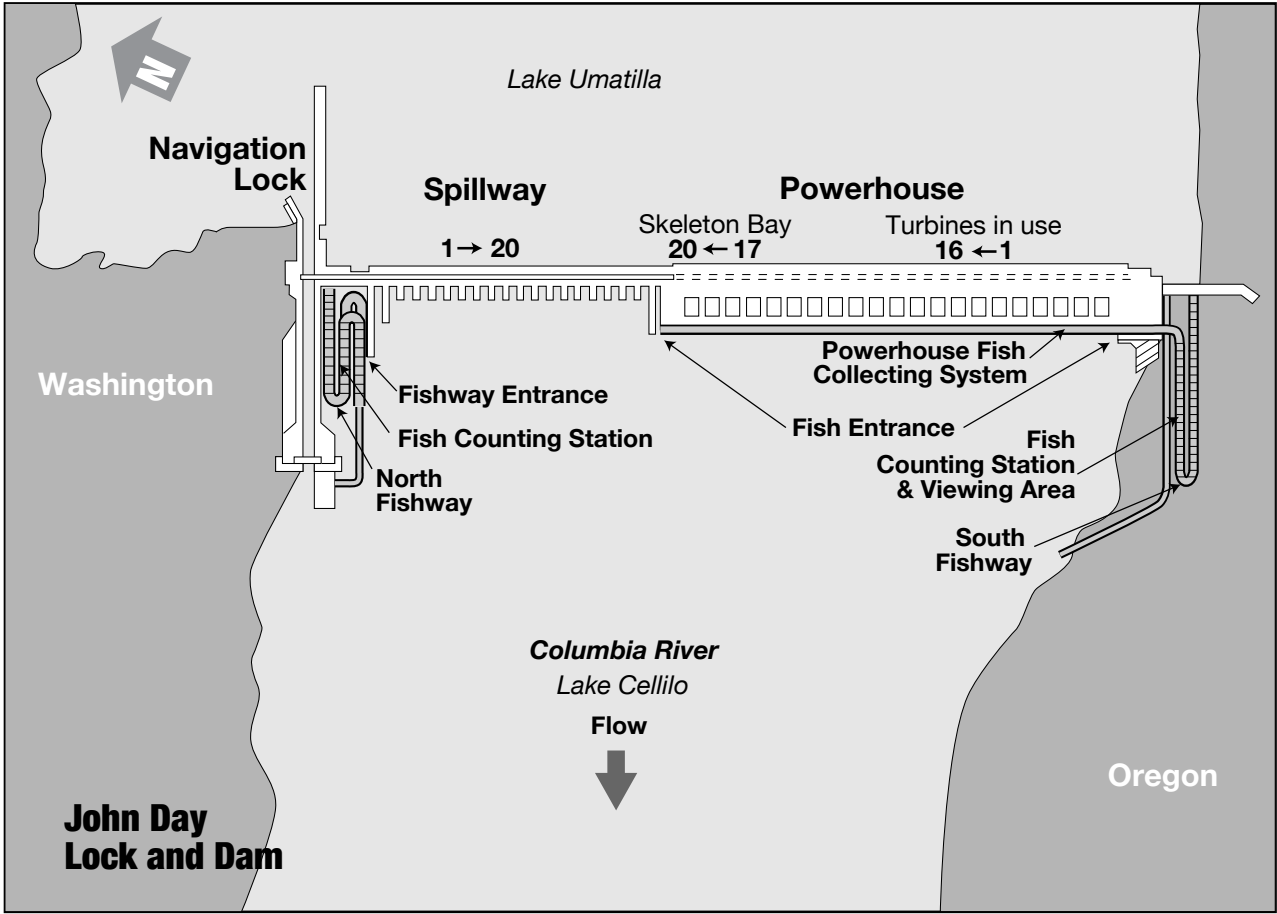
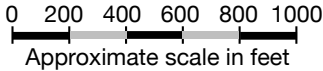
*Includes Jacks

TABLE 48

MONTHLY COUNT OF STEELHEAD
THE DALLES DAM 1957 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	
1957			1,603	951	977	4,782	45,445	33,319	35,396	6,545	343		129,361	
1958			122	274	1,898	4,906	20,384	11,442	75,036	6,846	512		121,420	
1959			1	541	502	2,227	46,271	60,841	41,026	4,502	179		156,090	
1960				289	557	2,591	28,218	32,667	42,447	4,021	399		111,189	
1961				305	307	1,396	21,906	17,850	87,344	5,464			134,572	
1962				528	252	1,068	36,609	31,507	87,463	5,874			163,301	
1963				153	451	1,361	30,485	25,360	48,066	13,081			118,957	
1964			50	369	127	493	36,773	31,742	38,197	2,282			110,033	
1965			36	502	484	896	60,522	21,132	53,389	4,091			141,052	
1966		25	788	933	600	3,816	52,975	26,382	53,721	6,932			146,172	
1967				258	183	435	27,914	22,746	56,082	13,996			121,614	
1968			23	691	344	973	20,974	58,866	57,666	7,456	488		147,481	
1969			54	953	414	1,442	33,952	22,963	44,146	8,605			112,529	
1970				337	172	733	15,905	32,752	44,823	4,465			99,187	
1971				408	233	821	40,712	31,812	69,602	7,760			151,348	
1972				463	159	604	35,569	30,631	63,748	4,129			135,303	
1973				723	326	1,981	29,067	25,437	38,017	4,531			100,082	
1974				529	1,362	1,859	24,779	21,835	15,059	5,452			70,875	
1975				1,018	1,334	1,973	18,046	20,531	11,519	3,254			57,675	
1976				768	1,604	3,357	22,021	30,386	21,586	2,846			82,568	
1977				1,666	1,332	5,038	42,859	13,022	61,678	8,287			133,882	
1978				834	1,378	3,459	13,493	11,457	26,189	3,675			60,485	
1979				478	244	1,942	23,054	21,974	20,961	14,079	632		83,364	
1980				2,885	790	2,134	15,114	30,755	34,447	7,838			93,963	
1981				1,389	1,632	3,768	34,242	36,537	26,837	8,863			113,268	
1982				729	1,289	2,710	22,607	31,410	49,050	9,639			117,434	
1983				438	324	1,492	37,029	47,521	75,210	9,041			171,055	
1984				846	894	3,715	52,825	36,859	107,377	16,607			219,123	
1985				2,405	1,511	5,679	41,534	102,866	107,574	13,337	1,119		276,025	
1986		1,395		610	712	4,492	78,494	60,458	111,066	24,726			281,953	
1987				1,069	366	3,280	55,395	58,850	76,461	22,347			217,768	
1988				2,520	969	3,984	34,612	54,986	85,061	16,367			198,499	
1989				1,810	849	3,950	35,167	45,694	119,322	25,880	2,967		235,639	
1990		1,169		1,515	920	3,078	17,942	17,772	58,805	28,070			129,271	
1991				1,826	630	1,755	25,686	37,560	104,833	27,563			199,853	
1992				1,104	743	3,494	18,753	37,269	157,216	13,600			232,179	
1993				2,367	731	3,847	17,962	20,194	61,600	18,128			124,829	
1994				1,327	391	2,263	11,434	11,703	55,247	29,889			112,254	
1995				435	407	2,329	11,953	46,428	59,604	24,688			145,844	
1996				669	481	1,981	20,317	61,136	65,400	12,472			162,456	
1997				658	483	2,187	18,916	34,055	84,006	24,451			164,756	
1998				609	433	2,433	9,911	12,180	62,331	28,785			116,682	
1999				279	343	1,625	25,277	56,665	60,762	11,923			156,874	
2000				491	319	6,467	37,760	48,697	96,040	15,467			205,241	
2001				788	582	13,063	100,501	95,859	226,711	65,823			503,327	
2002					2,308	439	7,027	67,132	84,140	170,382	56,492		387,920	
2003		485	2,389	801	271	4,882	36,960	35,275	158,525	36,458	6,004	524	282,574	
2004		140	1,072	1,066	680	7,116	23,581	30,398	152,302	23,099	1,647	22	241,123	
2005		107	688	558	616	4,483	33,476	33,332	126,710	41,174	3,020	49	244,213	
2006		16	811	972	252	2,241	15,892	43,884	138,845	33,537	12,641	132	249,223	
2007		195	1,948	1,033	255	2,155	25,008	66,310	121,058	26,079	2,776	143	246,960	
2008				1,084	383	4,847	69,771	47,273	131,616	22,666			277,640	
2009				986	392	4,181	51,667	165,723	233,187	58,975			515,111	
2010				1,901	580	10,348	104,984	55,209	128,816	31,195			333,033	
2011					1,098	352	1,611	56,247	127,161	91,517	21,021		299,007	
2012					631	258	2,809	49,514	54,567	71,995	18,065	2,631	220	201,640
2013		6	73	**	560	220	1,723	32,103	41,629	93,711	20,725		190,750	
2014					361	567	4,214	48,455	38,611	134,160	29,323		255,691	
2015					280	181	2,399	21,871	51,038	110,344	30,905		217,018	
2016					288	71	3,496	17,437	13,969	87,341	22,425		145,027	
2017					136	64	306	4,984	12,098	64,951	12,694	422	70	96,803
2018		12	31	**	97	38	1,439	10,258	9,648	46,076	13,118		80,717	
2019					202	21	572	8,587	10,731	27,662	13,219		60,994	
Total				14,177	55,102	36,679	193,728	2,129,291	2,543,104	5,067,319	1,114,847	35,780	11,192,277	
10-Year Average				555	235	2,892	35,444	41,466	85,657	21,269			188,068	

Plate 4 John Day Lock and Dam



JOHN DAY DAM

FISH COUNTING SCHEDULE

Mar 1 – 31	Video counting daily 0400-2000 hours Pacific Standard Time.
Apr 1 – Oct 31	Visual counting daily 0400-2000 hours Pacific Standard Time.
June15 – Sept 30	Nighttime video counts 2000-0400 hours Pacific Standard Time.
Nov 1 – Dec 31	Video counting daily 0400-2000 hours Pacific Standard Time.

FISHWAY OPERATING SCHEDULE

2019 JOHN DAY FISHWAYS' OPERATING SCHEDULE	
PERFORMANCE STATUS	TIME
NORTH ADULT FISHWAY	
REGULAR OPERATION W/ AWS	January 17th - November 30th
AWS OFF HALF DAY FOR ROV INSP.	N/A
ON ORIFICE FLOW - NO AWS OPERATION	November 30th - December 3rd
DEWATERED FOR MAINTENANCE	December 3rd - December 31st
SOUTH ADULT FISHWAY	
REGULAR OPERATION W/AWS	[January 1st - January 18th] [February 26th - December 31st]
AWS OFF HALF DAY FOR ROV INSP.	August 14th
DEWATERED FOR MAINTENANCE	January 22nd - February 26th
SMOLT MONITORING FACILITY	
DEWATERED FOR MAINTENANCE	[January 1st - March 13th], [December 5th - December 31st]
LIMITED SAMPLING; WATER TEMP > 70F	July 25th - September 15th
REGULAR SAMPLING MODE (every other day)	March 1st - July 24th
BYPASS FOR PIT DETECTIONS	September 16th-December 5th
JUVENILE BYPASS SYSTEM	
REGULAR OPERATION WITH ALL STs DEPLOYED	March 1st - December 15th (kelt protection)
SPILLWAY WITH 2 TSWs (at bay 18 & 19)	
ON SEAL	January 1st - April 9th
FISH SPILL PER FPP SCHEDULE	April 10th - August 31st
1.5 KCFS, BAY 2 ONLY FOR NFL ATTRACTION	September 1st - November 29th
EARLY TSW SPILL (due to HIGH FLOWS)	N/A
ON SEAL	November 30th - December 31st

FISHWAY ACTIVITIES

FISHWAY DEWATERING PROCEDURES

During fishways dewaterings, bulkheads were installed and drain valves were opened. After the areas were dewatered, fisheries personnel entered and salvaged any stranded fish (see table below). Salvaged fish were transported to either the forebay or tailwater (depending on circumstances such as fish species, dewatering location, age class, or stress levels). Follow up inspections were performed to account for any overlooked fish. Efforts were made to provide continual water supplies throughout the

operation, to minimize fish stress. Minimal fish handling practices were utilized throughout the process. Fishway areas not listed were inspected by a Remote Operated Vehicle (ROV). There were 5 juvenile lamprey mortalities, and 1 adult steelhead encountered during the 2019 JD Fishway dewaterings.

TURBINE DEWATERING PROCEDURES

When following operational guidelines, turbine dewatering requires minimal fish handling. If a turbine unit fails, operational guidelines cannot always be followed, which may result in stranded fish. Fish removed from these areas face higher risks, due to increased handling. Procedures are continually evaluated to determine the best methods to reduce fish stress and mortality. Currently, fish are removed from scroll cases and draft tubes with fish bags. Prior to fish salvage, transport tanks are prepped for fish transport. If fish numbers are higher than the two bags can safely handle, the transport tanks are used to remove fish. The fish are then released by crane.

2019 John Day Fish Salvage Report												
Key: adult=a, juvenile=j, carp=cp, catfish=ct, sculpin=sp, small mouth bass=smb, crappie=cr, whitefish=wf, perch=pr, bluegill=bg, walleye=we, Sturgeon=st, shad-sh, Chinook-Ch, steelhead-STH, coho-co, sockeye-so, lamprey-la Released In Good Condition=RIGC												
Date	Event	CH	STH	SO	CO	LA	Shad	Other	Comments	Mort	Cause	
1/22	SFL-Upper Dewater	0	4J	0	0	26A	0	0	RIGC north forebay: Lamprey 18-28", TW: STH 4J ~12"	0	N/A	
1/30	JBS CC and conduit	0	3 Adult	0	0	0	0	0	1 Adult Mort, 2 Adult RIGC into FB.	1STH	No O2	
4/16	MU-3 Scroll Case	0	0	0	0	0	0	0	No Fish	0	N/A	
11/5	MU1 Scroll Case	0	0	0	0	0	0	0	No Fish	0	N/A	
11/5	MU1Draft Tube	0	0	0	0	0	0	10 cats	10 cats bagged and RIGC into TW	0	N/A	
12/2	NFL-Upper	0	1-A, 2-J	0	0	0	10	1-pr	RIGC: STH (15", 2x5") PR: 4"	0	N/A	
12/5	SMF	15	2Adult	0	0	3A	10	8 ct, 1 cp, 3 pr	~ 100 macrophalmia + 1 Adult sturgeon ~ 15", ~45sculpin	5 j LA	Unk	
12/10	NFL-Lower	0	1-J	0	0	0	16	2 smb, 1 cr	RIGC	0	N/A	

RESEARCH

Oregon Dept. of Fish and Wildlife – Ongoing BPA funded research associated with the Northern Pikeminnow Management Program. The fish stomachs’ sampler collected the diet and other biological data from NPMs caught by the PSMFC dam anglers.

Oregon Department of Fish and Wildlife/ Fish Passage Center- Continued to perform the monthly, FPOM-directed inspections of all JD adult and juvenile fishways (see the FPC’s annual report.)

CRITFC- Collected adult Pacific lamprey for the tribal restocking projects. The Umatilla, Nez Perce, Warm Springs, and Yakama tribes were all involved in 2017.

Pacific States Marine Fish Commission – sampled juvenile salmonids at JD SMF 1 April through 15 September. Please see the FPC report for results and details.

TABLE 49

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER JOHN DAY DAM
2019

DAYTIME-Live plus video

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*	5	2		501	36,976	31,337	18,288	15,707	116,429	30,732			249,977
STEELHEAD	109	23		223	14	347	4,520	4,084	25,071	16,695			51,086
SOCKEYE					3	30,762	21,544	200	17	0			52,526
COHO*	8	-2					2	443	19,910	13,756			34,117
CHUM													0
PINK									1	3			4
TOTAL	122	23		724	36,993	62,446	44,354	20,434	161,428	61,186			387,710
LAMPREY	2	1			28	532	2,454	1,376	199	-3			4,589
STURGEON							1						1
BULL TROUT													0

NIGHT-Video

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*						507	237	271	2,153				3,168
STEELHEAD						7	83	215	3,818				4,123
SOCKEYE						2,893	2,590	68	10				5,561
COHO*								9	2,009				2,018
CHUM													0
PINK													0
TOTAL						3,407	2,910	563	7,990				14,870
LAMPREY						1,216	3,649	1,694	465				7,024

*Jacks Included

note: Shad no longer counted at John Day Dam. For count schedules refer to the John Day Dam narrative.
For 24 hour annual totals add the daytime and night totals.

TABLE 50

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

JANUARY 2019

DATE	CHINOOK ADULT		CHINOOK COHO		COHO		unclipped						DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY			STURGEON	SECCHI	DEG F
Jan 1	0				1	0		18	7			0		121.6	0.0	6.0	43.8
Jan 2	0				-1	0		2	2			0		125.3	0.0	6.0	43.6
Jan 3	0				2	-4		3	1			0		113.9	0.0	6.0	43.4
Jan 4	0				1	0		3	0			0		113.3	0.0	6.0	43.2
Jan 5	0				0	1		1	1			0		141.7	0.0	6.0	42.9
Jan 6	0				0	-8		7	3			0		117.9	0.0	6.0	42.8
Jan 7	0				1	-4		4	1			0		121.8	0.0	6.0	42.6
Jan 8	0				0	0		1	0			0		141.9	0.0	6.0	42.3
Jan 9	0				0	1		0	0			0		133.3	0.0	6.0	42.1
Jan 10	0				0	3		0	0			0		142.5	0.0	6.0	42.1
Jan 11	0				0	1		0	0			0		147.2	0.0	6.0	42.0
Jan 12	0				0	1		1	1			1		138.0	0.0	6.0	41.8
Jan 13	0				0	1		1	0			1		107.3	0.0	6.0	41.5
Jan 14	0				0	0		0	0			1		139.5	0.0	6.0	41.2
Jan 15	0				0	-5		1	0			0		146.3	0.0	6.0	41.0
Jan 16	0				0	1		0	0			0		151.0	0.0	6.0	41.0
Jan 17	0				0	0		0	0			-1		136.4	0.0	6.0	40.9
Jan 18	0				0	0		2	1			0		116.4	0.0	6.0	40.7
Jan 19	4				0	0		0	0			0		107.1	0.0	6.0	40.6
Jan 20	0				0	1		2	2			0		103.8	0.0	6.0	40.5
Jan 21	0				4	-1		1	1			0		95.6	0.0	6.0	40.5
Jan 22	0				6	1		8	2			0		128.4	0.0	6.0	40.6
Jan 23	0				2	0		12	9			0		104.6	0.0	6.0	40.7
Jan 24	1				0	0		7	2			0		127.3	0.0	6.0	40.9
Jan 25	0				1	0		6	5			0		120.7	0.0	6.0	40.9
Jan 26	0				2	0		8	1			0		125.0	0.0	6.0	40.9
Jan 27	0				0	0		6	2			0		108.6	0.0	6.0	40.9
Jan 28	0				0	0		1	0			0		113.8	0.0	6.0	40.9
Jan 29	0				0	0		1	0			0		131.5	0.0	6.0	40.8
Jan 30	0				0	0		7	3			0		134.8	0.0	6.0	40.9
Jan 31	0				0	0		6	2			0		137.9	0.0	6.0	40.9
TOTAL	5				19	-11		109	46			2					
AVG.	0				1	0		4	1			0		125.6	0.0	6.0	41.6

Note: From February 21 to March 31, counts were from video tape. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.

TABLE 51

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS													FEBRUARY 2019			
DATE	CHINOOK ADULT			CHINOOK COHO		unclipped					DISCH KCFS	SPILL KCFS	TURBIDITY			
	SPRING	SUMMER	FALL	JACK ADULT	JACK COHO	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM			LAMPREY	STURGEON	SECCHI	DEG F
Feb 1	0			0	0		2	1			0		131.2	0.0	6.0	41.0
Feb 2	0			0	0		1	0			0		135.5	0.0	6.0	40.9
Feb 3	0			0	0		2	1			0		123.2	0.0	6.0	40.8
Feb 4	0			0	0		3	2			0		124.2	0.0	6.0	40.6
Feb 5	0			0	0		1	0			0		132.6	0.0	6.0	40.4
Feb 6	0			0	0		3	2			0		140.2	0.0	6.0	40.0
Feb 7	0			0	0		1	0			0		127.2	0.0	6.0	39.5
Feb 8	0			0	0		0	0			0		128.3	0.0	6.0	39.1
Feb 9	0			0	-1		1	0			0		123.6	0.0	6.0	38.7
Feb 10	0			0	0		0	0			0		125.1	0.0	6.0	38.4
Feb 11	0			0	0		1	1			0		116.0	0.0	6.0	38.0
Feb 12	0			0	0		1	0			0		126.1	0.0	6.0	37.4
Feb 13	0			0	0		1	0			0		133.4	0.0	6.0	37.1
Feb 14	0			0	0		1	0			0		138.2	0.0	6.0	36.6
Feb 15	0			0	0		1	1			0		116.8	0.0	6.0	36.3
Feb 16	0			0	0		0	0			0		130.2	0.0	6.0	35.9
Feb 17	0			0	0		0	0			0		137.3	0.0	6.0	35.5
Feb 18	1			0	0		0	0			0		140.9	0.0	6.0	35.5
Feb 19	1			0	0		0	0			0		135.5	0.0	6.0	35.5
Feb 20	0			0	0		0	0			0		118.7	0.0	6.0	35.7
Feb 21	0			0	0		2	0			0		113.9	0.0	6.0	35.6
Feb 22	0			-1	0		0	0			0		136.1	0.0	6.0	35.4
Feb 23	0			0	0		0	0			0		138.6	0.0	6.0	35.5
Feb 24	0			0	0		0	0			0		142.1	0.0	6.0	35.7
Feb 25	0			0	0		0	0			0		127.2	0.0	6.0	35.8
Feb 26	0			0	0		0	0			0		134.1	0.0	6.0	35.7
Feb 27	0			0	0		1	0			0		135.8	0.0	6.0	35.7
Feb 28	0			0	0		1	0			1		123.7	0.0	6.0	35.9
TOTAL	2			-1	-1		23	8			1					
AVG.													129.8	0.0	6.0	37.4

Note: From February 21 to March 31, counts were from video tape. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.

TABLE 52

DISCHARGE AND WATER QUALITY DATA

JOHN DAY PROJECT 2019

MARCH

DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Mar 1	111.0	0.0	6.0	36.0
Mar 2	113.1	0.0	6.0	35.9
Mar 3	115.2	0.0	6.0	35.8
Mar 4	133.3	0.0	6.0	35.7
Mar 5	140.8	0.0	6.0	35.4
Mar 6	154.6	0.0	6.0	35.3
Mar 7	163.7	0.0	6.0	35.4
Mar 8	142.9	0.0	6.0	35.5
Mar 9	156.8	0.0	6.0	35.5
Mar 10	143.3	0.0	6.0	35.5
Mar 11	128.0	0.0	6.0	35.7
Mar 12	121.6	0.0	6.0	36.2
Mar 13	116.5	0.0	6.0	36.6
Mar 14	108.6	0.0	6.0	36.9
Mar 15	125.4	0.0	6.0	37.2
Mar 16	108.6	0.0	6.0	37.5
Mar 17	133.0	0.0	6.0	37.7
Mar 18	127.7	0.0	6.0	38.0
Mar 19	117.2	0.0	6.0	38.5
Mar 20	124.6	0.0	6.0	39.0
Mar 21	115.6	0.0	6.0	39.5
Mar 22	149.1	0.0	6.0	39.9
Mar 23	157.3	0.0	6.0	40.5
Mar 24	166.5	0.0	4.0	41.0
Mar 25	170.1	0.0	5.0	41.9
Mar 26	179.2	0.0	3.5	42.2
Mar 27	174.5	0.0	3.5	42.7
Mar 28	184.4	0.0	3.5	43.2
Mar 29	179.8	0.0	3.5	43.7
Mar 30	175.0	0.0	3.5	44.0
Mar 31	185.5	0.0	4.0	44.4

AVG.	142.7	0.0	5.4	38.5
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TABLE 53

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS													APRIL 2019				
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped					DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Apr 1	0			0				19	12				168.7	0.0	5.0	45.0	
Apr 2	0			0				5	3				147.3	0.0	3.5	45.2	
Apr 3	0			0				18	9				129.4	0.0	3.5	45.4	
Apr 4	2			0				13	8				153.7	0.0	3.5	45.7	
Apr 5	1			0				6	5				164.0	0.0	3.5	46.1	
Apr 6	3			0				14	10				187.9	0.0	3.5	46.5	
Apr 7	1			0				14	9				200.9	0.0	3.5	46.7	
Apr 8	3			0				9	7				187.6	0.0	3.5	47.1	
Apr 9	2			1				3	1				226.2	19.7	4.0	47.6	
Apr 10	2			0				8	7				344.6	142.6	4.0	48.1	
Apr 11	6			1				9	2				325.2	130.0	3.5	48.2	
Apr 12	1			1				16	12				294.2	124.5	3.5	48.3	
Apr 13	0			0				14	6				242.3	120.7	4.0	48.4	
Apr 14	4			0				11	7				228.0	120.6	2.0	48.4	
Apr 15	0			0				8	5				234.9	121.5	2.0	48.7	
Apr 16	3			0				6	2				208.7	122.6	2.0	49.1	
Apr 17	2			0				9	7				216.9	123.2	1.5	49.3	
Apr 18	8			0				11	7				214.4	122.8	1.5	49.8	
Apr 19	15			0				7	5				229.7	126.3	1.5	50.2	
Apr 20	14			0				1	1				210.8	122.7	1.5	50.7	
Apr 21	24			0				1	0				251.5	128.7	1.5	50.7	
Apr 22	5			0				4	3				281.6	131.5	1.5	50.8	
Apr 23	4			0				5	3				293.1	136.7	1.5	51.0	
Apr 24	23			0				4	1				323.6	150.1	1.0	51.5	
Apr 25	24			1				4	3				343.2	160.2	1.0	52.3	
Apr 26	60			1				0	1				309.7	151.0	1.5	52.8	
Apr 27	69			0				2	1				285.4	141.4	1.5	53.1	
Apr 28	62			0				0	0				287.5	145.5	2.0	53.2	
Apr 29	71			0				0	0				280.2	143.1	2.5	53.3	
Apr 30	85			2				2	2				267.0	142.2	2.5	53.1	
TOTAL	494			7				223	139								
AVG.	16			0				7	5				241.3	94.3	2.6	49.2	

Note: Visual counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.
Official Spring Chinook run started April 1.

TABLE 54

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped			PINK	CHUM	LAMPREY	STURGEON	DISCH SPILL TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD					KCFS	KCFS	SECCHI	DEG F
May 1	79			4			0	1	1			0	257.6	139.2	2.5	52.8	
May 2	157			5			0	3	3			0	240.3	138.4	2.5	52.4	
May 3	231			11			0	0	0			0	244.4	137.8	2.5	52.5	
May 4	637			1			0	0	0			0	242.7	138.6	2.5	52.6	
May 5	1,404			21			0	0	0			0	226.4	136.5	2.5	52.8	
May 6	1,007			40			0	0	0			0	232.7	136.5	2.5	53.3	
May 7	1,627			108			0	1	1			1	235.1	136.8	3.5	53.7	
May 8	1,514			121			0	0	0			1	234.0	137.6	4.0	54.1	
May 9	1,959			183			0	0	0			2	246.6	140.8	3.5	54.9	
May 10	2,992			246			0	1	1			6	254.3	141.1	4.0	54.6	
May 11	1,671			114			1	1	1			0	277.8	137.6	4.0	54.9	
May 12	2,415			149			0	0	0			1	272.4	134.5	4.0	55.3	
May 13	1,652			212			0	0	0			3	275.0	135.5	4.0	55.7	
May 14	1,607			357			0	1	1			-1	300.4	141.1	4.0	55.9	
May 15	1,043			277			0	1	0			0	333.2	148.2	4.0	56.1	
May 16	1,031			296			0	0	0			0	327.0	146.1	4.0	56.1	
May 17	1,053			331			0	0	-1			0	317.6	143.6	4.0	56.3	
May 18	915			258			0	1	1			3	349.2	168.0	4.0	56.7	
May 19	736			267			0	1	1			1	353.6	151.4	3.5	56.6	
May 20	851			261			0	0	0			1	332.3	158.4	3.5	56.0	
May 21	970			292			0	0	0			-1	302.7	147.1	3.5	55.8	
May 22	839			309			0	0	0			2	297.5	138.8	4.0	55.7	
May 23	593			170			0	0	0			6	294.4	138.5	4.0	56.0	
May 24	649			219			0	0	0			2	261.4	144.8	4.0	56.2	
May 25	687			168			0	1	1			-1	279.2	133.0	4.0	56.2	
May 26	478			175			0	0	0			-4	286.3	132.4	4.0	56.4	
May 27	549			183			0	0	0			-4	269.5	130.3	4.0	56.5	
May 28	581			191			0	0	0			0	292.9	133.7	4.0	56.5	
May 29	548			164			0	0	0			5	295.3	134.0	4.0	57.2	
May 30	571			173			0	1	1			2	300.7	133.3	4.0	57.4	
May 31	496			128			2	1	1			3	328.7	134.5	4.0	57.9	
TOTAL	31,542			5,434			3	14	12			28					
AVG.	1017			175			0	0	0			1	282.6	140.3	3.6	55.3	
RUN YEAR		CHINOOK	CHINOOK						unclipped								
TOTALS TO DATE		ADULT	JACK				SOCKEYE	STEELHEAD	STEELHEAD			LAMPREY					
SPRING		32,036	5,441				3	237	151			28					

TABLE 55

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped					DISCH	SPILL	TURBIDITY				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Jun 1	563			108			3	1	1				4	337.3	136.1	4.0	58.5
Jun 2	539			106			6	1	1				-2	301.3	130.4	4.0	59.1
Jun 3	719			130			15	3	3				5	303.4	132.5	4.0	59.8
Jun 4	682			115			11	1	1				2	308.8	130.1	4.0	60.2
Jun 5	588			100			13	1	1				7	283.9	128.3	4.5	60.3
Jun 6		830		160			22	1	1				6	295.5	129.9	4.5	60.3
Jun 7		681		105			20	0	0				-1	247.8	123.4	4.5	60.4
Jun 8		699		112			65	1	0				3	240.6	123.1	4.5	60.4
Jun 9		946		127			74	1	0				5	242.6	123.5	4.5	60.7
Jun 10		901		149			110	4	3				5	257.9	126.0	4.5	60.8
Jun 11		769		85			154	3	3				0	227.7	120.3	4.5	61.4
Jun 12		858		145			202	1	-1				1	230.5	120.0	5.0	61.7
Jun 13		886		139			252	6	6				3	221.9	118.2	5.0	61.8
Jun 14		1,113		168			433	2	1				8	216.0	117.3	5.0	62.0
Jun 15		1,294		170			623	0	0				9	208.6	117.5	5.0	62.7
Jun 16		1,217		145			657	5	5				21	187.7	65.7	5.0	63.4
Jun 17		1,293		183			1,041	3	4				19	195.6	68.7	5.0	63.9
Jun 18		1,320		229			1,168	5	3				36	185.1	64.6	5.0	64.3
Jun 19		1,222		161			1,177	14	12				26	162.1	56.7	4.5	64.3
Jun 20		1,129		165			1,305	9	7				35	177.3	61.8	4.5	64.3
Jun 21		1,123		194			2,093	12	9				36	200.4	69.8	4.5	64.3
Jun 22		984		195			1,899	12	10				29	191.9	67.0	4.5	64.3
Jun 23		786		157			2,028	24	16				31	153.3	53.8	4.5	64.1
Jun 24		928		172			2,169	24	23				51	176.2	61.4	4.5	63.8
Jun 25		641		186			2,515	22	20				54	169.3	59.2	4.5	63.7
Jun 26		632		144			2,179	24	20				24	176.9	61.7	5.0	63.9
Jun 27		764		191			2,630	21	18				30	170.6	59.3	5.0	64.0
Jun 28		877		155			2,915	31	26				33	179.0	62.5	5.0	64.2
Jun 29		828		181			2,278	61	46				24	160.1	55.7	5.0	64.2
Jun 30		966		182			2,705	54	40				28	152.5	53.2	5.0	64.3

TOTAL	3,091	23,687		4,559			30,762	347	279				532				
AVG.	618	947		152			1,025	12	9				18	218.7	93.2	4.6	62.4

RUN YEAR	CHINOOK	CHINOOK
TOTALS TO DATE	ADULT	JACK
SPRING	35,127	6,000
SUMMER	23,687	4,000
TOTAL	58,814	10,000

SOCKEYE	STEELHEAD	unclipped	STEELHEAD	LAMPREY
30,765	584	430		560

TABLE 56

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped					DISCH	SPILL	TURBIDITY				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Jul 1		1,036		199	0	0	3,291	51	39			31	0	163.9	57.5	5.0	64.7
Jul 2		1,020		229	0	0	2,384	81	64			64	0	134.5	46.7	5.0	65.0
Jul 3		731		174	0	0	1,930	77	64			61	0	136.2	47.8	5.0	65.3
Jul 4		683		137	0	0	1,217	76	66			57	0	124.9	43.7	5.0	65.7
Jul 5		852		248	0	0	1,536	105	85			45	0	136.6	47.4	5.0	66.1
Jul 6		904		188	0	0	1,518	119	89			46	0	131.9	46.6	5.0	66.4
Jul 7		774		250	0	0	1,462	178	132			56	0	135.3	47.0	5.0	66.5
Jul 8		604		179	0	0	1,400	169	130			53	0	140.9	49.0	5.0	66.6
Jul 9		517		146	0	0	998	162	115			59	0	133.4	46.7	6.0	66.7
Jul 10		409		157	0	0	876	177	115			41	0	123.6	43.2	6.0	66.9
Jul 11		506		139	0	0	745	171	115			40	0	140.4	49.1	6.0	67.2
Jul 12		529		150	0	0	697	132	100			45	0	149.6	52.2	6.0	67.5
Jul 13		511		124	0	0	474	191	119			71	0	156.9	54.8	6.0	67.7
Jul 14		522		127	0	0	419	251	177			64	0	126.9	44.3	6.0	68.1
Jul 15		439		127	0	0	333	296	206			90	0	153.2	53.6	6.0	68.3
Jul 16		351		109	0	0	328	221	147			58	0	142.1	49.7	6.0	68.7
Jul 17		444		125	0	0	326	181	133			91	0	130.7	45.7	6.0	68.8
Jul 18		339		100	0	0	243	168	129			76	0	135.2	47.5	6.0	69.0
Jul 19		249		87	0	0	208	158	107			79	0	145.7	51.1	6.0	69.0
Jul 20		226		57	0	0	199	107	77			90	0	148.8	52.2	6.0	69.2
Jul 21		255		66	0	0	203	168	115			79	0	139.2	48.4	6.0	69.7
Jul 22		282		66	0	0	105	144	97			90	0	128.9	44.9	6.0	69.7
Jul 23		367		74	0	0	139	175	124			120	0	142.0	49.9	6.0	69.5
Jul 24		352		120	0	0	87	214	144			136	0	131.9	46.1	6.0	69.7
Jul 25		235		95	0	0	111	167	112			92	0	138.4	48.5	6.0	70.1
Jul 26		253		75	0	0	94	108	81			96	0	153.0	53.5	6.0	70.4
Jul 27		326		45	0	0	62	115	79			127	0	133.5	47.0	6.0	70.3
Jul 28		205		54	1	1	51	106	77			137	0	128.5	45.0	6.0	70.5
Jul 29		208		49	0	0	40	91	63			80	0	134.7	47.1	6.0	70.6
Jul 30		187		62	0	0	49	79	61			154	0	140.9	49.2	6.0	70.4
Jul 31		158		56	0	0	19	82	60			126	1	144.7	50.8	6.0	70.4

TOTAL	14,474	3,814	1	1	21,544	4,520	3,222	2,454	1
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AVG	467	123	0	0	695	146	104	79	138.9	48.6	5.7	68.2
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	LAMPREY	STURGEON
TOTALS TO DATE	35,127	6,000	1	1	52,309	5,104	3,652	3,014	1
SPRING	35,127	6,000	1	1	52,309	5,104	3,652	3,014	1
SUMMER	38,161	7,814							
TOTAL	73,288	13,814							

TABLE 57

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT		CHINOOK JACK		COHO ADULT		COHO JACK		unclipped			DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TURBIDITY DEG F		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM					LAMPREY	STURGEON
Aug 1		181		34	0	0	20	59	47			91		167.5	58.4	6.0	70.5
Aug 2		149		57	0	0	38	107	57			116		153.1	53.4	6.0	70.8
Aug 3		207		45	2	0	18	105	61			70		147.9	51.7	6.0	71.2
Aug 4		133		137	8	0	6	139	89			63		144.0	50.3	6.0	71.9
Aug 5		169		29	2	0	8	123	82			57		139.8	49.0	6.0	72.0
Aug 6			100	76	1	3	7	104	73			90		145.7	50.9	6.0	71.9
Aug 7			96	46	0	0	13	61	38			68		149.6	52.0	6.0	71.8
Aug 8			111	27	0	0	12	61	50			98		148.5	51.9	6.0	71.9
Aug 9			143	38	0	0	1	79	60			94		122.3	42.8	6.0	72.3
Aug 10			82	33	0	0	6	81	49			50		132.4	46.0	6.0	72.3
Aug 11			154	28	0	0	6	152	108			52		117.3	40.8	6.0	72.1
Aug 12			134	32	0	0	4	160	97			48		114.5	40.0	6.0	72.0
Aug 13			117	22	0	0	3	72	48			39		129.7	45.6	6.0	72.0
Aug 14			205	26	0	0	1	63	37			37		146.7	51.3	6.0	71.9
Aug 15			176	31	1	0	0	69	45			44		120.0	42.0	6.0	71.8
Aug 16			229	54	1	0	5	103	66			47		114.8	39.9	6.0	71.9
Aug 17			220	46	0	0	8	109	68			22		115.2	40.3	6.0	71.7
Aug 18			186	53	1	1	4	92	53			24		106.2	37.0	6.0	71.7
Aug 19			276	51	0	0	3	106	66			24		105.9	37.1	6.0	71.7
Aug 20			241	52	0	0	2	121	63			10		123.7	43.1	6.0	71.7
Aug 21			339	50	1	1	5	118	62			28		136.8	47.5	6.0	71.7
Aug 22			281	57	5	0	2	106	49			15		139.5	49.0	6.0	71.6
Aug 23			427	57	4	4	1	90	50			31		135.8	47.4	6.0	71.6
Aug 24			645	78	8	4	0	122	61			28		111.0	38.8	6.0	71.6
Aug 25			1,204	152	14	7	0	229	125			24		98.7	34.5	6.0	71.5
Aug 26			1,118	130	20	9	1	315	190			17		106.0	36.7	6.0	71.5
Aug 27			846	161	37	20	2	228	111			9		108.2	37.7	6.0	71.8
Aug 28			581	132	14	1	4	136	71			12		120.0	41.9	6.0	71.9
Aug 29			1,233	250	40	14	1	164	103			5		126.8	44.3	6.0	71.7
Aug 30			1,910	327	110	20	7	323	160			37		117.5	40.8	6.0	71.6
Aug 31			1,269	234	67	23	12	287	117			26		117.9	41.2	6.0	71.7
TOTAL		839	12,323	2,545	336	107	200	4,084	2,356			1,376					
AVG.		168	474	82	11	3	6	132	76			44		127.8	44.6	6.0	71.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	35,127	6,000
SUMMER	39,000	8,116
FALL	12,323	2,243
TOTAL	86,450	16,359

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
337	108	52,509	9,188	6,008

LAMPREY	STURGEON
4,390	1

TABLE 58

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped					CHUM	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK				KCFS	KCFS	SECCHI	DEG F
Sep 1			1,785	269	137	39	4	517	231	1		13		98.2	1.1	6.0	71.7
Sep 2			2,207	263	74	29	0	447	218	0		24		90.7	1.0	6.0	71.8
Sep 3			1,520	219	68	23	0	227	113	0		18		105.7	1.0	6.0	71.9
Sep 4			1,273	295	26	12	0	169	69	0		21		98.2	1.0	6.0	71.9
Sep 5			952	269	36	15	0	133	71	0		21		92.0	0.8	6.0	72.1
Sep 6			699	230	9	8	1	119	50	0		10		89.3	1.0	6.0	72.2
Sep 7			982	203	25	9	0	145	51	0		4		87.6	1.0	6.0	72.3
Sep 8			2,605	606	96	34	1	358	122	0		16		72.8	1.1	6.0	71.9
Sep 9			1,633	377	99	25	0	427	174	0		26		68.8	1.0	6.0	71.9
Sep 10			1,616	435	120	44	0	518	207	0		7		80.9	1.0	6.0	71.8
Sep 11			1,973	515	92	18	0	520	211	0		10		82.8	1.0	6.0	71.6
Sep 12			1,845	478	62	47	1	376	160	0		0		105.0	1.0	6.0	71.5
Sep 13			2,963	565	126	33	1	562	279	0		4		79.9	1.0	6.0	71.3
Sep 14			4,897	709	184	51	2	668	282	0		-1		76.5	1.0	6.0	71.0
Sep 15			6,861	940	317	70	0	829	364	0		1		71.7	1.2	6.0	70.7
Sep 16			6,557	922	459	86	1	1,031	429	0		5		76.4	0.9	6.0	70.5
Sep 17			7,681	1,098	682	141	0	1,253	537	0		2		95.6	0.8	6.0	70.2
Sep 18			5,452	768	544	59	0	1,152	511	0		5		87.9	0.9	6.0	70.1
Sep 19			3,293	773	412	84	0	806	343	0		1		81.1	0.9	6.0	69.7
Sep 20			7,280	1,051	1,170	220	1	2,701	1,257	0		2		72.6	0.9	6.0	69.3
Sep 21			5,513	951	1,832	265	2	2,264	931	0		0		72.6	0.9	6.0	69.0
Sep 22			5,324	726	1,724	278	1	1,740	706	0		5		82.5	0.9	6.0	68.8
Sep 23			3,942	752	1,670	261	1	1,410	505	0		-3		69.4	0.9	6.0	68.5
Sep 24			2,847	425	878	124	1	850	348	0		5		66.7	0.9	6.0	68.3
Sep 25			4,299	323	1,105	94	0	1,019	447	0		5		79.8	0.9	6.0	68.0
Sep 26			3,499	621	1,395	174	-1	1,059	413	0		1		66.2	0.9	6.0	67.7
Sep 27			2,323	305	1,503	184	1	1,139	452	0		4		72.5	0.9	6.0	67.2
Sep 28			3,150	657	745	111	0	850	307	0		-4		82.7	0.9	6.0	66.7
Sep 29			2,833	510	891	68	0	1,060	450	0		-1		71.1	0.9	6.0	66.2
Sep 30			1,953	417	730	93	0	722	304	0		-2		88.9	0.9	6.0	65.8
TOTAL			99,757	16,672	17,211	2,699	17	25,071	10,542	1		199					

AVG.	3,325	556	574	90	1	836	351		7	82.2	0.9	6.0	70.1
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RUN YEAR	CHINOOK	CHINOOK	COHO	COHO	unclipped			LAMPREY	STURGEON
	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD		
TOTALS TO DATE									
SPRING	35,127	6,000	17,548	2,807	52,526	34,259	16,550	1	4,589
SUMMER	39,000	8,116							
FALL	112,080	18,915							
TOTAL	186,207	33,031							

TABLE 59

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped						DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Oct 1			1,617	317	387	65		619	269	0		0		88.1	0.9	6.0	65.5
Oct 2			2,503	387	507	68		953	386	0		-1		91.4	0.9	6.0	65.2
Oct 3			3,595	567	556	86		983	431	0		1		93.9	1.0	6.0	64.8
Oct 4			1,239	271	646	82		963	402	0		-1		78.0	0.9	6.0	64.2
Oct 5			888	242	582	80		700	306	0		0		76.7	0.8	6.0	63.6
Oct 6			936	215	521	28		623	290	0		-2		73.5	0.8	6.0	63.4
Oct 7			1,314	173	521	39		645	271	1		-2		73.1	0.8	6.0	63.0
Oct 8			1,214	306	530	54		780	348	0		3		73.3	0.8	6.0	62.4
Oct 9			880	286	559	68		652	279	1		-1		94.0	0.8	6.0	61.8
Oct 10			783	162	663	52		688	302	0		1		99.5	0.6	6.0	61.3
Oct 11			1,230	234	805	88		856	421	0		-1		94.4	0.8	6.0	60.9
Oct 12			1,293	245	481	37		614	282	0		0		75.3	0.8	6.0	60.5
Oct 13			819	218	316	28		444	192	0		0		80.1	0.8	6.0	60.3
Oct 14			670	265	300	69		541	238	0		0		79.8	0.8	6.0	60.0
Oct 15			404	116	260	20		430	152	0		1		89.5	0.8	6.0	59.7
Oct 16			356	99	229	27		455	212	0		0		97.4	0.8	6.0	59.3
Oct 17			651	119	197	17		493	224	0		0		79.0	0.8	6.0	58.9
Oct 18			560	181	198	24		529	245	0		0		83.7	0.8	6.0	58.4
Oct 19			380	114	378	17		450	214	0		0		72.1	0.8	6.0	58.1
Oct 20			432	97	979	78		590	298	0		0		90.2	0.8	6.0	57.7
Oct 21			589	115	1,031	104		805	465	0		-1		82.1	0.8	6.0	57.5
Oct 22			410	86	765	139		950	618	0		0		65.3	0.8	6.0	57.4
Oct 23			289	62	315	70		611	397	0		1		85.0	1.2	6.0	57.3
Oct 24			272	55	190	38		317	185	0		0		80.4	1.6	6.0	57.3
Oct 25			337	72	143	34		291	165	0		0		67.9	0.8	6.0	57.2
Oct 26			337	70	103	17		199	109	0		-1		71.1	0.8	6.0	56.8
Oct 27			340	52	44	10		140	65	0		0		79.3	0.8	6.0	56.5
Oct 28			380	37	30	5		106	41	0		0		96.4	0.8	6.0	56.1
Oct 29			284	51	21	6		100	36	1		0		103.2	0.8	6.0	55.4
Oct 30			197	27	22	1		89	31	0		0		100.2	0.7	6.0	54.8
Oct 31			258	34	20	6		79	22	0		0		88.4	0.7	6.0	54.4
TOTAL			25,457	5,275	12,299	1,457		16,695	7,896	3		-3					

AVG.	821	170	397	47		539	255	0		0			83.9	0.9	6.0	59.7
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RUN YEAR	CHINOOK		COHO		unclipped			LAMPREY STURGEON				
	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	LAMPREY	STURGEON		
TOTALS TO DATE												
SPRING	35,127	6,000			29,847	4,264	52,526	50,954	24,446	4	4,586	1
SUMMER	39,000	8,116										
FALL	137,537	24,190										
TOTAL	211,664	38,306										

Note: Visual counts ended October 31.

TABLE 60

DISCHARGE AND WATER QUALITY DATA

JOHN DAY PROJECT 2019

NOVEMBER					DECEMBER				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY		DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F				SECCHI	DEG F
Nov 1	88.0	0.7	6.0	54.1	Dec 1	128.2	0.0	6.0	47.9
Nov 2	103.2	0.7	6.0	53.8	Dec 2	128.1	0.0	6.0	47.4
Nov 3	87.0	0.7	6.0	53.5	Dec 3	126.0	0.0	6.0	46.9
Nov 4	107.4	0.7	6.0	53.5	Dec 4	133.8	0.0	6.0	46.4
Nov 5	123.8	0.7	6.0	53.1	Dec 5	134.7	0.0	6.0	45.9
Nov 6	133.3	1.3	6.0	52.7	Dec 6	133.1	0.0	6.0	45.3
Nov 7	122.2	0.7	6.0	52.2	Dec 7	122.3	0.0	6.0	45.0
Nov 8	120.7	0.7	6.0	51.7	Dec 8	113.5	0.0	6.0	44.9
Nov 9	126.6	0.6	6.0	51.5	Dec 9	121.3	0.0	6.0	44.7
Nov 10	125.4	0.7	6.0	51.3	Dec 10	125.4	0.0	6.0	44.6
Nov 11	127.2	0.7	6.0	51.1	Dec 11	118.0	0.0	6.0	44.4
Nov 12	119.1	0.7	6.0	50.8	Dec 12	111.8	0.0	6.0	44.1
Nov 13	116.3	0.7	6.0	50.3	Dec 13	110.0	0.0	6.0	43.9
Nov 14	124.1	0.7	6.0	50.0	Dec 14	111.5	0.0	6.0	43.8
Nov 15	116.1	0.7	6.0	49.9	Dec 15	112.2	0.0	6.0	43.9
Nov 16	120.4	0.7	6.0	49.9	Dec 16	117.1	0.0	6.0	44.0
Nov 17	111.8	0.5	6.0	50.1	Dec 17	122.4	0.0	6.0	43.9
Nov 18	117.6	0.7	6.0	50.3	Dec 18	126.2	0.0	6.0	43.8
Nov 19	116.7	4.9	6.0	50.5	Dec 19	126.0	0.0	6.0	43.6
Nov 20	124.8	9.7	6.0	50.5	Dec 20	104.2	0.0	6.0	43.5
Nov 21	120.2	0.7	6.0	50.5	Dec 21	91.3	0.0	6.0	43.5
Nov 22	120.4	0.5	6.0	50.3	Dec 22	92.3	0.0	6.0	43.7
Nov 23	117.6	0.7	6.0	50.2	Dec 23	108.4	0.0	6.0	43.7
Nov 24	123.7	0.7	6.0	50.2	Dec 24	108.1	0.0	6.0	43.7
Nov 25	118.3	0.7	6.0	50.1	Dec 25	105.8	0.0	6.0	43.6
Nov 26	125.6	0.7	6.0	49.9	Dec 26	115.5	0.0	6.0	43.4
Nov 27	124.7	0.7	6.0	49.7	Dec 27	123.4	0.0	6.0	43.2
Nov 28	116.5	0.7	6.0	49.2	Dec 28	116.0	0.0	6.0	43.1
Nov 29	130.0	0.7	6.0	48.9	Dec 29	108.0	0.0	6.0	42.9
Nov 30	128.3	0.0	6.0	48.4	Dec 30	110.9	0.0	6.0	42.9
					Dec 31	99.9	0.0	6.0	42.9
AVG.	118.6	1.1	6.0	50.9	AVG.	116.3	0.0	6.0	44.3

TABLE 61

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - NIGHT FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	LAMPREY
Jun 1											
Jun 2											
Jun 3											
Jun 4											
Jun 5											
Jun 6											
Jun 7											
Jun 8											
Jun 9											
Jun 10											
Jun 11											
Jun 12											
Jun 13											
Jun 14											
Jun 15		51		2			53	0	0		35
Jun 16		31		1			116	1	0		27
Jun 17		55		7			140	0	0		78
Jun 18		53		2			138	0	0		95
Jun 19		30		1			120	2	2		77
Jun 20		27		2			143	0	0		89
Jun 21		24		5			235	0	0		102
Jun 22		46		0			203	0	0		76
Jun 23		10		0			218	0	0		98
Jun 24		27		3			182	0	0		69
Jun 25		19		0			195	0	0		70
Jun 26		19		0			240	0	0		76
Jun 27		30		2			327	2	2		60
Jun 28		20		0			213	0	0		107
Jun 29		14		0			130	2	2		102
Jun 30		23		3			240	0	0		55
TOTAL		479		28			2,893	7	6		1,216
AVG.		30		2			181	0	0		76

Note: Night counts are video counts from 2000-0400 PST.

TABLE 62

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT -NIGHT FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					
Jul 1		35		1			258	0	0		57
Jul 2		14		2			207	3	1		136
Jul 3		15		1			142	1	1		146
Jul 4		21		1			159	1	1		118
Jul 5		9		0			187	3	3		136
Jul 6		18		1			185	1	1		120
Jul 7		11		0			167	2	2		154
Jul 8		5		0			117	2	1		131
Jul 9		6		0			129	0	0		113
Jul 10		6		0			136	5	2		137
Jul 11		8		0			64	1	1		120
Jul 12		3		0			69	0	0		106
Jul 13		0		0			79	2	2		154
Jul 14		6		0			58	2	0		129
Jul 15		2		0			72	9	5		144
Jul 16		10		0			71	2	0		153
Jul 17		11		0			69	7	5		126
Jul 18		5		0			126	5	4		135
Jul 19		4		0			45	3	1		95
Jul 20		6		0			54	2	1		187
Jul 21		7		0			32	3	2		114
Jul 22		5		0			45	2	1		105
Jul 23		2		0			20	3	3		99
Jul 24		1		0			14	0	0		49
Jul 25		0		0			6	1	0		87
Jul 26		4		0			15	7	2		126
Jul 27		3		0			22	6	3		96
Jul 28		4		0			13	5	5		114
Jul 29		6		0			15	3	3		74
Jul 30		1		0			9	1	1		98
Jul 31		3		0			5	1	1		90
TOTAL		231		6			2,590	83	52		3,649

AVG

7

0

84

3

2

118

Note: Night counts are video counts from 2000-0400 PST. Night counts from 23-25 July are single ladder counts (South).

TABLE 63

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - NIGHT FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					
Aug 1		3		0	0	0	10	1	0		88
Aug 2		3		0	0	0	3	2	2		69
Aug 3		6		1	0	0	12	5	5		77
Aug 4		6		0	0	0	0	13	6		123
Aug 5		4		0	0	0	0	0	0		105
Aug 6			2	0	0	0	6	5	4		76
Aug 7			4	0	0	0	7	1	1		47
Aug 8			11	2	0	0	1	3	1		99
Aug 9			7	0	0	0	0	2	2		47
Aug 10			6	0	1	0	7	4	3		56
Aug 11			5	0	2	1	3	5	3		48
Aug 12			1	0	0	0	2	5	3		61
Aug 13			6	0	0	0	0	0	0		46
Aug 14			2	0	0	0	1	0	0		60
Aug 15			8	3	0	0	1	6	2		39
Aug 16			12	0	0	0	1	3	0		67
Aug 17			13	1	0	0	0	3	3		23
Aug 18			6	2	1	0	0	5	4		20
Aug 19			5	0	-1	0	0	3	1		55
Aug 20			3	0	0	0	1	3	2		46
Aug 21			2	0	0	0	0	3	2		19
Aug 22			8	0	0	0	3	9	0		47
Aug 23			7	0	1	0	3	4	4		65
Aug 24			16	3	0	0	0	9	3		37
Aug 25			10	3	1	0	0	27	9		33
Aug 26			3	1	0	0	0	12	6		34
Aug 27			18	4	3	0	1	9	4		44
Aug 28			17	3	0	0	0	4	3		37
Aug 29			10	1	0	0	2	9	3		28
Aug 30			15	1	0	0	4	19	6		49
Aug 31			21	6	0	0	0	41	13		49
TOTAL		22	218	31	8	1	68	215	95		1,694
AVG.		4	8	1	0	0	2	7	3		55

Note: Night counts are video counts from 2000-0400 PST. Night counts from 21 Aug are single ladder counts (South).

TABLE 64

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - NIGHT FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped		LAMPREY	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD		PINK
Sep 1			19	2	3	2	0	43	12		39
Sep 2			5	0	0	0	0	8	3		25
Sep 3			5	2	8	0	0	34	8		27
Sep 4			3	4	0	0	1	14	4		42
Sep 5			3	0	3	0	0	7	3		54
Sep 6			20	5	7	1	0	11	3		32
Sep 7			38	0	9	1	1	28	13		46
Sep 8			34	0	37	0	0	35	10		18
Sep 9			31	4	25	3	0	66	34		16
Sep 10			38	7	12	3	2	110	29		16
Sep 11			19	4	7	0	0	48	17		1
Sep 12			40	15	8	3	3	96	41		17
Sep 13			170	37	31	7	0	118	34		0
Sep 14			150	13	120	3	0	173	63		11
Sep 15			210	15	69	6	2	222	61		5
Sep 16			143	33	74	3	0	224	81		9
Sep 17			242	18	82	1	0	415	170		7
Sep 18			50	20	60	-1	0	86	32		5
Sep 19			103	36	64	0	0	224	108		20
Sep 20			78	1	297	3	1	422	115		3
Sep 21			74	8	219	7	0	352	114		6
Sep 22			27	0	140	2	0	148	54		9
Sep 23			35	0	127	1	0	124	47		10
Sep 24			46	3	136	14	0	118	32		3
Sep 25			84	12	45	0	0	122	46		13
Sep 26			66	23	88	0	0	143	69		12
Sep 27			54	4	37	0	0	121	46		4
Sep 28			60	13	65	0	0	87	22		5
Sep 29			9	2	112	5	0	130	52		5
Sep 30			13	3	58	2	0	89	42		5
TOTAL			1,869	284	1,943	66	10	3,818	1,365		465
AVG.			62	9	65	2	0	127	46		16

Note: Night counts are video counts from 2000-0400 PST. Night counts on 11 Sept are single ladder counts (North).

TABLE 65

YEARLY TOTALS OF SALMONIDS COUNTED OVER
JOHN DAY DAM
1968 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	PINK	TOTAL
1968	233,654	121,256	87,847	38,233	1	480,991
1969	276,051	86,348	39,847	13,589	1	415,836
1970	222,506	82,440	78,133	19,543	0	402,622
1971	193,881	115,977	72,232	40,830	0	422,920
1972	225,631	141,628	51,793	17,533	0	436,585
1973	249,492	101,440	64,744	13,359	8	429,043
1974	167,888	43,756	33,121	14,651	1	259,417
1975	159,079	32,651	50,774	6,305	45	248,854
1976	175,911	59,808	30,446	5,806	6	271,977
1977	194,931	102,558	85,701	1,123	3	384,316
1978	174,852	44,188	13,778	8,355	0	241,173
1979	118,154	55,877	43,630	5,061	6	222,728
1980	100,664	78,199	50,675	1,924	0	231,462
1981	114,359	95,172	46,146	2,562	0	258,239
1982	144,082	108,603	37,970	4,063	0	294,718
1983	139,866	154,425	91,917	1,640	0	387,848
1984	188,373	201,154	107,951	2,080	0	499,558
1985	337,624	247,093	124,941	1,652	0	711,310
1986	346,700	238,010	46,327	1,933	0	632,970
1987	327,752	170,654	75,529	3,355	0	577,290
1988	277,251	164,650	48,095	6,813	0	496,809
1989	208,254	193,460	39,374	9,663	0	450,751
1990	156,313	107,849	42,077	3,023	0	309,262
1991	118,921	160,257	63,760	8,021	1	350,960
1992	132,025	195,194	69,731	2,633	0	399,583
1993	141,705	95,642	61,218	2,995	0	301,560
1994	126,645	93,075	11,170	2,842	0	233,732
1995	107,277	123,246	8,667	2,117	0	241,307
1996	130,602	156,002	25,698	4,279	0	316,581
1997	185,240	157,038	35,830	4,229	0	382,337
1998	130,028	158,547	9,837	8,497	0	306,909
1999	163,282	165,314	14,809	13,232	1	356,638
2000	269,371	220,328	88,372	23,969	0	602,040
2001	510,987	483,409	107,869	51,181	0	1,153,446
2002	447,729	390,300	41,915	9,272	0	889,216
2003	472,340	305,042	35,417	38,765	18	851,582
2004	447,891	233,431	113,497	35,522	0	830,341
2005	322,991	232,103	69,770	36,205	12	661,081
2006	290,161	231,355	35,387	38,374	3	595,281
2007	215,876	237,517	24,277	39,421	0	517,091
2008	342,952	277,162	193,409	44,898	0	858,421
2009	451,974	581,645	157,402	71,739	-1	1,262,759
2010	534,247	283,812	324,128	23,272	0	1,165,459
2011	497,771	257,345	143,605	65,668	698	965,087
2012	444,136	162,083	394,166	33,859	15	1,034,259
2013	710,149	155,742	155,498	18,139	64	1,039,604
2014	766,218	203,232	557,531	115,841	0	1,642,822
2015	891,578	179,506	366,364	21,828	10	1,459,286
2016	507,088	130,626	289,976	19,635	2	947,327
2017	313,886	83,253	66,041	34,246	1	497,427
2018	229,860	73,352	168,469	19,802	0	491,483
2019	249,977	51,086	52,526	34,117	4	387,710
TOTALS	14,886,175	8,823,840	5,049,387	1,047,694	899	29,808,008
10-Year Average	514,491	158,004	251,830	38,641	79	963,046

*Jacks included

2006 - Total includes 1 chum

2013 - Total includes 12 chum

TABLE 66

MONTHLY COUNT OF CHINOOK SALMON
JOHN DAY DAM 1968 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	SPRING	SUMMER	FALL	JACKS
														Apr 1- Jun 5	Jun 6- Aug 5	Aug 6- Oct 31	
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	7,064	8,195	66,078	18,025			139,866	33,480	14,834	91,552	43,440
1984				4,329	26,561	9,706	12,892	15,422	96,399	22,255	809		188,373	32,035	22,795	133,543	69,874
1985				27,539	42,487	15,585	9,663	27,387	178,322	34,192	2,449		337,624	72,389	23,489	241,746	149,281
1986			21	38,075	37,959	13,227	9,703	10,797	194,928	41,990			346,700	77,884	22,051	246,765	133,827
1987				33,985	26,852	13,641	8,948	24,363	196,596	23,367			327,752	62,313	22,244	243,195	53,794
1988				33,323	20,170	14,731	9,648	37,002	147,553	14,824			277,251	55,195	23,569	198,487	51,330
1989				12,510	23,983	12,793	10,124	35,985	101,794	11,065			208,254	37,773	23,868	146,613	25,092
1990				23,689	18,854	11,209	9,199	13,542	71,508	8,312			156,313	43,127	20,532	92,654	22,195
1991				7,419	13,668	8,868	8,390	4,879	64,950	10,747			118,921	21,847	16,872	80,202	28,646
1992				27,538	16,623	9,452	5,263	7,677	58,140	7,332			132,025	45,457	13,910	72,658	22,084
1993				26,309	28,204	13,295	6,311	10,703	51,667	5,216			141,705	56,144	18,364	67,197	9,621
1994				4,436	4,937	6,305	6,397	13,345	79,538	11,687			126,645	9,745	12,935	103,965	18,867
1995				2,034	3,378	4,977	6,273	14,694	61,273	14,648			107,277	5,776	11,476	90,025	24,192
1996				1,860	18,616	7,419	6,356	18,550	68,198	9,603			130,602	21,599	13,148	95,855	12,071
1997				13,579	45,408	16,551	8,328	10,355	81,039	9,980			185,240	62,580	21,769	100,891	1,588
1998				9,279	12,439	10,076	7,535	11,073	62,107	17,519			130,028	22,177	17,780	90,071	13,745
1999				3,008	16,517	10,206	14,226	20,201	86,380	12,744			163,282	20,498	24,714	118,070	19,611
2000				48,176	47,705	19,201	13,579	44,377	86,737	9,596			269,371	98,710	31,056	139,605	56,892
2001				187,104	74,233	46,449	33,904	20,506	128,230	20,561			510,987	270,385	74,235	166,367	57,877
2002				36,677	99,270	69,941	44,890	37,086	143,126	16,739			447,729	142,290	110,969	194,470	37,568
2003			3,951	61,184	45,880	62,159	45,782	22,222	201,192	28,666	1,238	66	472,340	111,642	105,615	249,828	54,680
2004			127	62,999	50,288	55,728	30,998	24,383	192,606	29,301	1,410	51	447,891	118,520	83,060	244,723	47,708
2005			15	13,680	39,563	45,107	28,340	15,637	158,917	21,319	411	2	322,991	58,742	69,439	194,382	37,622
2006				420	49,051	50,206	28,688	14,821	118,233	27,015	1,710	17	290,161	52,406	77,964	158,064	28,507
2007			3	13,080	40,896	30,282	19,378	12,140	81,091	17,462	1,256	288	215,876	57,042	47,908	109,379	61,316
2008				14,050	77,177	58,652	22,929	29,293	126,961	13,890			342,952	96,697	77,329	168,926	60,788
2009				5,282	112,503	75,623	31,549	51,444	155,522	20,051			451,974	126,539	99,136	226,299	164,110
2010				69,747	108,746	64,519	30,528	29,389	197,139	34,179			534,247	191,240	83,430	259,577	69,502
2011				2,856	131,343	70,070	46,154	26,983	182,441	37,924			497,771	143,224	110,919	243,628	138,591
2012				5,071	100,761	47,139	30,572	27,013	205,132	28,448			444,136	114,410	71,229	258,497	108,693
2013				12,822	68,212	62,206	35,505	48,428	411,708	68,664	2,559	45	710,149	85,948	94,962	526,635	137,790
2014			6	23,812	110,984	66,933	41,310	26,053	429,579	67,520			766,218	142,300	103,688	520,203	116,443
2015			21	73,181	94,629	77,299	46,700	53,294	429,186	117,289			891,578	177,529	119,756	594,293	82,816
2016				7,999	87,686	63,313	39,073	35,950	247,376	25,691			507,088	101,921	97,974	307,193	55,724
2017				413	52,174	47,364	25,966	11,340	138,707	37,922			313,886	59,150	67,779	186,957	41,269
2018				612	49,475	37,030	15,054	15,982	87,782	21,648	2,190	77	229,860	55,615	47,128	124,840	28,248
2019		5	2	501	36,976	31,337	18,288	15,707	116,429	30,732			249,977	41,127	47,116	161,727	38,306
TOTAL				4,154	1,246,605	2,356,986	1,515,570	1,070,406	1,042,931	6,544,575	1,089,574	14,815	14,886,175	3,783,342	2,486,194	8,601,179	3,019,017
Average				19,701	84,099	56,721	32,915	29,014	244,548	47,002			514,491	111,246	84,398	318,355	81,738

*Jacks included

TABLE 67

**MONTHLY COUNT OF SOCKEYE SALMON
JOHN DAY DAM
1968 - 2019**

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	63,995	506	37	7			91,917
1984						54,975	51,728	1,230	16	2			107,951
1985						78,326	46,184	421	10				124,941
1986						13,472	32,116	738	0	1			46,327
1987						35,022	39,983	513	11				75,529
1988						25,001	22,855	225	12	2			48,095
1989						18,883	20,330	148	12	1			39,374
1990					1	15,247	26,580	245	4				42,077
1991					0	10,917	52,130	699	9	5			63,760
1992					1	38,618	30,788	303	20	1			69,731
1993					1	30,668	30,348	198	2	1			61,218
1994					0	7,004	4,141	22	2	1			11,170
1995					1	4,242	4,352	71	1				8,667
1996					0	15,316	10,323	59	0				25,698
1997					10	11,605	23,604	603	4	4			35,830
1998					0	4,371	5,314	131	19	2			9,837
1999					1	4,803	9,910	88	2	5			14,809
2000					15	73,119	15,122	108	7	1			88,372
2001					7	86,624	21,062	100	75	1			107,869
2002					1	20,044	21,772	96	1	1			41,915
2003					0	19,260	16,004	151	2				35,417
2004					34	84,659	28,663	133	5	3			113,497
2005					-3	35,616	33,988	162	6	1			69,770
2006					0	20,279	14,949	154	5				35,387
2007					6	16,083	7,994	141	53				24,277
2008					1	150,928	42,325	153	2				193,409
2009					3	100,136	57,110	142	8	3			157,402
2010					14	226,244	97,705	153	8	4			324,128
2011					0	41,854	101,278	471	2	0			143,605
2012					2	241,353	152,501	285	22	3			394,166
2013					23	80,403	74,530	516	24	2			155,498
2014					6	230,010	325,778	1,712	25	0			557,531
2015					60	252,165	109,674	3,917	510	38			366,364
2016					65	226,742	62,085	988	96	0			289,976
2017					21	39,962	25,744	186	109	19			66,041
2018					5	110,952	57,120	369	23	0	0		168,469
2019					3	30,762	21,544	200	17	0			52,526
TOTAL					286	2,714,292	2,308,178	25,039	1,453	138	1		5,049,387
10-Year Average					20	148,045	102,796	880	84				251,830

TABLE 68
MONTHLY COUNT OF COHO SALMON
JOHN DAY DAM 1968 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
1968							4	1,311	32,882	3,848	188		38,233
1969							25	308	9,879	3,377			13,589
1970							14	1,026	17,272	1,231			19,543
1971								944	36,401	3,485			40,830
1972								1,253	14,965	1,315			17,533
1973								788	11,350	1,221			13,359
1974								730	11,253	2,668			14,651
1975								85	4,266	1,954			6,305
1976								57	3,739	2,010			5,806
1977								8	534	581			1,123
1978								6	2,676	5,673			8,355
1979							1	132	2,853	1,753	322		5,061
1980								27	1,431	466			1,924
1981								90	2,030	442			2,562
1982								145	3,032	886			4,063
1983								99	1,353	188			1,640
1984								4	1,736	331	9		2,080
1985								95	1,140	395	22		1,652
1986									1,527	406			1,933
1987							1	16	3,205	133			3,355
1988							3	241	5,170	1,399			6,813
1989								264	6,832	2,567			9,663
1990								1	1,890	1,132			3,023
1991								5	6,140	1,876			8,021
1992									2,153	480			2,633
1993								11	2,233	751			2,995
1994								164	1,892	786			2,842
1995								63	1,199	855			2,117
1996								11	3,432	836			4,279
1997								1	2,860	1,368			4,229
1998								18	2,806	5,673			8,497
1999								8	9,471	3,753			13,232
2000					2			921	15,355	7,691			23,969
2001							49	480	23,204	27,448			51,181
2002								66	5,101	4,105			9,272
2003								282	24,786	13,509	183	5	38,765
2004								161	24,884	9,710	766	1	35,522
2005								334	20,981	12,882	2,005	3	36,205
2006								613	20,825	12,340	4,543	53	38,374
2007						1	1	248	21,179	17,799	193		39,421
2008								810	29,451	14,637			44,898
2009							1	4,826	29,003	37,909			71,739
2010							10	375	14,126	8,761			23,272
2011								2,234	37,683	25,751			65,668
2012							9	1,393	28,826	3,631			33,859
2013							1	309	8,939	8,279	554	57	18,139
2014	1						0	151	95,529	20,160			115,841
2015							0	287	17,531	4,010			21,828
2016								103	14,537	4,995			19,635
2017								90	25,508	8,648			34,246
2018								630	15,055	3,686	299	132	19,802
2019	8	-2					2	443	19,910	13,756			34,117
TOTAL	9	-2	0	0	2	1	121	22,667	702,015	313,546	9,084	251	1,047,694
10-Year Average								602	27,764	10,168			38,641

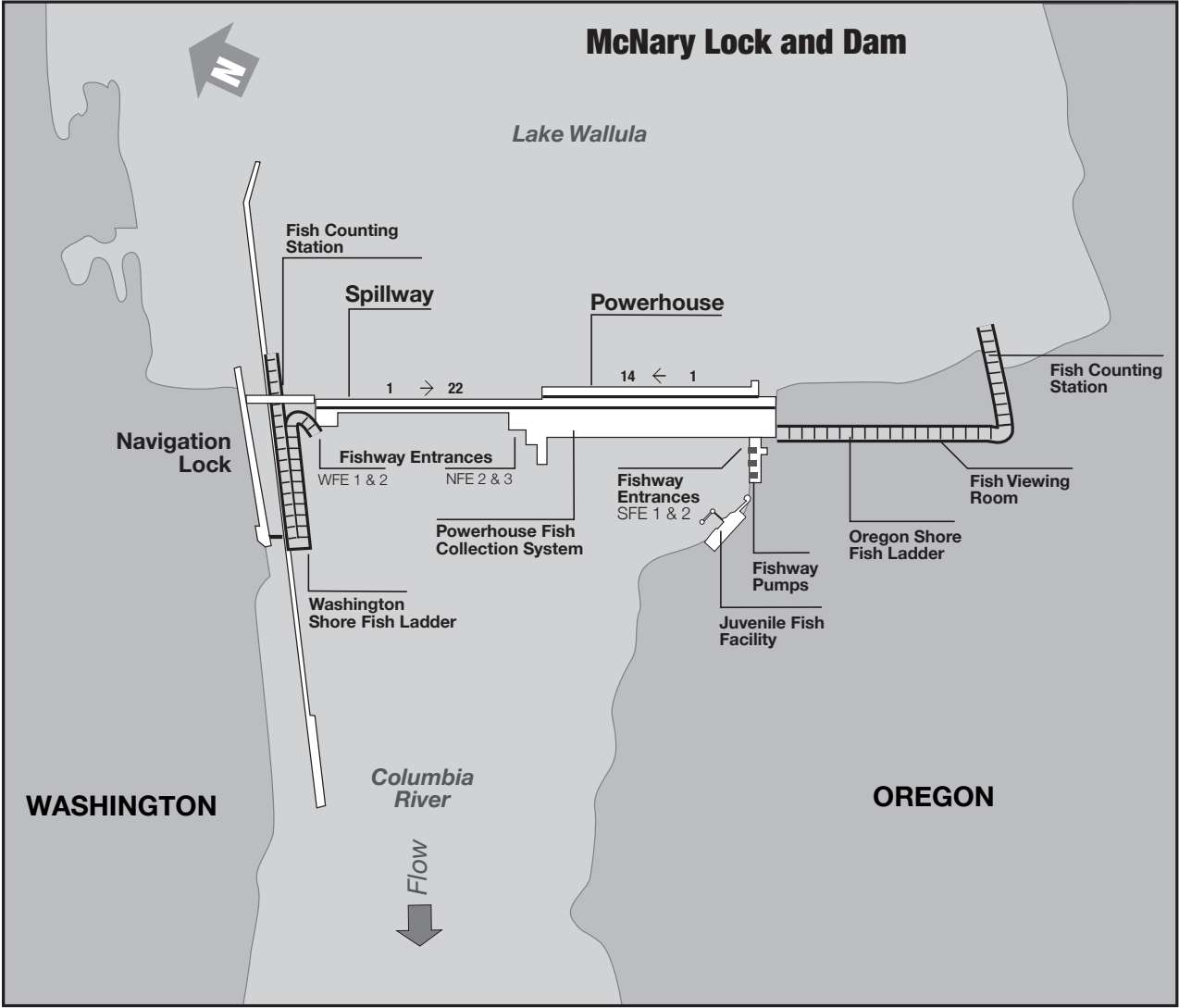
*Jacks included

TABLE 69
MONTHLY COUNT OF STEELHEAD
JOHN DAY DAM 1968 - 2019

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	1,698	1,167	10,168	19,693	50,725	21,759			108,603
1983				1,492	434	560	15,088	31,453	83,215	22,183			154,425
1984				3,316	1,787	2,101	21,442	19,743	100,437	46,506	5,822		201,154
1985				6,821	1,723	3,583	19,631	64,456	109,488	37,227	4,164		247,093
1986			3,611	2,040	887	2,362	37,732	31,576	107,002	52,800			238,010
1987				3,926	-747	942	23,614	34,203	69,585	39,131			170,654
1988				4,290	525	2,188	17,649	25,741	81,859	32,398			164,650
1989				2,940	508	2,445	18,254	22,548	104,521	42,244			193,460
1990				3,339	600	1,902	10,544	9,445	42,888	39,131			107,849
1991				2,547	660	1,256	12,827	18,310	87,277	37,380			160,257
1992				1,334	406	2,337	10,732	17,326	143,823	19,236			195,194
1993				3,453	808	2,845	9,434	11,018	46,447	21,637			95,642
1994				2,286	413	1,647	6,961	7,140	44,175	30,453			93,075
1995				1,498	488	1,757	7,755	26,450	45,087	40,211			123,246
1996				1,597	462	1,576	11,885	42,853	67,171	30,458			156,002
1997				2,171	810	2,021	12,847	22,179	75,119	41,891			157,038
1998				4,367	1,018	2,460	9,827	9,053	67,322	64,500			158,547
1999				2,702	764	1,975	17,083	42,160	72,719	27,911			165,314
2000				2,607	784	4,500	23,496	37,827	113,619	37,495			220,328
2001				1,946	550	11,031	52,946	50,723	230,803	135,410			483,409
2002				7,330	972	5,875	42,167	59,430	170,893	103,633			390,300
2003			9,792	1,327	222	4,888	28,019	23,687	177,058	50,975	7,666	1,408	305,042
2004		186	2,591	1,437	537	6,840	20,250	24,594	145,241	28,300	3,401	54	233,431
2005		106	2,571	843	456	3,424	24,705	27,445	116,336	49,965	6,158	94	232,103
2006		32	1,252	2,104	343	2,575	15,719	25,008	125,323	46,050	12,909	40	231,355
2007		400	3,584	1,592	641	2,450	16,497	43,710	119,499	42,809	5,509	826	237,517
2008				2,363	1,004	5,973	45,572	41,931	144,781	35,538			277,162
2009				2,502	674	5,136	43,692	167,086	262,375	100,180			581,645
2010				2,156	442	7,589	73,271	36,206	123,408	40,740			283,812
2011				2,396	408	1,090	32,498	101,526	83,950	35,477			257,345
2012				1,657	277	1,995	27,799	34,466	67,996	27,893			162,083
2013				754	197	1,837	18,416	22,217	78,355	29,179	3,133	1,654	155,742
2014	181	696	1,517	363	422	2,906	27,211	18,916	116,932	34,088			203,232
2015				421	197	1,924	8,535	27,537	106,510	34,382			179,506
2016				335	50	2,175	10,933	6,283	82,654	28,196			130,626
2017				482	47	181	3,072	3,724	57,876	17,871			83,253
2018			235	115	31	816	5,889	4,767	43,544	15,848	1,767	340	73,352
2019	109	23		223	14	347	4,520	4,084	25,071	16,695			51,086
TOTAL	290	1,443	25,467	119,647	42,563	122,362	950,418	1,427,899	4,343,805	1,731,725	53,805	4,416	8,823,840
10-YR Average				890	209	2,086	21,214	25,973	78,630	28,037			158,004

Note: No extended fish counts in Mar, Nov, or Dec of 2019.

Plate 5 McNary Lock and Dam



McNARY DAM

FISH COUNTING SCHEDULE

Washington Ladder Schedule

1 January – 31 March	No counting.
1 April – 31 October	Visual counts daily (0400-2000 hours PST).
15 June – 30 September	Nightly video lamprey counts (2000-0400 hours PST).
1 November – 31 December	No counting.

Oregon Ladder Schedule

1 January – 31 March	No counting.
1 April – 31 October	Visual counts daily (0400-2000 hours PST).
15 June – 30 September	Nightly video lamprey counts (2000-0400 hours PST).
1 November – 31 December	No counting.

FISH LADDER OPERATING SCHEDULE

Washington Ladder

8 – 23 January, 16 – 31 December	Ladder dewatered for annual maintenance.
1 – 8 January, 23 January – 16 December	Ladder in service.

Oregon Ladder

1 – 24 January	Ladder in service.
24 January – 28 February	Ladder dewatered for annual maintenance.
28 February – 31 December	Ladder in service.

FISHWAY ACTIVITIES

Temperature monitoring occurred in both ladders from 1 April to 30 September.

Washington ladder maintenance activities in January consisted of maintenance on all above water systems and completion of the entrance weir drive system rehabilitation. The entrance pool was again dewatered and the diffuser grating was physically inspected. Grating supports were repaired in diffusers 1, 2 and 5 through 9.

The Wasco County PUD system did not provide axillary water from 2 to 23 January.

Oregon ladder maintenance activities in January and February consisted of maintenance on all above water systems. Entrance weirs NFEW2 and NFEW3 drive systems were rehabilitated. The lamprey passage structure below SFEW2 was modified. Due to budget constraints, floating orifice gate (FOGs) rehabilitation was again delayed. The diffuser grating was not inspected. Due to the 1000 cubic feet per second (cfs) auxiliary conduit discharge valves requiring rehabilitation, the conduit was not removed from service again this year.

The fish pumps were out of service from 24 January to 1 March for annual maintenance. Fish pump 1 was out of service for overhaul from 18 March to 31 December.

From 28 March to 17 December, the juvenile bypass channel was operated for both juvenile and adult fallback passage. From 17 to 20 December, the system was in emergency bypass during ESBS removal. From 1 January to 28 March and 20 to 31 December, the system was out of service for maintenance. When in emergency bypass or out of service, the system does not provide auxiliary flow to the Oregon ladder's north powerhouse entrances.

TABLE 70

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER McNARY DAM

DAYTIME-LIVE

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*				185	30,986	29,498	18,977	10,372	100,861	38,072			228,951
STEELHEAD				264	13	168	3,900	3,095	22,103	17,967			47,510
SOCKEYE						24,684	26,625	244	7	1			51,561
COHO*								36	13,699	14,410			28,145
CHUM													0
PINK							1	0	1				2
TOTAL				449	30,999	54,350	49,503	13,747	136,671	70,450			356,169
SHAD					15,179	2,259,310	764,598	12,261					3,051,348
LAMPREY					-11	71	449	380	112	4			1,005
STURGEON													0
BULL TROUT							1	1	0	-1			1

NIGHT-VIDEO

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*						484	293	216	1,280				2,273
STEELHEAD						35	50	97	1,659				1,841
SOCKEYE						1,900	2,752	134	1				4,787
COHO*								6	371				377
CHUM													0
PINK													0
TOTAL						2,419	3,095	453	3,311				9,278
LAMPREY						76	617	630	159				1,482
BULL TROUT													0

*Jacks Included

note: For count schedules refer to the McNary Dam narrative.

For 24 hour annual totals add the daytime and night totals.

TABLE 71

DISCHARGE AND WATER QUALITY DATA

MCNARY PROJECT 2019

JANUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Jan 1	103.8	0.0	6+	43.0
Jan 2	117.8	0.0	6+	43.0
Jan 3	118.7	0.0	6+	43.0
Jan 4	121.2	0.0	6+	42.0
Jan 5	122.7	0.0	6+	42.0
Jan 6	137.6	0.0	6+	42.0
Jan 7	110.3	0.0	7+	42.0
Jan 8	121.1	0.0	6+	42.0
Jan 9	120.3	0.0	6+	41.0
Jan 10	133.8	0.0	7+	41.0
Jan 11	147.0	0.0	6+	41.0
Jan 12	143.8	0.0	6+	41.0
Jan 13	136.1	0.0	6+	41.0
Jan 14	113.6	0.0	6+	41.0
Jan 15	143.0	0.0	6+	41.0
Jan 16	155.4	0.0	6+	41.0
Jan 17	133.0	0.0	6+	41.0
Jan 18	122.9	0.0	6+	41.0
Jan 19	110.8	0.0	6+	41.0
Jan 20	100.8	0.0	6+	41.0
Jan 21	101.3	0.0	6+	41.0
Jan 22	93.2	0.0	6+	41.0
Jan 23	123.7	0.0	6+	41.0
Jan 24	112.6	0.0	6+	41.0
Jan 25	124.7	0.0	6+	41.0
Jan 26	119.0	0.0	6+	41.0
Jan 27	119.8	0.0	6+	41.0
Jan 28	101.2	0.0	6+	41.0
Jan 29	113.7	0.0	6+	41.0
Jan 30	125.3	0.0	6+	40.0
Jan 31	128.7	0.0	6+	40.0
AVG.	121.8	0.0	6+	41.3

FEBRUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Feb 1	142.6	0.0	6+	40.0
Feb 2	125.4	0.0	6+	40.0
Feb 3	123.6	0.0	6+	40.0
Feb 4	115.2	0.0	N/A	40.0
Feb 5	132.3	0.0	6+	40.0
Feb 6	147.7	0.0	6+	40.0
Feb 7	136.5	0.0	6+	38.0
Feb 8	112.0	0.0	6+	37.0
Feb 9	109.9	0.0	6+	37.0
Feb 10	125.3	0.0	6+	36.0
Feb 11	118.0	0.0	N/A	35.0
Feb 12	119.4	0.0	N/A	35.0
Feb 13	133.2	0.0	N/A	35.0
Feb 14	129.1	0.0	N/A	35.0
Feb 15	133.7	0.0	6+	35.0
Feb 16	113.3	0.0	6+	35.0
Feb 17	126.7	0.0	6+	35.0
Feb 18	126.0	0.0	6+	35.0
Feb 19	129.6	0.0	6+	35.0
Feb 20	129.1	0.0	6+	35.0
Feb 21	113.9	0.0	6+	36.0
Feb 22	117.4	0.0	6+	36.0
Feb 23	140.7	0.0	6+	36.0
Feb 24	144.4	0.0	6+	36.0
Feb 25	142.9	0.0	6+	36.0
Feb 26	121.3	0.0	6+	35.0
Feb 27	125.2	0.0	6+	35.0
Feb 28	115.4	0.0	6+	35.0
AVG.	126.8	0.0	6+	36.5

MARCH				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Mar 1	122.9	0.0	6+	36.0
Mar 2	108.6	0.0	6+	36.0
Mar 3	110.0	0.0	6+	36.0
Mar 4	109.9	0.0	6+	36.0
Mar 5	137.6	0.0	6+	36.0
Mar 6	147.0	0.0	6+	36.0
Mar 7	153.3	0.0	6+	36.0
Mar 8	152.0	0.0	6+	36.0
Mar 9	138.5	0.0	6+	36.0
Mar 10	152.4	0.0	6+	37.0
Mar 11	137.2	0.0	6+	37.0
Mar 12	119.3	0.0	6+	37.0
Mar 13	110.8	0.0	6+	37.0
Mar 14	102.9	0.0	6+	37.0
Mar 15	113.0	0.0	6+	38.0
Mar 16	125.5	0.0	6+	38.0
Mar 17	99.9	0.0	6+	38.0
Mar 18	122.9	0.0	6+	39.0
Mar 19	117.1	0.0	6+	39.0
Mar 20	118.9	0.0	6+	39.0
Mar 21	123.7	0.0	6+	39.0
Mar 22	119.5	0.0	5+	39.0
Mar 23	137.6	0.0	5+	41.0
Mar 24	136.7	0.0	5+	52.0
Mar 25	143.3	0.0	5+	43.0
Mar 26	159.1	0.0	5+	43.0
Mar 27	154.6	0.0	3.6	43.0
Mar 28	156.2	0.0	4.3	44.0
Mar 29	162.3	0.0	4.2	44.0
Mar 30	164.1	0.0	3.0	44.0
Mar 31	162.5	0.0	3.0	44.0
AVG.	132.9	0.0	6.0	39.2

TABLE 72

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped			DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE	STEELHEAD	STEELHEAD			PINK	SHAD	LAMPREY
Apr 1	1			0			-3	-2				168.6	0.0	3.0	45.0
Apr 2	1			0			10	-1				141.1	0.0	3.4	45.0
Apr 3	0			0			22	11				136.3	0.0	4.0	46.0
Apr 4	1			0			15	11				128.2	0.0	4.0	47.0
Apr 5	-1			0			10	4				141.0	0.0	4.0	47.0
Apr 6	0			0			11	3				150.6	0.0	4.0	47.0
Apr 7	1			1			13	12				164.8	0.0	4.0	48.0
Apr 8	1			1			14	6				173.8	0.0	4.2	48.0
Apr 9	0			0			2	-4				178.5	10.6	3.8	48.0
Apr 10	0			0			13	3				230.8	66.4	3.7	48.0
Apr 11	0			0			50	4				305.7	176.1	2.1	48.0
Apr 12	0			0			14	-1				285.8	171.6	1.8	48.0
Apr 13	1			0			15	2				248.7	164.6	1.5	48.0
Apr 14	1			0			11	2				216.4	143.2	1.5	48.0
Apr 15	1			0			7	3				205.4	130.7	1.3	48.0
Apr 16	1			0			7	2				204.1	130.7	1.0	48.0
Apr 17	0			0			5	-1				207.9	133.1	1.0	48.0
Apr 18	0			0			4	1				199.7	127.3	1.0	48.0
Apr 19	0			0			3	1				198.0	126.0	1.0	48.0
Apr 20	0			0			10	2				220.6	147.1	1.0	49.0
Apr 21	4			0			12	1				201.3	128.9	1.0	49.0
Apr 22	6			3			4	-1				245.0	161.5	1.5	50.0
Apr 23	8			0			6	3				263.9	167.9	1.5	51.0
Apr 24	15			0			4	0				277.8	170.8	2.0	52.0
Apr 25	9			0			2	2				305.8	176.9	2.0	53.0
Apr 26	10			0			0	0				321.9	182.1	2.5	53.0
Apr 27	6			0			2	0				292.9	175.4	1.6	53.0
Apr 28	26			0			0	0				279.6	171.3	1.6	53.0
Apr 29	38			0			0	0				276.5	173.4	N/A	53.0
Apr 30	50			0			1	1				269.0	172.2	2.6	51.0
TOTAL	180			5			264	64							
AVG.	6			0			9	2				221.3	106.9	2.3	48.9

Note: Live counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.
Official Spring Chinook run started April 1.

TABLE 73

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped			DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK			SHAD	LAMPREY	KCFS	KCFS
May 1	37			0			0	5	4		0	0	268.2	172.9	2.5	51.0
May 2	75			1			0	4	3		0	0	253.6	166.6	2.5	51.0
May 3	88			2			0	3	2		0	0	239.3	160.0	2.5	51.0
May 4	97			3			0	3	1		0	0	239.6	159.9	3.9	51.0
May 5	132			2			0	2	1		0	0	233.8	154.9	4.5	51.0
May 6	356			9			0	3	2		0	0	220.8	144.7	4.6	51.0
May 7	912			28			0	0	0		0	0	229.3	151.2	4.7	53.0
May 8	1,037			65			0	2	1		0	0	239.6	160.1	5.4	53.0
May 9	1,601			50			0	1	1		0	0	231.9	155.8	4.8	53.0
May 10	1,283			36			0	0	0		0	0	242.3	156.9	4.3	53.0
May 11	1,376			60			0	0	0		0	0	256.3	164.2	4.3	54.0
May 12	2,857			136			0	1	1		0	0	281.1	168.6	5.3	54.0
May 13	2,038			137			0	3	2		1	0	262.9	167.4	5.3	55.0
May 14	1,458			144			0	0	0		1	0	277.1	171.4	5.0	55.0
May 15	1,292			172			0	0	0		3	0	294.5	175.2	4.7	56.0
May 16	1,540			224			1	-2	-2		3	0	327.6	180.8	6.0	56.0
May 17	900			170			0	0	0		5	-11	323.2	183.9	6.0	56.0
May 18	1,030			247			0	0	0		7	0	325.3	184.2	4.0	54.0
May 19	1,013			270			0	0	0		35	0	342.3	197.1	4.0	54.0
May 20	591			164			0	0	0		31	0	347.3	188.2	4.0	55.0
May 21	739			266			0	-1	-1		113	0	317.5	181.5	5.0	55.0
May 22	871			255			0	-2	-2		58	0	309.7	178.6	5.0	55.0
May 23	717			189			-1	-2	-2		38	0	293.6	173.0	5.0	55.0
May 24	835			293			0	0	0		263	0	284.6	175.0	4.4	55.0
May 25	720			239			0	0	0		215	0	264.4	184.4	4.6	55.0
May 26	380			189			0	-5	-5		990	0	287.0	139.0	4.7	55.0
May 27	604			157			0	-1	-1		1514	0	273.2	172.9	4.0	55.0
May 28	547			144			0	0	0		1404	0	276.4	173.4	4.0	56.0
May 29	612			181			0	0	0		2232	0	295.8	177.1	6+	56.0
May 30	604			149			0	-1	0		2446	0	287.5	176.4	6+	57.0
May 31	500			162			0	0	0		5820	0	297.0	177.1	6+	57.0
TOTAL	26,842			4,144			0	13	5		15,179	-11				
AVG.	866			134			0	0	0		490	0	278.2	170.1	4.5	54.1
RUN YEAR		CHINOOK	CHINOOK					TOTAL	unclipped							
TOTALS TO DATE		ADULT	JACK				SOCKEYE	STEELHEAD	STEELHEAD		SHAD	LAMPREY				
SPRING		27,022	4,149				0	277	69		15,179	-11				

TABLE 74

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	PINK	SHAD	LAMPREY	DISCH	SPILL	TURBIDITY	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD				STEELHEAD	KCFS	KCFS	
Jun 1	498			179			0	0	0		0	317.9	184.0	6+	59.0
Jun 2	601			135			0	-1	-1		0	339.6	189.7	6+	59.0
Jun 3	584			136			1	0	0		0	304.7	184.1	6+	59.0
Jun 4	484			93			9	2	1		0	309.0	178.2	4.0	59.0
Jun 5	639			134			9	1	1		0	298.9	174.9	5.0	60.0
Jun 6	725			109			15	1	1		0	290.4	175.2	4.3	60.0
Jun 7	467			95			13	6	6		1	289.9	176.1	4.2	60.0
Jun 8	630			112			29	1	1		0	265.3	171.8	4.5	60.0
Jun 9		724		84			29	0	0		0	244.1	165.4	4.6	59.0
Jun 10		583		67			42	2	2		0	238.1	162.8	4.9	60.0
Jun 11		941		134			86	0	0		5	253.5	170.1	4.5	60.0
Jun 12		895		122			116	3	3		3	230.7	154.4	5.0	61.0
Jun 13		884		103			160	-1	-1		3	230.6	152.6	6.0	61.0
Jun 14		1,006		130			221	1	1		6	230.5	153.4	5.0	62.0
Jun 15		935		137			275	1	1		0	219.2	145.7	5.0	62.0
Jun 16		1,062		147			418	2	1		4	217.4	141.7	5.0	62.0
Jun 17		1,156		183			681	-3	1		6	202.2	115.5	5.0	63.0
Jun 18		954		109			567	3	2		4	202.5	115.7	5.5	63.0
Jun 19		1,599		166			926	5	4		0	192.6	110.1	5.0	63.0
Jun 20		1,398		153			1,087	9	7		1	178.1	101.9	5.0	63.0
Jun 21		1,360		171			1,323	13	13		2	182.6	104.3	6.0	63.0
Jun 22		786		108			1,129	6	2		2	216.6	123.8	5.5	63.0
Jun 23		1,061		209			2,002	9	9		1	193.1	110.4	5.2	63.0
Jun 24		951		156			1,818	11	9		1	166.7	95.3	5.0	63.0
Jun 25		901		86			2,001	16	8		3	173.5	98.8	5.0	63.0
Jun 26		780		134			2,300	18	9		9	186.1	106.0	5.8	64.0
Jun 27		773		106			2,198	11	7		6	185.6	106.2	5.8	64.0
Jun 28		803		108			2,257	15	11		6	177.6	102.2	6.0	64.0
Jun 29		577		114			2,446	21	16		3	186.5	107.2	6.0	64.0
Jun 30		907		114			2,526	16	12		5	169.4	97.5	6.0	64.0
TOTAL	4,628	21,036		3,834			24,684	168	126		71				
AVG.	579	956		128			823	6	4		2	229.8	139.2	5.1	61.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	31,650	5,142
SUMMER	21,036	2,841
TOTAL	52,686	7,983

SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
24,684	445	195	2,274,489	60

TABLE 75

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL					DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY	KCFS	KCFS	SECCHI	DEG F
Jul 1		916		121			2,261	40	32	0	70,539	3	170.4	98.0	6.0	64.0
Jul 2		1,035		185			3,221	29	24	0	62,225	9	166.4	95.5	6.0	64.0
Jul 3		687		99			3,124	50	37	0	75,040	3	150.5	85.7	6+	65.0
Jul 4		982		160			2,741	57	43	0	70,255	9	144.9	82.5	6+	65.0
Jul 5		787		174			1,848	80	54	0	74,635	18	137.2	78.1	6+	66.0
Jul 6		714		155			1,357	54	38	0	47,902	7	145.8	83.0	6+	66.0
Jul 7		702		148			1,517	82	51	0	60,369	12	142.0	80.8	6+	66.0
Jul 8		922		165			1,385	77	53	0	39,129	23	144.3	82.2	6+	66.0
Jul 9		930		170			1,236	114	73	0	36,238	8	151.3	86.0	6+	66.0
Jul 10		578		126			1,293	107	73	0	46,013	21	141.3	81.0	6+	66.0
Jul 11		582		124			1,031	111	80	1	28,267	12	135.6	77.8	6+	69.0
Jul 12		461		116			799	140	83	0	20,654	8	148.2	84.4	6+	69.0
Jul 13		557		117			798	145	100	0	26,448	20	154.5	87.9	6+	69.0
Jul 14		613		112			683	161	112	0	20,062	2	164.7	93.7	6+	69.0
Jul 15		393		90			519	151	100	0	18,249	11	150.7	85.8	6+	68.0
Jul 16		469		114			428	175	109	0	13,466	10	152.8	86.9	6+	68.0
Jul 17		477		100			346	181	122	0	12,186	12	136.6	77.8	6+	68.0
Jul 18		381		98			313	236	157	0	7,729	14	148.6	84.6	6+	68.0
Jul 19		350		114			286	175	101	0	4,088	5	151.8	86.5	6+	69.0
Jul 20		364		78			219	197	116	0	4,214	6	159.6	90.9	6+	69.0
Jul 21		235		61			178	199	127	0	3,953	20	159.1	90.5	6+	69.0
Jul 22		174		53			229	142	111	0	4,603	25	140.5	80.1	6+	69.0
Jul 23		292		54			190	118	75	0	3,856	10	144.6	82.5	6+	69.0
Jul 24		321		66			138	154	98	0	3,283	29	146.4	83.3	6+	68.0
Jul 25		277		53			100	148	96	0	2,302	30	146.6	83.9	6+	68.0
Jul 26		434		85			94	131	89	0	1,489	22	153.6	87.6	6+	68.0
Jul 27		232		75			64	168	108	0	1,570	16	160.1	91.4	6+	68.0
Jul 28		238		78			87	174	118	0	1,978	13	134.2	76.7	6+	68.0
Jul 29		259		54			64	122	65	0	1,851	26	136.1	77.6	6+	68.0
Jul 30		215		51			39	86	59	0	1,403	20	148.7	84.6	6+	70.0
Jul 31		179		25			37	96	71	0	602	25	150.0	85.4	6+	70.0
TOTAL		15,756		3,221			26,625	3,900	2,575	1	764,598	449				

AVG.		508		104			859	126	83	0	24,664	14	148.9	84.9	6+	67.6
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	31,650	5,142
SUMMER	36,792	6,062
TOTAL	68,442	11,204

	TOTAL	unclipped			
SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD	LAMPREY
	51,309	4,345	2,770	1	3,039,087
					509

*Note: one Bull Trout counted up on July 15.

TABLE 76

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped		PINK	SHAD	LAMPREY	DISCH SPILL TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD				KCFS	KCFS	SECCHI	DEG F
Aug 1		148		68	0	0	23	111	78		968	14	157.8	89.8	6+	70.0
Aug 2		205		53	0	0	22	95	71		1,259	14	181.4	103.4	6+	70.0
Aug 3		141		34	0	0	23	85	62		865	15	170.6	97.3	6+	70.0
Aug 4		178		78	0	0	26	82	57		475	8	147.4	84.0	6+	70.0
Aug 5		125		32	0	0	24	64	44		899	24	151.4	86.1	6+	70.0
Aug 6		142		27	0	0	35	88	43		1,074	38	143.2	87.4	6+	70.0
Aug 7		117		23	1	0	4	80	58		1,217	16	154.2	87.9	6+	71.0
Aug 8		63		16	0	0	4	74	50		714	22	158.4	90.2	6+	71.0
Aug 9			88	33	0	0	11	124	94		653	25	160.5	91.4	6+	71.0
Aug 10			101	35	0	0	4	74	50		469	17	136.5	77.9	6+	71.0
Aug 11			131	41	0	0	6	65	43		554	5	143.0	81.6	6+	71.0
Aug 12			88	25	0	0	18	78	56		536	23	128.0	71.6	6+	71.0
Aug 13			94	19	-2	0	3	58	38		342	12	119.9	64.0	6+	70.0
Aug 14			140	43	0	0	7	92	63		286	7	141.0	78.9	6+	71.0
Aug 15			115	25	0	0	2	103	66		154	14	154.3	87.7	6+	71.0
Aug 16			135	10	1	0	4	105	68		204	5	127.8	72.8	6+	71.0
Aug 17			198	22	0	0	2	73	46		233	11	137.1	78.2	6+	71.0
Aug 18			161	39	0	0	4	93	52		325	6	128.6	72.6	6+	71.0
Aug 19			231	30	0	0	4	76	55		292	13	117.8	61.7	6+	71.0
Aug 20			207	30	0	0	2	73	51		110	12	104.2	47.6	6+	71.0
Aug 21			197	49	0	0	3	83	39		54	13	139.5	78.9	6+	71.0
Aug 22			226	39	0	0	1	119	61		72	7	148.2	84.6	6+	71.0
Aug 23			356	56	0	0	0	113	55		61	9	148.2	83.4	6+	71.0
Aug 24			311	55	1	0	0	124	54		84	8	142.6	81.4	6+	71.0
Aug 25			408	51	1	0	0	106	57		118	7	127.7	69.6	6+	70.0
Aug 26			599	81	1	0	4	86	41		122	13	95.4	40.1	6+	70.0
Aug 27			947	108	2	0	5	110	52		37	3	108.9	53.5	6+	70.0
Aug 28			613	103	1	1	1	122	56		35	2	129.6	73.9	6+	70.0
Aug 29			555	104	0	1	1	175	105		18	9	129.3	73.7	6+	70.0
Aug 30			724	118	5	3	1	193	100		13	3	131.9	75.2	6+	70.0
Aug 31			1,032	149	14	6	0	171	97		18	5	132.8	75.7	6+	70.0
TOTAL		1,119	7,657	1,596	25	11	244	3,095	1,862		12,261	380				
AVG.		140	333	51	1	0	8	100	60		396	12	138.6	77.5	6+	70.5

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	31,650	5,142
SUMMER	37,911	6,393
FALL	7,657	1,265
TOTAL	77,218	12,800

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD
25	11	51,553	7,440	4,632

SHAD	LAMPREY
3,051,348	889

Note: one Bull trout counted up on August 6

TABLE 77

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	PINK	SHAD	LAMPREY	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK								SOCKEYE	STEELHEAD
Sep 1			1,752	248	32	12	307	154	0		13	129.8	73.9	6+	70.0
Sep 2			1,185	193	45	5	255	107	0		13	100.8	0.2	6+	70.0
Sep 3			1,470	211	20	6	290	145	0		8	82.8	0.0	6+	70.0
Sep 4			1,216	179	19	3	302	147	0		10	112.0	0.0	6+	70.0
Sep 5			1,289	209	14	3	359	159	0		9	100.2	0.0	6+	70.0
Sep 6			1,204	209	13	11	200	88	0		8	98.1	0.0	6+	71.0
Sep 7			1,104	265	11	2	153	76	0		10	83.8	0.0	6+	71.0
Sep 8			773	203	24	10	130	50	0		1	85.8	0.0	6+	71.0
Sep 9			925	250	24	20	162	77	0		2	86.9	0.0	6+	71.0
Sep 10			2,208	432	70	37	312	117	0		3	70.7	0.0	6+	71.0
Sep 11			1,020	267	40	29	228	103	0		6	79.2	0.0	6+	71.0
Sep 12			1,453	283	60	31	437	165	1		0	82.2	0.0	6+	71.0
Sep 13			1,919	383	108	58	509	185	0		2	86.8	0.2	6+	69.0
Sep 14			2,110	486	71	42	555	234	0		6	90.6	0.0	6+	69.0
Sep 15			3,121	539	99	13	580	258	0		3	78.4	0.0	6+	69.0
Sep 16			4,751	616	140	14	662	280	0		1	73.5	3.8	6+	69.0
Sep 17			6,219	662	286	51	635	236	0		1	92.0	0.0	6+	68.0
Sep 18			4,345	826	189	16	739	289	0		3	101.1	6.7	6+	68.0
Sep 19			5,353	831	194	27	752	345	0		1	85.8	1.8	6+	68.0
Sep 20			6,389	579	465	43	1,551	649	0		1	81.9	1.3	6+	67.0
Sep 21			4,173	546	512	43	1,148	482	0		1	72.7	1.9	6+	67.0
Sep 22			6,992	703	839	82	1,774	784	0		2	77.1	1.3	6+	66.0
Sep 23			6,357	707	1,685	66	2,741	1,092	0		0	79.9	3.0	6+	66.0
Sep 24			4,852	422	1,703	112	1,894	716	0		2	70.6	0.0	6+	66.0
Sep 25			2,309	328	1,118	98	997	351	0		1	68.3	1.6	6+	66.0
Sep 26			2,567	314	1,073	85	931	324	0		2	78.9	0.9	6+	66.0
Sep 27			3,246	374	741	135	910	220	0		0	74.1	0.0	6+	65.0
Sep 28			3,933	598	1,459	196	1,240	445	0		2	82.8	2.1	6+	64.0
Sep 29			2,633	543	710	127	754	232	0		0	80.6	1.3	6+	64.0
Sep 30			1,401	186	442	116	596	216	0		1	71.8	1.6	6+	64.0
TOTAL			88,269	12,592	12,206	1,493	7	22,103	8,726	1	112				

AVG.			2,942	420	407	50	0	737	291	0	4	85.3	3.4	6+	68.3
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	31,650	5,142
SUMMER	37,911	6,393
FALL	95,926	13,857
TOTAL	165,487	25,392

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY
12,231	1,504	51,560	29,543	13,358	1	3,051,348	1,001

TABLE 78

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	PINK	SHAD	LAMPREY	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK								SOCKEYE	STEELHEAD
Oct 1			2,211	252	482	20	688	276			0	92.1	0.0	6+	64.0
Oct 2			3,925	454	739	34	834	323			2	89.1	2.0	6+	64.0
Oct 3			2,363	328	818	219	927	336			0	90.6	1.2	6+	63.0
Oct 4			2,768	354	1,049	31	1,041	396			0	98.5	1.7	6+	63.0
Oct 5			1,993	341	764	16	957	378			0	81.9	0.0	6+	63.0
Oct 6			1,908	261	501	19	743	284			0	73.5	3.9	6+	63.0
Oct 7			1,466	231	498	8	768	303			0	74.3	1.9	6+	63.0
Oct 8			1,210	247	612	169	1,009	310			1	71.2	1.5	6+	60.0
Oct 9			1,348	247	620	46	755	298			0	73.0	2.1	6+	60.0
Oct 10			1,064	185	413	15	453	196			0	92.0	0.0	6+	60.0
Oct 11			1,142	187	342	19	507	219			0	91.0	1.7	6+	60.0
Oct 12			905	232	349	89	555	187			1	92.9	0.0	6+	60.0
Oct 13			1,177	176	475	17	557	260			0	84.3	3.2	6+	59.0
Oct 14			1,178	183	481	36	578	274			0	92.5	1.7	6+	58.0
Oct 15			1,206	200	461	27	696	312			0	80.7	0.0	6+	58.0
Oct 16			594	129	202	3	409	163			0	82.5	2.0	6+	58.0
Oct 17			598	158	253	5	415	187			0	92.7	1.3	6+	58.0
Oct 18			452	149	399	16	790	337			0	96.4	3.1	6+	58.0
Oct 19			604	94	246	10	553	265			0	81.4	0.0	6+	58.0
Oct 20			462	118	197	10	481	246			0	80.9	1.6	6+	58.0
Oct 21			438	114	258	71	476	198			0	77.1	0.0	6+	58.0
Oct 22			454	76	515	118	467	205			0	85.2	1.6	6+	57.0
Oct 23			561	55	715	39	576	321			0	82.6	0.0	6+	57.0
Oct 24			448	65	605	35	507	278			0	77.8	3.1	6+	57.0
Oct 25			387	76	442	15	514	284			0	78.8	1.8	6+	56.0
Oct 26			360	48	338	18	633	393			0	72.1	1.3	6+	56.0
Oct 27			366	42	217	8	406	232			0	80.6	1.3	6+	56.0
Oct 28			286	43	103	7	288	178			0	78.3	0.0	6+	56.0
Oct 29			369	30	66	5	173	95			0	91.4	3.3	6+	55.0
Oct 30			321	33	68	7	119	69			0	97.1	0.0	6+	55.0
Oct 31			372	28	44	6	92	36			0	93.9	1.5	6+	54.0
TOTAL			32,936	5,136	13,272	1,138	1	17,967	7,839		4				

AVG.	1062	166	428	37	0	580	253	0	84.7	1.4	6+	58.9
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	31,650	5,142
SUMMER	37,911	6,393
FALL	128,862	18,993
TOTAL	198,423	30,528

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY
25,503	2,642	51,561	47,510	21,197	1	3,051,348	1,005

Note: Minus one Bull Trout counted on October 5.
 Official Fall Chinook run ended October 31.

TABLE 79
DISCHARGE AND WATER QUALITY DATA
MCNARY PROJECT 2019

NOVEMBER					DECEMBER				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F	DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Nov 1	95.5	1.5	6+	54.0	Dec 1	136.7	0.0	6+	46.0
Nov 2	96.0	0.0	6+	53.0	Dec 2	125.1	0.0	6+	45.0
Nov 3	109.7	1.7	6+	52.0	Dec 3	130.7	0.0	6+	45.0
Nov 4	97.2	1.1	6+	51.0	Dec 4	127.5	0.0	6+	45.0
Nov 5	100.1	1.6	6+	52.0	Dec 5	128.8	0.0	6+	45.0
Nov 6	109.1	0.0	6+	51.0	Dec 6	127.7	0.0	6+	45.0
Nov 7	112.5	2.8	6+	51.0	Dec 7	124.6	0.0	6+	45.0
Nov 8	109.8	1.7	6+	51.0	Dec 8	122.4	0.0	6+	45.0
Nov 9	122.4	1.1	6+	51.0	Dec 9	112.6	0.0	6+	45.0
Nov 10	127.4	1.4	6+	51.0	Dec 10	111.0	0.0	6+	45.0
Nov 11	133.5	2.2	6+	51.0	Dec 11	137.0	0.0	6+	45.0
Nov 12	131.9	3.0	6+	51.0	Dec 12	126.8	0.0	6+	45.0
Nov 13	141.6	0.0	6+	51.0	Dec 13	115.6	0.0	6+	45.0
Nov 14	114.7	1.4	6+	51.0	Dec 14	112.5	0.0	6+	45.0
Nov 15	132.8	1.5	6+	51.0	Dec 15	125.2	0.0	6+	45.0
Nov 16	114.7	1.8	6+	51.0	Dec 16	111.6	0.0	6+	45.0
Nov 17	105.3	1.1	6+	51.0	Dec 17	126.0	0.0	6+	45.0
Nov 18	110.9	0.0	6+	51.0	Dec 18	132.6	0.0	6+	45.0
Nov 19	120.0	0.0	6+	51.0	Dec 19	124.6	0.0	6+	45.0
Nov 20	120.6	0.0	6+	52.0	Dec 20	105.9	0.0	6+	44.0
Nov 21	115.7	0.0	6+	51.0	Dec 21	83.2	0.0	6+	44.0
Nov 22	110.4	0.3	6+	51.0	Dec 22	88.5	0.0	6+	44.0
Nov 23	119.1	0.0	6+	51.0	Dec 23	90.1	0.0	6+	44.0
Nov 24	128.7	0.0	6+	51.0	Dec 24	93.9	0.0	6+	44.0
Nov 25	119.0	0.0	6+	50.0	Dec 25	104.8	0.0	6+	44.0
Nov 26	109.2	0.0	6+	50.0	Dec 26	93.8	0.0	6+	44.0
Nov 27	125.1	0.0	6+	47.0	Dec 27	118.9	0.0	6+	44.0
Nov 28	138.2	0.0	6+	48.0	Dec 28	124.7	0.0	6+	44.0
Nov 29	136.2	0.0	6+	47.0	Dec 29	116.5	0.0	6+	43.0
Nov 30	137.9	0.0	6+	47.0	Dec 30	107.6	0.0	6+	43.0
					Dec 31	102.7	0.0	6+	43.0
AVG.	118.2	0.8	6+	50.7	AVG.	115.8	0.0	6+	44.5

TABLE 80

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped		PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE	STEELHEAD		
Jun 1											
Jun 2											
Jun 3											
Jun 4											
Jun 5											
Jun 6											
Jun 7											
Jun 8											
Jun 9											
Jun 10											
Jun 11											
Jun 12											
Jun 13											
Jun 14											
Jun 15		28		9			18	0	0		1
Jun 16		25		2			34	0	0		3
Jun 17		35		3			50	3	0		1
Jun 18		29		7			37	9	5		2
Jun 19		49		3			47	7	3		3
Jun 20		35		2			24	2	1		3
Jun 21		55		0			63	7	3		4
Jun 22		57		0			92	6	2		5
Jun 23		19		1			125	0	0		4
Jun 24		24		3			183	0	0		4
Jun 25		19		0			133	0	0		3
Jun 26		14		4			146	0	0		17
Jun 27		20		0			202	1	1		4
Jun 28		14		0			226	0	1		4
Jun 29		11		1			252	0	0		9
Jun 30		12		3			268	0	0		9
TOTAL		446		38			1,900	35	16		76

Note: Night counts are video counts from 2000-0400 PST.

TABLE 81

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		
Jul 1		9		1			161	0	0		10
Jul 2		5		0			289	0	0		3
Jul 3		9		0			275	0	0		9
Jul 4		12		0			283	1	1		19
Jul 5		20		3			189	2	1		12
Jul 6		15		2			213	0	0		13
Jul 7		4		1			53	2	0		22
Jul 8		13		1			168	1	0		18
Jul 9		3		2			119	2	1		29
Jul 10		16		1			89	0	0		18
Jul 11		14		2			127	1	0		12
Jul 12		7		1			131	1	1		12
Jul 13		17		4			89	3	2		22
Jul 14		9		1			75	4	1		29
Jul 15		9		2			60	2	0		9
Jul 16		6		1			66	-1	-1		15
Jul 17		13		0			52	0	0		4
Jul 18		3		1			42	4	2		20
Jul 19		6		2			43	-1	-1		10
Jul 20		10		2			33	2	0		21
Jul 21		9		0			26	0	0		25
Jul 22		1		0			22	2	1		35
Jul 23		6		1			36	1	1		18
Jul 24		3		0			36	1	0		23
Jul 25		11		1			25	2	0		23
Jul 26		8		2			6	4	4		32
Jul 27		11		1			12	3	3		25
Jul 28		5		0			9	6	5		36
Jul 29		4		0			4	3	1		42
Jul 30		0		0			8	2	1		30
Jul 31		3		0			11	3	3		21
TOTAL		261		32			2,752	50	26		617

AVG. 8 1 89 2 1 20

Note: Night counts are video counts from 2000-0400 PST.

TABLE 82

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	LAMPREY
	SPRING	SUMMER	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		
Aug 1		4	1	0	0	21	1	1		13
Aug 2		9	0	0	0	4	0	-1		33
Aug 3		9	0	0	0	5	4	2		50
Aug 4		1	0	0	0	5	2	0		36
Aug 5		3	0	0	0	32	3	1		12
Aug 6		1	0	0	0	19	0	-1		27
Aug 7		1	0	0	0	10	3	3		25
Aug 8		1	1	0	0	6	2	1		20
Aug 9			0	0	0	0	0	0		19
Aug 10			1	2	0	0	2	2		24
Aug 11			3	0	0	0	0	0		30
Aug 12			6	1	0	0	7	0		38
Aug 13			3	1	0	0	8	2		9
Aug 14			1	0	0	0	3	-1		8
Aug 15			10	1	0	0	3	2		13
Aug 16			7	1	0	0	0	1		23
Aug 17			1	1	0	0	0	2		24
Aug 18			8	0	0	0	7	2		42
Aug 19			3	0	0	0	5	4		32
Aug 20			9	2	0	0	1	1		19
Aug 21			3	0	0	0	1	0		14
Aug 22			3	0	0	0	1	2		20
Aug 23			7	1	0	0	1	1		14
Aug 24			13	1	0	0	3	0		13
Aug 25			5	0	0	0	1	1		15
Aug 26			5	1	0	0	0	0		15
Aug 27			11	1	0	0	1	2		4
Aug 28			6	0	2	0	1	7		13
Aug 29			29	1	1	0	1	5		8
Aug 30			13	0	1	1	2	7		10
Aug 31			20	0	1	0	1	14		7
TOTAL		29	171	16	5	1	134	97	42	630
AVG.		4	7	1	0	0	4	3	1	20

Note: Night counts are video counts from 2000-0400 PST.

TABLE 83

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		
Sep 1			12	1	1	0	0	16	3		13
Sep 2			17	0	2	1	0	14	3		19
Sep 3			14	3	9	1	0	18	6		15
Sep 4			11	1	4	4	0	18	8		22
Sep 5			18	3	6	1	0	13	8		17
Sep 6			12	2	2	1	0	6	2		7
Sep 7			13	2	6	2	0	3	2		5
Sep 8			12	0	2	3	0	4	0		6
Sep 9			20	14	2	7	0	20	5		3
Sep 10			22	1	5	1	0	25	10		3
Sep 11			17	1	1	0	1	27	3		4
Sep 12			17	5	0	0	0	27	9		4
Sep 13			37	3	1	1	0	55	6		5
Sep 14			87	13	0	6	0	62	29		3
Sep 15			104	8	17	10	0	97	31		4
Sep 16			74	8	5	1	0	66	13		0
Sep 17			89	12	5	5	0	55	19		6
Sep 18			45	9	1	0	0	40	8		4
Sep 19			97	4	6	3	0	139	55		3
Sep 20			35	4	11	5	0	82	21		1
Sep 21			148	4	12	2	0	122	29		0
Sep 22			57	0	41	5	0	182	38		1
Sep 23			35	6	43	14	0	143	39		0
Sep 24			18	2	15	5	0	78	14		1
Sep 25			42	2	25	3	0	72	15		4
Sep 26			7	0	13	0	0	36	8		5
Sep 27			31	6	9	3	0	46	20		2
Sep 28			39	3	21	1	0	84	12		1
Sep 29			17	1	2	2	0	43	16		1
Sep 30			13	2	15	2	0	66	18		0
TOTAL			1,160	120	282	89	1	1,659	450		159
AVG.			39	4	9	3	0	55	15		5

Note: Night counts are video counts from 2000-0400 PST.

TABLE 84

YEARLY TOTALS OF SALMONIDS COUNTED OVER McNARY DAM
1954 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS*
1954	126,555	75,059	108,181	950	310,745
1955	108,915	85,575	173,758	643	368,891
1956	114,342	42,554	102,145	683	259,724
1957	292,696	105,728	85,460	2,855	486,739
1958	226,092	87,890	102,397	1,350	417,729
1959	171,490	110,475	83,977	1,970	367,912
1960	176,767	96,895	55,372	1,580	330,614
1961	154,996	103,743	16,388	2,045	277,172
1962	152,756	163,181	29,372	3,195	348,504
1963	154,459	113,646	59,744	3,113	330,962
1964	167,934	100,742	83,931	3,317	355,924
1965	150,907	118,960	42,052	2,700	314,619
1966	223,141	145,130	173,028	8,525	549,824
1967	195,653	77,700	105,635	27,226	406,214
1968	200,488	112,522	101,007	39,518	453,535
1969	213,407	76,681	29,787	53,716	373,591
1970	168,892	69,759	59,636	36,399	334,686
1971	171,448	109,630	52,867	39,358	373,303
1972	168,821	93,820	26,422	45,635	334,698
1973	184,112	64,620	42,731	17,682	309,145
1974	127,858	26,932	26,505	13,746	195,041
1975	133,150	23,663	43,143	3,975	203,931
1976	163,314	54,000	24,632	7,539	249,485
1977	183,581	87,712	80,781	4,622	356,696
1978	144,148	34,740	18,511	20,356	217,755
1979	95,275	50,304	37,792	12,800	196,171
1980	80,773	66,524	44,301	571	192,169
1981	80,619	61,985	26,644	3,736	172,984
1982	102,225	75,099	15,077	3,119	195,520
1983	121,636	125,254	40,903	2,470	290,263
1984	159,071	135,515	56,906	2,841	354,333
1985	288,483	188,204	98,457	6,917	582,061
1986	342,417	193,481	46,443	1,374	583,715
1987	286,638	148,811	72,190	615	508,254
1988	243,608	151,765	50,080	2,010	447,463
1989	176,407	170,467	41,318	3,383	391,575
1990	147,439	95,061	46,145	2,059	290,704
1991	114,841	168,962	69,365	2,272	355,440
1992	135,707	194,026	68,737	1,801	400,271
1993	143,412	93,183	66,485	481	303,561
1994	128,868	94,427	10,603	1,735	235,633
1995	113,354	114,910	8,320	1,021	237,605
1996	114,947	124,177	28,585	1,853	269,562
1997	162,946	129,817	38,043	2,580	333,386
1998	114,604	99,705	9,391	6,173	229,873
1999	121,946	84,088	11,884	4,934	222,852
2000	191,231	130,332	60,242	11,152	392,957
2001	489,784	398,784	97,188	24,730	1,010,486
2002	417,090	286,805	39,424	3,192	746,511
2003	423,363	246,898	32,037	20,231	722,529
2004	384,808	212,683	89,707	20,570	707,768
2005	270,003	224,292	63,540	20,600	578,435
2006	219,191	206,155	29,295	13,923	468,564
2007	180,435	221,534	18,175	22,825	442,969
2008	267,979	221,310	146,924	21,806	658,019
2009	358,505	408,157	121,672	37,270	925,604
2010	463,000	262,513	278,799	15,089	1,019,401
2011	440,427	246,069	113,952	44,304	844,752
2012	405,202	157,018	364,147	18,801	945,168
2013	674,362	144,354	134,202	13,881	966,799
2014	715,072	209,772	546,012	112,587	1,583,443
2015	822,516	177,137	279,744	19,901	1,299,298
2016	449,621	118,763	261,696	12,013	842,093
2017	282,735	82,472	58,022	23,607	446,836
2018	207,507	66,332	155,480	13,928	443,247
2019	228,951	47,510	51,561	28,145	356,167
Totals	15,442,920	8,816,012	5,556,950	905,998	30,721,880
10-Year Average	468,939	151,194	224,362	30,226	874,720

*Jacks included

TABLE 85

MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM: 1954 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	SPRING	SUMMER	FALL
														MAR 15- JUN 8	JUN 9- AUG 8	AUG 9- OCT 31
1954			14	919	42,625	28,510	35,993	9,287	8,626	568	13		126,555	52,014	61,065	13,476
1955				86	12,778	26,125	46,021	14,773	7,220	1,648	264		108,915	21,309	71,180	16,426
1956			7	307	10,746	34,360	50,409	11,073	5,636	1,360	444		114,342	12,717	90,335	11,290
1957			6	14,489	67,939	91,473	41,485	25,621	48,685	2,998			292,696	99,511	122,578	70,607
1958				1,864	36,684	61,898	25,140	11,120	82,890	6,496			226,092	54,910	73,654	97,528
1959				3,914	31,923	23,461	51,478	14,929	42,756	3,029			171,490	40,775	74,985	55,730
1960				4,808	44,721	49,506	25,710	13,376	35,329	3,317			176,767	52,490	76,940	47,337
1961				21,669	44,260	19,722	23,192	10,661	31,447	4,045			154,996	68,539	45,257	41,200
1962				10,527	44,053	28,621	21,008	11,751	33,541	3,255			152,756	55,884	52,756	44,116
1963				7,765	42,804	22,454	18,659	13,757	43,731	5,289			154,459	52,336	44,760	57,363
1964				19,856	33,310	10,893	39,334	14,930	45,514	4,097			167,934	54,279	55,062	58,593
1965				6,114	20,559	14,094	28,599	12,856	60,185	8,500			150,907	29,206	45,375	76,326
1966				53,484	32,282	21,161	35,895	13,811	58,275	8,233			223,141	87,195	60,827	75,119
1967				32,790	28,174	13,244	44,612	10,788	54,314	11,731			195,653	62,591	59,975	73,087
1968				13,328	51,443	20,456	37,127	15,713	53,597	8,824			200,488	67,092	60,639	72,757
1969				809	60,241	39,074	30,556	12,200	59,889	10,638			213,407	70,079	63,953	79,375
1970				28,015	34,027	18,661	23,132	13,773	44,635	6,649			168,892	63,982	43,356	61,554
1971				5,642	32,688	24,007	35,152	9,680	55,297	8,982			171,448	42,601	59,129	69,718
1972				25,911	41,609	12,553	35,322	10,154	37,131	6,141			168,821	69,023	50,491	49,307
1973				44,878	31,727	16,836	14,520	10,400	57,716	8,035			184,112	79,047	31,812	73,253
1974				1,918	34,767	7,976	18,181	6,251	45,845	12,920			127,858	40,037	25,812	62,009
1975				4,694	24,752	11,590	20,497	12,485	53,125	6,007			133,150	32,718	31,713	68,719
1976				4,868	30,435	16,714	19,821	9,143	64,863	17,470			163,314	38,505	36,818	87,991
1977				40,692	23,895	16,768	16,256	7,348	64,785	13,837			183,581	66,934	32,277	84,370
1978				27,191	37,613	14,505	18,095	7,799	30,273	7,296	1,376		144,148	68,414	31,589	44,145
1979			6	5,424	13,696	9,763	14,601	8,030	34,702	8,171	882		95,275	21,153	24,161	49,961
1980			3	3,481	18,108	6,705	12,166	7,001	24,409	8,284	616		80,773	23,001	18,862	38,910
1981			3	12,923	16,904	8,288	8,243	5,584	23,323	4,926	425		80,619	32,330	15,141	33,148
1982			3	1,638	23,487	10,357	8,749	5,091	44,276	8,624			102,225	28,352	16,574	57,299
1983				4,481	25,074	9,202	7,882	5,217	54,339	15,441			121,636	31,636	16,199	73,801
1984				1,772	23,806	9,235	12,256	8,845	79,004	23,391	767		159,076	27,474	21,201	110,401
1985			18	18,267	41,962	14,117	9,912	17,222	140,034	46,951			288,483	63,265	22,029	203,189

TABLE 85

(Continued)

MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM: 1954 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	SPRING	SUMMER	FALL
														MAR 15- JUN 8	JUN 9- AUG 8	AUG 9- OCT 31
1986			2	28,739	44,459	14,515	12,315	9,636	168,230	64,521			342,417	76,077	25,798	240,542
1987				26,258	32,171	12,889	11,219	19,123	151,410	33,568			286,638	60,396	25,353	200,889
1988				26,267	22,245	14,605	9,282	30,714	115,878	24,617			243,608	51,178	23,621	168,809
1989				9,625	24,281	12,484	11,112	23,034	80,089	15,782			176,407	35,954	24,708	115,745
1990				19,309	23,861	11,007	11,148	7,306	61,718	13,090			147,439	44,499	22,248	80,692
1991				4,942	15,838	9,289	9,409	4,328	56,251	13,674	1,074	36	114,841	22,631	17,588	74,622
1992				25,549	22,799	9,511	6,159	5,846	51,961	13,882			135,707	50,590	14,414	70,703
1993				18,649	37,255	14,880	8,119	8,414	48,093	8,002			143,412	59,556	20,374	63,482
1994				2,940	5,513	5,486	8,242	11,085	80,693	14,909			128,868	8,987	14,313	105,568
1995				1,392	3,871	4,343	8,270	13,224	61,633	20,621			113,354	5,930	13,219	94,205
1996				426	15,212	8,242	8,206	13,964	56,847	12,050			114,947	17,832	15,102	82,013
1997				6,529	44,264	18,384	10,584	6,892	63,484	12,809			162,946	56,826	23,649	82,471
1998				6,645	11,964	9,965	8,249	5,652	50,987	21,142			114,604	19,752	17,634	77,218
1999				1,193	10,841	7,570	13,475	15,402	59,360	14,105			121,946	13,232	21,618	87,096
2000				25,136	46,396	16,096	13,641	27,931	50,138	11,893			191,231	75,644	27,696	87,891
2001				164,846	86,605	50,064	36,562	16,605	111,369	23,733			489,784	265,372	77,514	146,898
2002				14,867	108,862	65,935	56,149	26,798	123,089	21,390			417,090	133,229	116,747	167,114
2003			853	53,947	46,116	57,732	50,157	13,667	166,635	32,349	1,750	157	423,363	107,522	104,948	208,982
2004			72	53,405	53,267	47,903	32,067	12,212	149,297	34,795	1,659	131	384,808	115,251	74,217	193,550
2005			4	6,750	38,439	45,654	28,928	11,655	111,701	25,976	825	71	270,003	55,056	66,858	147,189
2006			1	121	43,778	40,077	27,708	10,210	71,105	24,186	1,810	195	219,191	48,363	65,960	102,863
2007			3	7,073	38,622	27,760	18,036	8,565	60,291	18,455	1,538	92	180,435	51,104	42,436	85,262
2008				7,133	64,596	48,906	24,035	13,094	94,986	15,229			267,979	80,213	65,974	121,792
2009				1,821	98,882	63,510	26,828	30,161	117,844	19,459			358,505	113,741	78,319	166,445
2010				48,451	98,345	58,192	30,587	18,708	166,173	42,544			463,000	191,921	74,589	225,154
2011				683	118,537	64,599	46,170	21,482	144,223	44,733			440,427	132,995	102,786	204,646
2012				1,877	94,385	45,725	31,612	19,396	174,650	36,164	1,306	87	405,202	107,550	69,532	226,727
2013	7	-1		4,718	62,493	58,146	36,003	32,050	382,331	98,615			674,362	74,449	90,549	509,358
2014				10,091	102,818	63,317	47,458	18,523	395,599	77,266			715,072	123,180	104,996	486,896
2015				54,895	97,690	62,853	47,043	37,795	381,931	140,309			822,516	164,918	105,010	552,588
2016				5,606	78,622	57,638	39,343	24,867	212,562	30,983			449,621	94,565	90,395	264,661
2017			-1	195	39,803	45,382	26,396	7,238	111,360	47,122	5,058	182	282,735	51,313	61,984	164,199
2018	0	1	**	166	39,647	35,532	16,695	10,538	80,583	24,345			207,507	47,898	45,162	114,446
2019				185	30,986	29,498	18,977	10,372	100,861	38,072			228,951	36,792	44,304	147,855
Total	7	0	994	1,064,953	2,762,555	1,850,018	1,620,187	907,156	5,838,754	1,377,543	19,807	951	15,442,925	4,203,915	3,326,120	7,926,676
10-Year Average				12,687	76,333	52,088	34,028	20,097	215,027	58,015			468,939	102,558	78,931	289,653

*Jacks included

TABLE 86

**MONTHLY COUNT OF SOCKEYE SALMON
McNARY DAM: 1954 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1954					1	1,107	93,452	11,382	2,214	25			108,181
1955					43	287	163,902	9,402	121	3			173,758
1956					1	639	94,352	6,882	262	7	2		102,145
1957					13	6,318	74,874	4,233	22				85,460
1958						12,542	82,547	5,474	1,819	15			102,397
1959					21	2,031	73,735	7,981	209				83,977
1960						9,374	43,749	2,241	8				55,372
1961						1,088	14,149	1,138	11	2			16,388
1962						1,721	27,134	511	6				29,372
1963					78	8,712	50,415	535	4				59,744
1964						770	81,536	1,617	8				83,931
1965						328	40,790	923	10	1			42,052
1966						6,202	162,267	4,548	11				173,028
1967						1,935	101,044	2,647	9				105,635
1968						28,928	70,413	1,666					101,007
1969						5,787	23,353	647					29,787
1970						7,152	47,339	5,134	11				59,636
1971						317	50,568	1,982					52,867
1972						366	24,452	1,604					26,422
1973						9,011	32,301	999	420				42,731
1974						188	25,816	486	15				26,505
1975						1,517	41,011	615					43,143
1976						4,461	19,319	415	437				24,632
1977					8	36,708	43,077	739	207	42			80,781
1978						3,211	10,376	714	1,583	2,627			18,511
1979						6,317	29,571	1,547	321	36			37,792
1980						3,400	40,469	432					44,301
1981						4,419	22,042	180	1	2			26,644
1982						812	13,489	281	292	203			15,077
1983						5,897	33,851	997	142	16			40,903
1984						18,762	37,409	637	85	11	2		56,906
1985				1		60,067	36,567	522	593	707			98,457

TABLE 86

(Continued)

**MONTHLY COUNT OF SOCKEYE SALMON
McNARY DAM: 1954 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1986						8,362	36,863	819	348	51			46,443
1987					4	28,742	42,464	889	85	6			72,190
1988						23,466	25,984	599	14	17			50,080
1989					1	14,721	26,239	334	21	2			41,318
1990					1	8,922	36,791	427	0	4			46,145
1991					1	6,509	61,780	1,024	38	11	1	1	69,365
1992					7	30,339	37,915	448	28				68,737
1993						26,492	39,607	377	9				66,485
1994					1	5,910	4,672	20	0				10,603
1995					1	3,001	5,259	58	0	1			8,320
1996						11,594	16,927	64	0				28,585
1997						7,706	29,645	688	4				38,043
1998						3,585	5,754	45	7				9,391
1999						2,842	8,940	99	1	2			11,884
2000					4	44,379	15,752	106	1				60,242
2001					4	70,327	26,610	225	17	5			97,188
2002					1	12,518	26,745	156	2	2			39,424
2003					4	13,277	18,728	28	0				32,037
2004					10	61,547	28,107	38	5				89,707
2005						27,341	36,009	182	8				63,540
2006						14,675	14,473	142	5				29,295
2007					1	11,087	6,974	105	6	2			18,175
2008					1	96,655	50,196	70	2				146,924
2009					5	62,066	59,564	31	9	-3			121,672
2010					7	166,127	112,474	194	-4	1			278,799
2011						20,773	92,461	703	15				113,952
2012					1	165,803	198,037	292	14				364,147
2013					2	58,594	74,774	809	19	4			134,202
2014						178,748	365,457	1,760	43	4			546,012
2015					42	183,645	91,482	3,454	982	139			279,744
2016				1	10	190,659	70,113	864	47	2			261,696
2017					1	29,957	27,893	117	47	7			58,022
2018					2	91,285	63,831	349	13				155,480
2019					0	24,684	26,625	244	7	1			51,561
Total				2	276	1,956,712	3,490,514	94,871	10,614	3,955	5	1	5,556,950
10-Year Average						111,028	112,315	879	118				224,362

TABLE 87

**MONTHLY COUNT OF COHO SALMON
McNARY DAM: 1954 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
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			2,470
1984						6		147	2,506	154	28		2,841
1985					14	37	44	2,040	4,493	289			6,917

TABLE 87

(Continued)

**MONTHLY COUNT OF COHO SALMON
McNARY DAM; 1954 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
1986								1	851	522			1,374
1987							3	24	377	211			615
1988								17	1,210	783			2,010
1989								35	2,043	1,305			3,383
1990								1	1,007	1,051			2,059
1991									1,105	937	211	19	2,272
1992								1	1,130	670			1,801
1993								2	254	225			481
1994								9	978	748			1,735
1995								8	344	669			1,021
1996							2	1	1,212	638			1,853
1997								29	1,577	974			2,580
1998								6	687	5,480			6,173
1999								6	2,931	1,997			4,934
2000								309	6,947	3,896			11,152
2001								59	11,631	13,040			24,730
2002								10	1,765	1,417			3,192
2003								25	11,788	8,017	401		20,231
2004								17	13,954	6,161	427	11	20,570
2005								59	11,327	8,390	819	5	20,600
2006								90	7,893	5,350	588	2	13,923
2007								9	11,263	11,315	238		22,825
2008								63	14,588	7,155			21,806
2009								1,193	16,626	19,451			37,270
2010								54	9,555	5,480			15,089
2011								917	24,682	18,705			44,304
2012								424	14,779	2,998	550	50	18,801
2013		1						15	4,983	8,882			13,881
2014								36	86,736	25,815			112,587
2015						18	0	162	13,928	5,793			19,901
2016								169	8,859	2,985			12,013
2017								3	15,134	8,064	406	0	23,607
2018								88	9,985	3,855			13,928
2019								36	13,699	14,410			28,145
TOTAL	1	0	1	14	68	515	23,286	630,506	244,757	6,762	88		905,998
10-Year Average							190	20,234	9,699				30,226

*Jacks included

TABLE 88

**MONTHLY COUNT OF STEELHEAD
McNARY DAM: 1954-2019**

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			23,663
1976				936	1,372	1,949	5,772	16,145	22,423	5,403			54,000
1977				1,730	987	2,916	13,132	7,833	43,792	17,322			87,712
1978				1,266	701	1,832	3,444	4,863	15,627	5,708	1,299		34,740
1979			970	681	156	93	4,955	9,970	14,648	15,580	3,251		50,304
1980			1,753	3,355	608	381	2,740	14,431	27,706	12,776	2,774		66,524
1981			861	1,479	809	878	7,212	12,839	19,961	15,652	2,294		61,985
1982			1,530	1,764	825	321	4,279	12,621	36,282	17,477			75,099
1983				1,051	215	137	7,746	25,821	70,369	19,915			125,254
1984				1,858	860	653	13,165	14,944	68,837	33,608	1,590		135,515
1985			1,583	6,483	1,383	2,949	13,818	46,632	87,026	28,330			188,204

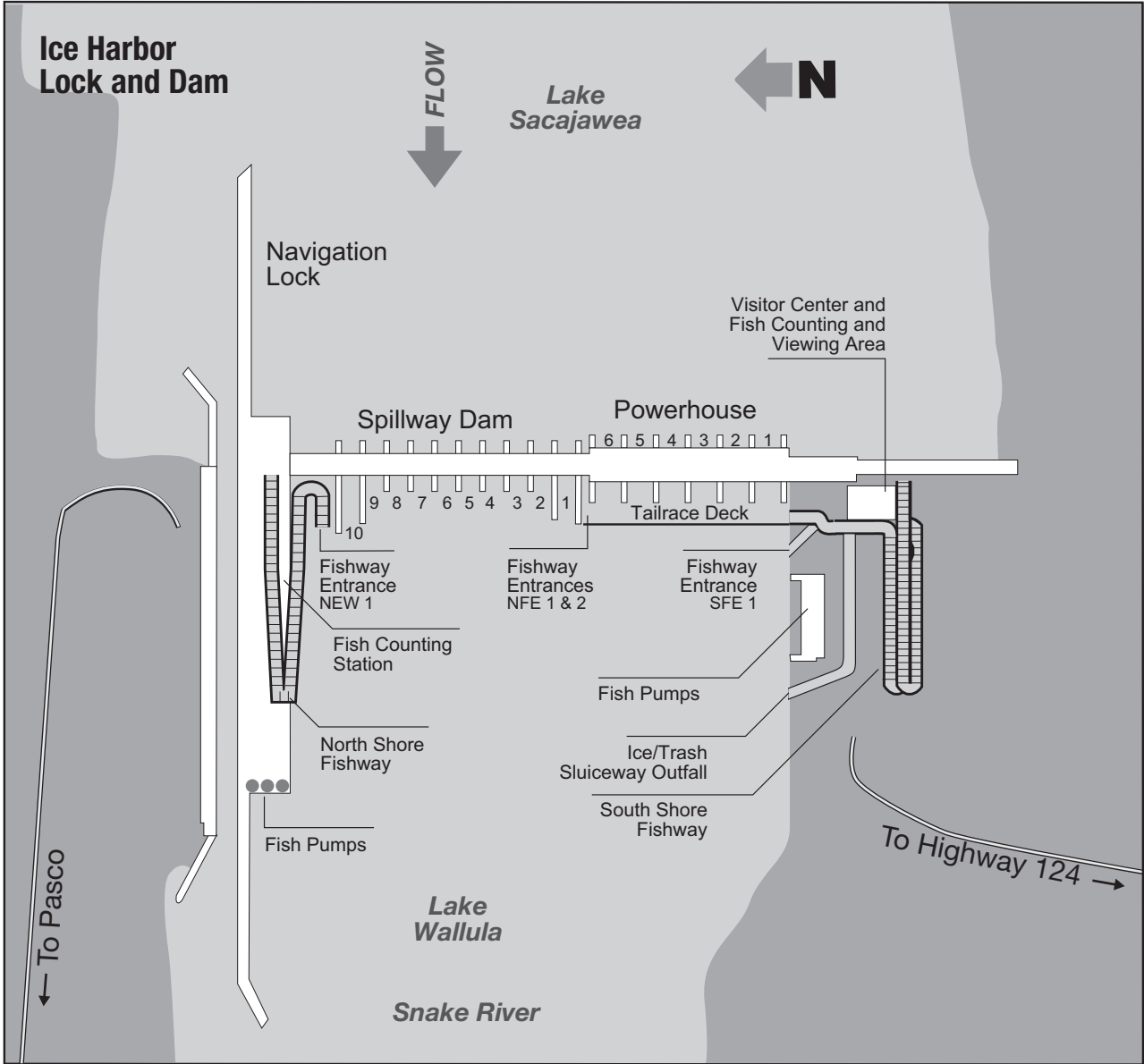
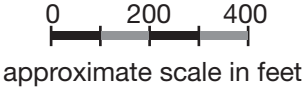
TABLE 88

(Continued)

**MONTHLY COUNT OF STEELHEAD
McNARY DAM: 1954 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
1986			1,282	1,184	414	1,193	27,563	32,339	74,769	54,737			193,481
1987				2,082	413	885	16,658	35,661	59,326	33,786			148,811
1988				4,176	1,095	2,117	11,609	25,875	69,259	37,634			151,765
1989				3,269	598	1,921	16,002	20,819	87,722	40,136			170,467
1990				2,754	660	1,489	9,105	10,368	33,452	37,233			95,061
1991				2,245	630	846	9,921	17,752	78,363	46,941	9,388	2,876	168,962
1992				1,427	642	1,921	10,989	15,504	127,626	35,917			194,026
1993				5,194	588	2,197	9,692	10,003	35,287	30,222			93,183
1994				2,622	336	1,169	7,436	5,468	40,871	36,525			94,427
1995				774	325	998	8,042	21,720	45,237	37,814			114,910
1996				701	301	950	8,726	34,385	50,723	28,391			124,177
1997				1,210	435	1,241	10,174	19,917	58,210	38,630			129,817
1998				1,236	364	1,391	6,372	4,040	38,324	47,978			99,705
1999				253	248	905	7,175	27,592	35,243	12,672			84,088
2000				588	238	1,901	16,311	23,148	59,803	28,343			130,332
2001				1,337	487	7,741	46,981	50,463	190,205	101,570			398,784
2002				4,650	271	2,957	29,979	48,226	120,936	79,786			286,805
2003			8,696	1,309	145	2,298	20,439	15,184	139,321	51,722	6,307	1,477	246,898
2004			4,316	1,133	480	3,901	14,376	10,863	132,387	37,931	4,348	2,948	212,683
2005			2,271	847	377	2,669	17,371	19,933	109,198	63,710	7,248	668	224,292
2006			1,388	2,009	175	1,272	9,214	14,519	104,009	52,826	17,808	2,935	206,155
2007			6,155	1,693	241	1,616	13,232	32,652	109,015	50,339	4,805	1,786	221,534
2008				2,066	362	2,342	27,375	26,588	122,078	40,499			221,310
2009				2,144	293	2,108	20,407	85,285	204,948	92,972			408,157
2010				1,974	397	3,668	51,028	39,689	122,146	43,611			262,513
2011				2,283	348	714	17,533	94,372	87,138	43,681			246,069
2012			3,009	1,521	234	1,744	18,373	33,983	62,318	28,580	4,931	2,325	157,018
2013	136	88		1,073	177	1,171	12,018	23,277	62,187	44,227			144,354
2014				519	341	2,269	23,228	21,019	119,067	43,329			209,772
2015				589	153	1,325	6,295	24,569	101,373	42,833			177,137
2016				471	4	1,359	8,818	6,325	67,132	34,654			118,763
2017			1,869	643	15	80	1,967	2,739	50,813	22,749	1,344	253	82,472
2018	176	10	**	178	0	459	4,872	3,247	37,714	19,676			66,332
2019				264	13	168	3,900	3,095	22,103	17,967			47,510
Total	1,371	1,023	38,601	120,479	42,470	87,192	778,833	1,469,075	4,220,596	1,963,172	75,555	17,645	8,816,012
10-Year Avg.				952	168	1,296	14,803	25,232	73,199	34,131			151,194

Plate 6 Ice Harbor Lock and Dam



ICE HARBOR DAM

FISH COUNTING SCHEDULE

1 January – 29 February	Video review of daily period covering 0400-2000 hours PST
1 March – 31 March	No counts
1 April – 31 October	Visual counting daily from 0400-2000 hours PST
1 November – 31 December	No counts

FISH LADDER OPERATING SCHEDULE

North Ladder

1 January – 12 February	Ladder in service
13 February – 28 February	Ladder dewatered for annual maintenance
1 March – 31 December	Ladder in service

South Ladder

1 January	Ladder in service
2 January – 11 February	Ladder dewatered for annual maintenance
12 February – 15 April	Ladder in service
16 April – 19 April	Ladder dewatered for diffuser valve #12 repair
20 April – 31 December	Ladder in service

FISHWAY ACTIVITIES

Water temperatures were recorded hourly, from 1 April to 31 December, from both fish ladder exit pools, the south fish ladder junction pool, and the first bend upstream of the north fish ladder collection channel.

The removable spillway weir (RSW) operated for fish passage from 3 April to 11 August. The RSW was closed before the end of the spill season (31 August) due to low river flows.

The Juvenile Fish Facility was operated for juvenile fish bypass and adult fallbacks from 25 March to 19 December. Juvenile fish were sampled from 1 April – 15 July, twice per week.

An adult lamprey entrance structure, similar to the McNary prototype, was installed at the south shore entrance #2 (SFE-2) during the winter maintenance period. The lamprey entrance was open from June 27 to October 2. Monitoring of lamprey passage and adult salmonid behavior at the structure occurred using Didson imaging sonars.

Unit 2 runner replacement was completed in May. In late September/early October, sensor fish were sent through the turbine to characterize the physical environment with the fish-friendly runner, and live fish were used for a direct injury study of the turbine.

TABLE 89

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER ICE HARBOR DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*	-2	0		60	21,151	7,820	1,709	2,552	16,522	3,233			53,045
STEELHEAD	130	52		813	43	43	1,497	1,155	13,981	14,110			31,824
SOCKEYE						58	228	32	2				320
COHO*	1							19	1,784	4,994			6,798
PINK													0
TOTAL	129	52		873	21,194	7,921	3,434	3,758	32,289	22,337			91,987
SHAD					721	348,272	176,199	1,876					527,068
LAMPREY					3	24	170	52	20	2			271
STURGEON						1	2	2	1				6
BULL TROUT													0

*Jacks included

TABLE 90

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

JANUARY 2019

DATE	CHINOOK ADULT			CHINOOK COHO		COHO		TOTAL unclipped				DISCH KCFS	SPILL KCFS	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD			LAMPREY	STURGEON	SECCHI	DEG F
Jan 1	-2				0			11						20.0	0.0	11.0	41.0
Jan 2	0				0			10						25.6	0.0	11.3	41.0
Jan 3	0				0			4						25.2	0.0	11.3	41.0
Jan 4	0				1			5						24.3	0.0	11.3	41.0
Jan 5	0				0			11						21.0	0.0	11.3	41.0
Jan 6	0				0			6						18.9	0.0	11.3	41.0
Jan 7	0				0			12						24.3	0.0	11.3	41.0
Jan 8	0				0			5						23.8	0.0	11.1	41.0
Jan 9	0				0			6						23.9	0.1	11.1	41.0
Jan 10	0				0			6						20.8	0.0	11.1	40.0
Jan 11	0				0			4						23.1	0.0	11.1	40.0
Jan 12	0				0			4						19.1	0.0	11.1	40.0
Jan 13	0				0			1						17.0	0.0	11.1	40.0
Jan 14	0				0			1						17.6	0.0	11.2	40.0
Jan 15	0				0			4						17.8	0.0	11.2	40.0
Jan 16	0				0			3						19.1	0.0	11.3	40.0
Jan 17	0				0			1						19.9	0.0	11.3	40.0
Jan 18	0				0			3						20.9	0.0	11.3	40.0
Jan 19	0				0			0						21.5	0.0	11.3	40.0
Jan 20	0				0			0						19.6	0.0	11.3	40.0
Jan 21	0				0			1						21.7	0.0	11.3	40.0
Jan 22	0				0			1						23.7	0.0	11.3	40.0
Jan 23	0				0			4						27.6	0.0	11.3	40.0
Jan 24	0				0			4						33.3	0.0	11.4	40.0
Jan 25	0				0			6						27.3	0.0	11.4	40.0
Jan 26	0				0			4						23.2	0.0	11.4	40.0
Jan 27	0				0			3						22.7	0.0	11.4	40.0
Jan 28	0				0			1						23.2	0.0	11.4	40.0
Jan 29	0				0			2						28.8	0.0	11.4	40.0
Jan 30	0				0			5						23.1	0.0	11.4	40.0
Jan 31	0				0			2						19.8	0.0	11.4	40.0
TOTAL	-2				1			130						22.5	0.0	11.3	40.3
AVG.	0				0			4									

Note: January counts were from video tape. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST. Official Spring Chinook run started April 1. January Chinook counts were not added to "Run Year" totals.

TABLE 91

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

FEBRUARY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD								
Feb 1								4	0					23.3	0.0	11.3	40.0
Feb 2								8	3					22.7	0.0	10.3	40.0
Feb 3								4	1					26.2	0.0	10.3	40.0
Feb 4								1	0					34.1	0.0	10.3	39.0
Feb 5								2	1					35.7	0.0	10.3	38.0
Feb 6								3	1					27.7	0.0	10.3	38.0
Feb 7								1	1					24.4	0.0	10.3	38.0
Feb 8								3	1					34.0	0.0	10.3	38.0
Feb 9								0	0					23.4	0.0	10.3	38.0
Feb 10								1	1					22.2	0.0	10.3	37.0
Feb 11								0	0					26.9	0.0	10.3	37.0
Feb 12								-1	0					30.4	0.0	10.3	37.0
Feb 13								0	0					27.3	0.0	10.3	37.0
Feb 14								0	0					26.8	0.0	11.3	37.0
Feb 15								2	1					29.7	0.0	11.3	37.0
Feb 16								0	0					27.4	0.0	11.3	37.0
Feb 17								3	1					25.2	0.0	11.3	37.0
Feb 18								0	0					31.4	0.0	11.3	37.0
Feb 19								1	0					26.3	0.0	11.3	37.0
Feb 20								0	0					30.0	0.0	*	*
Feb 21								1	0					31.0	0.0	11.0	37.0
Feb 22								0	0					31.1	0.0	11.0	37.0
Feb 23								4	2					24.1	0.0	11.0	37.0
Feb 24								2	1					25.1	0.0	11.0	37.0
Feb 25								3	2					28.0	0.0	11.0	37.0
Feb 26								3	1					29.4	0.0	11.0	37.0
Feb 27								3	0					29.6	0.0	11.0	37.0
Feb 28								4	1					36.0	0.0	11.0	37.0

TOTAL								52	18					28.2	0.0	10.8	37.6
AVG.								2	1								

Note: February counts were from video tape. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.
February 13 partial count day, north ladder dewatered at 1500.
Official Spring Chinook run started April 1. February fish counts are not added to "Run Year" totals.

*data unavailable

TABLE 92
DISCHARGE AND WATER QUALITY DATA
ICE HARBOR PROJECT 2019
MARCH

DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Mar 1	34.3	0.0	11.0	37.0
Mar 2	34.0	0.0	11.0	37.0
Mar 3	35.3	0.0	11.0	37.0
Mar 4	38.1	0.0	11.0	37.0
Mar 5	37.7	0.0	11.0	37.0
Mar 6	35.5	0.0	11.0	37.0
Mar 7	38.8	0.0	11.0	37.0
Mar 8	34.2	0.0	11.0	35.0
Mar 9	39.2	0.0	11.0	35.0
Mar 10	28.8	0.0	11.0	36.0
Mar 11	39.7	0.0	11.0	36.0
Mar 12	31.3	0.0	11.0	36.0
Mar 13	35.6	0.0	11.0	36.0
Mar 14	42.0	0.0	11.0	36.0
Mar 15	40.6	0.0	11.0	37.0
Mar 16	32.4	0.0	11.0	37.0
Mar 17	46.5	0.0	11.0	38.0
Mar 18	42.3	0.0	11.0	38.0
Mar 19	48.1	7.5	11.0	38.0
Mar 20	49.3	14.5	11.0	39.0
Mar 21	43.4	7.8	6.1	40.0
Mar 22	61.0	8.6	6.1	40.0
Mar 23	71.2	18.8	6.1	41.0
Mar 24	66.1	12.9	6.1	41.0
Mar 25	80.1	30.0	6.1	41.0
Mar 26	72.7	24.3	6.1	42.0
Mar 27	86.0	34.7	4.7	43.0
Mar 28	85.7	30.7	3.0	43.0
Mar 29	83.3	28.4	3.2	43.0
Mar 30	79.4	24.9	3.4	43.0
Mar 31	79.7	25.2	3.4	45.0
AVG.	50.7	8.6	8.8	38.6

TABLE 93
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD							SECCHI	DEG F
Apr 1	0			0				46	15					75.9	22.3	3.6	45.0
Apr 2	0			0				50	15					68.8	16.2	3.6	46.0
Apr 3	0			0				69	14					61.9	40.3	3.6	46.0
Apr 4	0			0				69	6					70.7	47.9	3.6	47.0
Apr 5	0			0				38	3					76.7	52.5	3.2	47.0
Apr 6	1			0				60	4					86.1	61.7	3.1	47.0
Apr 7	0			0				55	6					87.9	63.0	3.1	47.0
Apr 8	0			0				70	8					121.1	86.0	3.1	47.0
Apr 9	0			0				87	13					158.6	105.0	3.1	47.0
Apr 10	0			0				52	2					207.6	153.3	3.1	48.0
Apr 11	0			0				26	1					173.1	120.0	3.1	48.0
Apr 12	0			0				18	1					147.1	94.2	2.0	48.0
Apr 13	0			0				6	0					129.7	84.8	2.0	48.0
Apr 14	0			0				1	0					114.6	80.3	1.2	48.0
Apr 15	0			0				2	0					120.8	83.1	1.2	48.0
Apr 16	0			0				0	0					113.9	79.8	1.0	48.0
Apr 17	0			0				1	0					110.2	80.9	0.6	48.0
Apr 18	0			0				7	0					108.9	80.4	0.5	47.0
Apr 19	0			0				19	0					111.4	79.8	1.2	48.0
Apr 20	0			0				19	1					122.4	84.9	1.2	49.0
Apr 21	1			0				13	1					156.8	102.9	1.6	50.0
Apr 22	0			0				12	1					164.4	110.5	1.7	50.0
Apr 23	0			0				21	0					161.3	107.4	1.6	50.0
Apr 24	0			0				39	2					151.9	98.3	1.6	50.0
Apr 25	3			1				5	-1					167.0	113.2	2.8	52.0
Apr 26	1			2				6	0					151.1	97.7	2.8	52.0
Apr 27	5			0				5	0					158.9	105.4	1.6	52.0
Apr 28	9			0				2	0					138.2	87.7	2.0	52.0
Apr 29	13			0				7	0					139.5	88.5	2.4	52.0
Apr 30	24			0				8	0					123.6	80.2	2.4	52.0
TOTAL	57			3				813	92								
AVG.	2			0				27	3					126.0	83.6	2.3	48.6

Note: Visual counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST.

South shore ladder was counted by direct observation while the north shore ladder was counted using closed circuit TV.
 Official Spring Chinook run started April 1.

TABLE 94
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER					FALL	STEELHEAD							unclipped STEELHEAD	SECCHI
May 1	26		6				5	0		0	0		115.8	74.6	2.4	52.0
May 2	37		5				3	1		0	0		111.4	73.7	3.0	53.0
May 3	43		3				5	4		0	0		105.6	77.0	3.0	53.0
May 4	63		4				0	0		0	0		105.7	78.7	3.0	53.0
May 5	76		3				4	1		0	0		105.0	78.6	3.0	52.0
May 6	80		2				6	4		0	0		112.8	81.1	3.0	52.0
May 7	146		3				1	0		0	0		104.7	76.4	4.5	53.0
May 8	405		17				1	1		0	0		108.0	77.7	4.8	53.0
May 9	896		53				0	0		0	0		114.3	78.1	4.8	53.0
May 10	862		13				8	0		0	0		106.9	76.8	4.8	53.0
May 11	968		21				1	0		0	0		112.7	80.7	4.8	54.0
May 12	1,081		31				0	0		0	0		118.2	82.8	4.8	54.0
May 13	1,961		91				2	2		1	2		121.7	83.3	4.8	54.0
May 14	1,336		101				1	1		0	0		125.7	82.6	4.8	54.0
May 15	1,017		97				2	0		0	0		138.4	93.6	4.4	56.0
May 16	847		99				2	1		1	0		142.1	103.8	4.4	56.0
May 17	1,059		121				0	0		0	0		141.4	100.5	4.4	56.0
May 18	649		109				0	0		0	1		162.4	121.0	4.0	56.0
May 19	646		112				0	0		0	0		146.7	105.4	4.0	56.0
May 20	835		185				0	0		0	0		127.4	89.6	4.0	57.0
May 21	632		166				1	1		2	0		127.0	88.8	4.1	57.0
May 22	332		91				0	0		4	0		121.3	85.6	4.6	57.0
May 23	510		122				1	0		2	0		125.4	82.3	4.6	57.0
May 24	284		89				0	0		0	0		115.7	84.8	4.6	58.0
May 25	805		208				0	0		12	0		119.6	81.7	4.6	58.0
May 26	584		154				0	0		2	0		116.2	79.9	4.6	58.0
May 27	477		205				0	0		47	0		126.8	83.7	4.8	58.0
May 28	441		205				0	0		60	0		126.3	84.5	6.0	58.0
May 29	426		192				0	0		399	0		124.0	87.0	6.1	58.0
May 30	439		124				0	0		110	0		131.9	88.1	6.1	59.0
May 31	434		122				0	0		81	0		135.8	87.3	6.1	57.0
TOTAL	18,397		2,754				43	16		721	3					
AVG.	593		89				1	1		23	0		122.5	85.5	4.4	55.3
RUN YEAR		CHINOOK ADULT	CHINOOK JACK				STEEL HEAD	unclipped STEEL HEAD		SHAD	LAMPREY					
TOTALS TO DATE		18,454	2,757				856	108		721	3					
SPRING																

TABLE 95
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL			PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD	SECCHI							DEG F	
Jun 1	303			65			0	0	0		380	-1	0	145.0	93.8	6.5	57.0	
Jun 2	329			96			0	0	0		302	0	0	150.8	96.6	6.5	58.0	
Jun 3	348			85			0	0	0		953	2	0	152.1	97.0	6.5	58.0	
Jun 4	316			85			0	0	0		1,299	0	0	149.6	96.1	6.5	58.0	
Jun 5	259			69			0	0	0		1,442	0	0	150.7	96.1	6.7	58.0	
Jun 6	288			79			0	0	0		1,216	0	0	140.1	87.2	6.7	58.0	
Jun 7	282			116			0	0	116		758	0	0	135.5	84.2	6.7	58.0	
Jun 8	246			69			0	0	0		1,810	0	0	125.1	79.3	6.7	58.0	
Jun 9	204			93			0	0	0		9,377	0	0	105.4	71.7	6.7	59.0	
Jun 10	336			55			0	0	0		5,923	0	0	96.8	70.2	6.7	59.0	
Jun 11	231			50			0	0	0		7,501	0	0	86.1	60.6	6.0	59.0	
Jun 12		295		68			0	0	0		12,139	0	0	82.4	58.0	6.0	60.0	
Jun 13		271		67			0	0	0		7,572	0	0	86.5	62.1	6.0	60.0	
Jun 14		206		40			1	0	0		12,821	0	0	87.5	63.0	6.1	61.0	
Jun 15		222		91			2	0	0		15,302	1	0	88.6	64.2	5.6	61.0	
Jun 16		169		72			0	2	1		13,656	1	0	85.4	60.8	5.5	62.0	
Jun 17		175		67			0	1	1		11,561	0	0	78.2	54.0	5.3	62.0	
Jun 18		205		76			3	0	0		11,385	0	0	82.4	59.7	5.3	62.0	
Jun 19		125		63			6	1	0		18,176	0	0	67.0	44.6	5.2	62.0	
Jun 20		165		81			5	0	0		14,855	0	0	68.7	46.3	5.2	62.0	
Jun 21		178		53			2	1	1		11,552	0	0	63.6	19.0	5.2	62.0	
Jun 22		160		43			5	1	1		20,212	1	1	71.4	21.4	6.0	63.0	
Jun 23		115		32			5	6	4		30,625	4	0	59.6	17.9	6.0	63.0	
Jun 24		82		41			2	4	2		29,221	1	0	58.8	17.7	6.0	63.0	
Jun 25		85		75			2	3	2		21,046	1	0	52.2	15.6	6.0	63.0	
Jun 26		61		36			3	5	5		15,172	0	0	54.0	16.2	6.0	64.0	
Jun 27		75		45			4	5	4		11,519	2	0	54.3	16.4	6.0	64.0	
Jun 28		52		37			4	6	6		14,560	5	0	46.9	14.1	5.0	64.0	
Jun 29		73		41			4	3	3		21,870	4	0	44.8	13.4	6.0	64.0	
Jun 30		35		39			10	5	2		24,067	3	0	44.6	13.4	6.0	64.0	
TOTAL	3,142	2,749		1,929			58	43	32		348,272	24	1					

AVG.	286	145		64			2	1	1		11,609	1	0	90.5	53.7	6.0	60.9
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RIIN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	21,596	3,619
SUMMER	2,749	1,067
TOTAL	24,345	4,686

SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	STURGEON
58	899	140	348,993	27	1

TABLE 96

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD						PINK	KCFES	KCFES
Jul 1		47		27			4	5	4		12,878	3	0	37.9	11.2	6.2	65.0
Jul 2		92		38			13	6	4		12,635	4	1	42.8	12.8	6.4	66.0
Jul 3		67		35			9	11	10		13,522	3	0	39.2	11.7	6.4	66.0
Jul 4		56		9			14	12	8		12,296	6	0	41.1	12.3	6.6	66.0
Jul 5		83		36			7	9	8		10,508	4	1	42.2	12.6	6.6	66.0
Jul 6		41		35			5	19	14		11,834	7	0	45.5	13.6	6.6	66.0
Jul 7		56		25			7	28	17		9,049	3	0	43.1	12.9	6.6	66.0
Jul 8		56		23			9	39	31		10,995	7	0	45.1	13.5	6.6	66.0
Jul 9		37		36			11	32	22		14,108	9	0	42.4	12.7	6.6	66.0
Jul 10		51		54			11	50	33		12,256	18	0	40.9	12.2	6.6	66.0
Jul 11		51		30			14	41	28		15,749	9	0	47.1	14.1	6.4	67.0
Jul 12		32		21			13	47	30		6,869	8	0	42.6	12.6	6.4	67.0
Jul 13		36		18			13	61	36		5,963	8	0	42.7	12.8	6.4	67.0
Jul 14		38		16			9	64	48		7,641	4	0	43.6	13.0	6.4	67.0
Jul 15		32		11			4	79	52		1,927	6	0	36.0	10.8	6.6	67.0
Jul 16		46		19			8	72	48		1,784	3	0	36.0	10.8	6.6	68.0
Jul 17		42		4			4	49	20		3,814	8	0	40.1	12.0	6.6	68.0
Jul 18		34		6			16	94	62		2,794	3	0	39.0	11.7	6.7	68.0
Jul 19		47		3			8	68	48		1,678	5	0	38.9	11.7	6.9	68.0
Jul 20		16		5			6	49	33		2,487	3	0	38.7	11.6	6.7	68.0
Jul 21		23		6			8	78	51		702	4	0	34.8	10.4	6.8	68.0
Jul 22		20		1			7	60	44		404	2	0	37.9	11.2	6.8	68.0
Jul 23		23		4			3	58	34		587	0	0	38.2	11.4	7.0	69.0
Jul 24		17		2			5	64	40		347	7	0	36.2	11.1	7.0	69.0
Jul 25		11		1			4	74	43		1,266	6	0	35.6	11.4	8.0	69.0
Jul 26		18		3			0	68	45		201	3	0	31.6	10.1	8.1	69.0
Jul 27		25		2			4	64	38		212	6	0	35.1	10.9	8.1	69.0
Jul 28		28		2			1	41	26		108	4	0	32.6	10.0	8.1	69.0
Jul 29		32		9			3	57	36		121	2	0	31.4	9.7	8.1	69.0
Jul 30		22		5			5	54	41		167	11	0	32.3	10.0	8.1	69.0
Jul 31		32		12			3	44	29		1,297	4	0	32.6	10.0	*	*
TOTAL		1,211		498			228	1,497	983		176,199	170	2				

AVG.	39	16	7	48	32	5,684	5	0	38.8	11.7	6.9	67.4
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*data unavailable

RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	STURGEON
	SPRING	21,596	3,619	286	2,396	1,123	525,192	197
SUMMER	3,960	1,565						
TOTAL	25,556	5,184						

TABLE 97
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL			PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD							SECCHI	DEG F
Aug 1		25		3	0	0	4	64	39		190	0	0	27.9	9.3	8.1	69.0
Aug 2		39		0	0	0	3	39	20		106	3	0	31.8	10.1	8.1	69.0
Aug 3		32		2	0	0	1	43	21		156	2	0	34.4	10.4	8.1	69.0
Aug 4		23		5	0	0	0	48	32		106	2	0	35.1	10.5	8.1	70.0
Aug 5		17		5	0	0	2	41	27		64	2	0	33.1	9.9	8.1	70.0
Aug 6		26		0	0	0	3	33	17		59	3	0	34.4	10.5	7.8	70.0
Aug 7		24		2	0	0	5	40	29		57	1	0	31.6	10.0	7.8	70.0
Aug 8		27		5	0	0	2	34	18		145	1	0	30.8	9.8	7.9	70.0
Aug 9		31		2	0	0	3	32	21		242	0	1	29.2	9.5	7.8	70.0
Aug 10		16		7	0	0	-1	21	12		143	5	0	27.6	9.1	7.7	70.0
Aug 11		23		10	0	0	4	36	27		47	1	0	25.1	8.7	6.7	70.0
Aug 12			24	2	0	0	2	42	22		125	0	0	29.3	8.7	7.0	70.0
Aug 13			24	2	0	0	1	23	14		156	1	0	27.3	8.1	7.0	70.0
Aug 14			21	5	0	0	1	28	22		70	1	0	30.5	9.1	8.8	70.0
Aug 15			33	5	0	0	0	24	13		44	3	0	27.9	8.2	8.8	70.0
Aug 16			25	5	0	0	0	23	14		40	1	0	27.5	8.2	9.5	70.0
Aug 17			67	2	0	0	0	44	24		21	3	0	26.0	7.8	9.5	70.0
Aug 18			45	3	1	0	0	39	20		27	1	0	23.6	7.0	9.5	70.0
Aug 19			43	1	0	1	1	12	7		10	0	0	25.3	7.5	9.5	70.0
Aug 20			108	6	1	0	0	16	5		8	1	0	28.3	8.5	9.7	71.0
Aug 21			72	4	0	0	0	25	14		19	1	0	30.4	9.1	9.7	71.0
Aug 22			101	11	1	0	0	38	24		11	3	0	30.0	9.1	9.7	70.0
Aug 23			79	16	0	0	0	32	19		10	5	0	26.4	8.0	8.2	70.0
Aug 24			118	12	1	3	0	41	26		0	3	0	23.5	7.0	8.2	70.0
Aug 25			92	7	0	0	0	40	17		0	0	0	25.8	7.8	8.2	70.0
Aug 26			132	18	0	0	0	33	17		0	7	0	27.2	8.2	8.2	71.0
Aug 27			166	12	0	0	0	43	24		3	1	0	28.0	8.4	8.6	71.0
Aug 28			297	44	0	0	0	48	26		1	0	1	27.7	8.4	8.6	71.0
Aug 29			168	31	4	2	0	46	20		3	0	0	25.5	7.6	8.6	71.0
Aug 30			170	43	0	2	1	71	34		8	0	0	22.5	6.7	7.1	71.0
Aug 31			176	38	-2	5	0	56	29		5	1	0	23.7	7.1	7.1	70.0
TOTAL		283	1,961	308	6	13	32	1,155	654		1,876	52	2				
AVG.		26	98	10	0	0	1	37	21		61	2	0	28.3	8.7	8.3	70.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	21,596	3,619
SUMMER	4,243	1,606
FALL	1,961	267
TOTAL	27,800	5,492

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
6	13	318	3,551	1,777

SHAD	LAMPREY	STURGEON
527,068	249	5

TABLE 98
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		PINK	SHAD	LAMPREY	STURGEON	DISCH KCES	SPILL KCES	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD							unclipped STEELHEAD	SECCHI
Sep 1			212	67	2	4	0	86	37		1	0	18.6	0.0	7.1	70.0
Sep 2			378	107	0	2	0	132	63		0	0	19.8	0.0	7.1	70.0
Sep 3			482	75	0	0	0	132	47		3	0	19.8	0.0	7.1	70.0
Sep 4			388	89	0	1	0	177	79		1	0	25.5	0.0	7.1	70.0
Sep 5			286	58	0	0	0	174	67		1	0	23.0	0.0	7.4	70.0
Sep 6			311	97	0	0	0	183	78		0	0	23.9	0.6	7.4	70.0
Sep 7			271	80	0	0	0	170	55		2	0	25.5	0.0	7.4	70.0
Sep 8			348	115	0	0	0	257	92		2	0	23.0	0.0	7.4	70.0
Sep 9			331	102	0	0	0	178	68		0	0	19.5	0.0	8.2	70.0
Sep 10			195	80	2	0	0	92	37		0	0	24.3	0.0	8.2	70.0
Sep 11			285	135	1	0	0	114	49		0	0	22.4	0.0	8.2	70.0
Sep 12			193	94	1	0	0	103	26		1	0	30.7	0.0	8.2	70.0
Sep 13			385	116	0	1	0	211	76		0	0	25.0	0.0	7.4	70.0
Sep 14			572	106	0	0	0	347	131		2	0	25.0	0.0	7.4	69.0
Sep 15			374	134	0	1	0	308	88		1	0	25.9	0.0	7.4	69.0
Sep 16			587	163	10	5	0	416	121		0	0	22.8	0.0	7.4	69.0
Sep 17			630	137	10	3	1	338	121		0	0	23.3	0.0	7.6	69.0
Sep 18			777	174	22	4	0	379	122		0	0	28.7	0.0	6.4	68.0
Sep 19			659	174	18	38	0	360	111		0	0	27.2	0.0	6.4	68.0
Sep 20			677	233	31	3	0	550	190		0	0	27.7	0.0	6.4	67.0
Sep 21			719	207	32	0	1	626	221		1	0	25.4	0.0	6.4	67.0
Sep 22			616	203	32	3	0	686	199		2	0	26.1	0.0	6.4	67.0
Sep 23			732	208	75	3	0	1,158	416		2	0	26.5	0.0	6.4	67.0
Sep 24			674	130	205	26	0	1,824	627		0	1	29.4	0.1	6.4	67.0
Sep 25			571	141	274	22	0	1,631	498		1	0	27.9	0.0	6.4	67.0
Sep 26			356	106	251	5	0	935	308		-1	0	21.4	0.0	7.6	67.0
Sep 27			227	76	140	6	0	583	153		1	0	22.0	0.0	7.6	67.0
Sep 28			226	65	205	8	0	603	152		0	0	25.4	0.0	7.6	66.0
Sep 29			197	66	116	4	0	422	143		0	0	24.1	0.0	7.6	66.0
Sep 30			239	86	208	10	0	806	191		0	0	29.3	0.0	7.6	64.0
TOTAL			12,898	3,624	1,635	149	2	13,981	4,566		20	1				

AVG.	430	121	55	5	0	466	152				1	0	24.6	0.0	7.2	68.5
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	21,596	3,619
SUMMER	4,243	1,606
FALL	14,859	3,891
TOTAL	40,698	9,116

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
1,641	162	320	17,532	6,343

SHAD	LAMPREY	STURGEON
527,068	269	6

TABLE 99
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS													OCTOBER 2019				
DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL		unclipped	PINK	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD									STEELHEAD
Oct 1			302	101	192	14		713	238		1	0	24.6	0.0	7.6	64.0	
Oct 2			228	110	149	7		676	210		1	0	28.1	0.0	7.6	63.0	
Oct 3			211	65	123	25		614	201		0	0	20.6	0.0	7.6	63.0	
Oct 4			189	60	257	14		713	221		0	0	20.4	0.0	7.6	63.0	
Oct 5			215	52	268	11		664	209		0	0	17.8	0.0	8.2	63.0	
Oct 6			121	34	300	20		605	211		0	0	25.1	0.0	7.8	62.0	
Oct 7			148	23	207	12		680	215		0	0	29.3	0.0	7.8	62.0	
Oct 8			122	35	237	3		739	199		0	0	17.1	0.0	7.9	62.0	
Oct 9			62	16	147	11		378	123		0	0	28.5	0.0	7.9	61.0	
Oct 10			55	24	192	9		462	148		0	0	27.3	0.0	7.9	61.0	
Oct 11			83	65	220	10		688	218		0	0	29.1	0.0	7.9	61.0	
Oct 12			83	35	189	2		647	239		0	0	23.3	0.0	8.2	60.0	
Oct 13			50	42	157	5		420	126		0	0	19.4	0.0	9.0	60.0	
Oct 14			52	36	198	8		516	178		0	0	21.7	0.0	9.0	60.0	
Oct 15			52	14	113	2		191	57		0	0	18.8	0.0	9.0	60.0	
Oct 16			54	26	155	2		458	164		0	0	20.7	0.0	9.1	60.0	
Oct 17			50	19	193	4		623	227		0	0	20.3	0.0	9.1	59.0	
Oct 18			23	8	135	6		332	110		0	0	14.5	0.0	9.1	59.0	
Oct 19			23	9	109	4		344	114		0	0	12.7	0.0	9.1	58.0	
Oct 20			33	12	95	6		433	138		0	0	14.6	0.0	9.1	58.0	
Oct 21			26	9	73	5		321	113		0	0	21.8	0.0	9.1	58.0	
Oct 22			48	11	88	2		482	192		0	0	16.7	0.0	9.1	57.0	
Oct 23			40	7	178	3		335	118		0	0	25.6	0.0	9.5	57.0	
Oct 24			23	12	148	2		412	134		0	0	20.8	0.0	9.3	*	
Oct 25			8	1	179	4		270	104		0	0	18.0	0.0	9.2	57.0	
Oct 26			17	7	174	4		369	167		0	0	20.4	0.0	9.2	57.0	
Oct 27			18	2	77	2		187	94		0	0	17.8	0.0	9.2	57.0	
Oct 28			16	3	119	4		360	171		0	-1	20.2	0.0	9.2	57.0	
Oct 29			9	2	42	6		158	59		0	0	20.5	0.0	9.0	56.0	
Oct 30			14	7	35	1		111	32		0	0	19.9	0.0	9.0	56.0	
Oct 31			11	0	35	2		209	81		0	0	26.4	0.0	9.0	56.0	
TOTAL			2,386	847	4,784	210		14,110	4,811		2	-1					
AVG.			77	27	154	7		455	155		0	0	21.4	0.0	8.6	59.6	
RUN YEAR	CHINOOK	CHINOOK	COHO		COHO		unclipped		PINK	SHAD	LAMPREY	STURGEON	*data unavailable				
TOTALS TO DATE	ADULT	JACK	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD	LAMPREY	STURGEON				
SPRING	21,596	3,619	6,425	372	320	31,642	11,154	0	527,068	271	5						
SUMMER	4,243	1,606															
FALL	17,245	4,738															
TOTAL	43,084	9,963															

Note: Visual counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between the hours of 0400-2000 PST. South shore ladder was counted by direct observation while the north shore ladder was counted using closed circuit TV.

TABLE 100

DISCHARGE AND WATER QUALITY DATA

ICE HARBOR PROJECT 2019

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Nov 1	16.6	0.0	9.0	56.0	Dec 1	12.3	0.0	9.6	45.0
Nov 2	15.1	0.0	7.6	53.0	Dec 2	20.3	0.0	9.6	45.0
Nov 3	17.5	0.0	7.6	53.0	Dec 3	19.2	0.0	9.6	45.0
Nov 4	22.5	0.0	7.6	53.0	Dec 4	20.6	0.0	9.6	44.0
Nov 5	16.0	0.0	7.9	52.0	Dec 5	18.0	0.0	9.6	44.0
Nov 6	16.9	0.0	7.9	52.0	Dec 6	19.5	0.0	9.6	44.0
Nov 7	18.9	0.0	7.9	51.0	Dec 7	16.5	0.0	10.0	44.0
Nov 8	18.4	0.0	7.9	51.0	Dec 8	9.7	0.0	10.0	44.0
Nov 9	14.6	0.0	7.9	51.0	Dec 9	22.5	0.0	10.0	44.0
Nov 10	19.4	0.0	7.9	51.0	Dec 10	22.4	0.0	10.0	44.0
Nov 11	16.4	0.0	7.9	51.0	Dec 11	20.7	0.0	10.0	44.0
Nov 12	20.8	0.0	7.9	50.0	Dec 12	16.9	0.0	10.0	44.0
Nov 13	23.1	0.0	7.9	50.0	Dec 13	18.4	0.0	10.0	44.0
Nov 14	19.6	0.0	7.9	50.0	Dec 14	25.2	0.0	10.0	44.0
Nov 15	15.9	0.0	7.9	50.0	Dec 15	25.7	0.0	10.0	44.0
Nov 16	11.0	0.0	7.9	50.0	Dec 16	27.3	0.0	10.0	44.0
Nov 17	16.9	0.0	7.9	50.0	Dec 17	36.1	0.0	10.0	43.0
Nov 18	24.9	0.0	7.9	50.0	Dec 18	30.1	0.0	10.0	43.0
Nov 19	17.0	0.0	7.9	50.0	Dec 19	11.8	0.0	10.0	43.0
Nov 20	24.6	0.0	9.3	49.0	Dec 20	12.0	0.0	10.0	42.0
Nov 21	27.8	0.0	9.3	49.0	Dec 21	21.6	0.0	10.0	42.0
Nov 22	18.4	0.0	9.3	49.0	Dec 22	17.7	0.0	10.0	42.0
Nov 23	19.4	0.0	9.3	49.0	Dec 23	20.3	0.0	10.0	42.0
Nov 24	13.9	0.0	9.3	49.0	Dec 24	26.8	0.0	10.0	42.0
Nov 25	23.7	0.0	9.3	49.0	Dec 25	22.2	0.0	10.0	42.0
Nov 26	20.7	0.0	9.3	49.0	Dec 26	23.8	0.0	10.0	42.0
Nov 27	16.8	0.0	9.3	49.0	Dec 27	24.5	0.0	10.0	42.0
Nov 28	18.9	0.0	9.3	49.0	Dec 28	22.8	0.0	10.0	42.0
Nov 29	22.6	0.0	9.6	48.0	Dec 29	20.6	0.0	10.0	42.0
Nov 30	21.0	0.0	9.6	47.0	Dec 30	20.4	0.0	10.0	42.0
					Dec 31	20.0	0.0	10.0	42.0
AVG.	19.0	0.0	8.4	50.3	AVG.	20.8	0.0	9.9	43.2

TABLE 101
 YEARLY TOTALS OF SALMONIDS COUNTED OVER
 ICE HARBOR DAM
 1962 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS*
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	149,110
1973	81,821	38,311	233	2,443	122,808
1974	32,444	12,528	204	1,334	46,510
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	88,475	216	465	109,415
1984	17,757	94,030	105	22	111,914
1985	47,981	128,481	24	10	176,496
1986	52,615	144,292	20	0	196,927
1987	47,477	74,491	13	0	121,981
1988	48,066	99,714	22	0	147,802
1989	27,234	151,101	4	0	178,339
1990	31,841	54,758	1	1	86,601
1991	23,175	123,762	9	1	146,947
1992	36,021	160,614	33	0	196,668
1993	34,991	73,107	17	0	108,115
1994	7,577	51,704	0	1	59,282
1995	7,990	92,026	5	4	100,025
1996	16,419	100,805	1	0	117,225
1997	55,412	103,830	15	128	159,385
1998	26,117	85,122	3	15	111,257
1999	23,331	84,163	8	144	107,646
2000	72,154	126,424	215	1,224	200,017
2001	215,697	283,694	38	1,595	501,024
2002	137,507	211,762	61	289	349,619
2003	143,329	191,675	37	1,431	336,472
2004	130,218	171,380	91	3,519	305,208
2005	58,361	156,920	18	1,621	216,920
2006	52,501	124,812	48	971	178,332
2007	69,106	157,620	55	2,147	228,928
2008	123,007	172,453	539	3,003	299,002
2009	180,349	328,105	867	5,436	514,757
2010	199,092	206,959	1,302	1,735	409,088
2011	177,586	198,805	1,141	6,727	384,259
2012	150,625	105,269	453	2,985	259,332
2013	152,174	116,162	895	2,530	271,761
2014	192,966	151,966	2,392	16,077	363,401
2015	219,408	128,521	1,052	1,492	350,473
2016	137,810	94,473	898	2,141	235,322
2017	78,076	61,961	392	5,737	146,166
2018	62,844	48,262	382	1,580	113,068
2019	53,045	31,824	320	6,798	91,987
Totals	4,349,281	5,893,294	21,539	113,104	10,377,218
10-Year Average	142,363	114,420	923	4,780	262,486

*Jacks included

Video daytime counts during extended count seasons are included.

MONTHLY COUNT OF CHINOOK SALMON
ICE HARBOR DAM
1962 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	SPRING	SUMMER	FALL
														1 APR- 11 JUN	12 JUN- 11 AUG	12 AUG- 31 OCT
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	12,839	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	12,602	4,922	2,735
1984				823	7,292	5,353	1,943	223	1,762	361			17,757	9,183	6,307	2,267
1985				12,245	18,334	6,885	1,294	546	5,414	3,263			47,981	33,527	5,290	9,164
1986			1	14,764	22,025	8,299	1,672	169	3,664	2,021			52,615	39,087	7,745	5,783
1987				11,141	18,821	6,550	2,437	329	6,089	2,110			47,477	32,083	6,982	8,412
1988				14,274	17,196	8,609	1,904	702	3,621	1,760			48,066	34,394	7,790	5,882
1989				3,307	11,724	4,946	1,143	776	3,917	1,421			27,234	17,029	4,215	5,990
1990				7,578	12,166	5,353	1,337	320	3,314	1,773			31,841	20,730	5,794	5,317
1991				1,639	7,953	5,367	2,101	155	4,053	1,907			23,175	11,288	5,861	6,026
1992				11,462	12,001	5,791	1,189	228	3,716	1,634			36,021	26,114	4,377	5,530
1993				5,776	15,879	8,705	1,405	338	2,087	801			34,991	24,935	6,919	3,137
1994				717	2,268	1,183	289	170	1,693	1,257			7,577	3,472	1,003	3,102
1995				256	1,253	928	315	387	2,920	1,931			7,990	1,873	915	5,202
1996				97	6,254	3,954	1,367	792	2,983	928	44	0	16,419	7,671	4,086	4,662
1997				3,442	30,332	14,678	2,224	411	2,502	1,680	143	0	55,412	41,473	9,318	4,621
1998				3,850	7,285	6,001	1,165	421	4,324	3,006	64	1	26,117	12,564	5,777	7,776
1999				260	5,717	5,659	1,461	917	6,283	2,943	89	2	23,331	8,008	5,211	10,112
2000				13,749	29,916	9,877	2,076	1,928	9,763	4,738	105	2	72,154	48,278	7,420	16,456
2001				104,883	55,788	26,709	4,268	1,327	18,315	4,262	140	5	215,697	174,199	17,667	23,831
2002				5,016	71,511	33,555	5,750	2,752	15,874	2,946	100	3	137,507	87,033	29,044	21,327
2003			132	42,343	34,581	28,636	5,732	1,286	23,445	7,174			143,329	86,190	25,344	31,663
2004			5	36,168	37,934	19,580	4,094	908	26,998	4,531			130,218	81,752	16,185	32,276
2005				1,763	20,798	14,089	2,323	1,389	14,672	3,327			58,361	29,306	9,817	19,238
2006				29	21,660	11,042	2,438	1,534	11,976	3,822			52,501	26,309	9,085	17,107
2007			1	3,277	27,506	11,597	3,167	1,984	17,456	4,118			69,106	35,355	10,599	23,151
2008				4,447	45,174	34,258	5,381	3,461	26,145	4,141			123,007	60,899	28,657	33,451
2009				1,173	65,190	40,728	9,465	10,549	49,471	3,773			180,349	83,658	33,256	63,435
2010				32,517	66,010	34,208	6,921	5,381	45,279	8,776			199,092	107,235	33,086	58,771
2011				374	74,309	38,699	12,109	5,817	39,184	7,094			177,586	87,467	39,136	50,983
2012				488	63,407	22,704	3,337	4,531	51,132	5,026			150,625	74,862	15,663	60,100
2013			8	1,979	48,023	18,657	5,350	10,876	60,731	6,220	325	5	152,174	56,620	18,233	76,983
2014	0	0		5,641	75,061	23,863	8,276	4,760	67,206	8,159			192,966	91,726	21,907	79,333
2015				36,199	75,507	26,847	6,784	8,657	55,175	10,239			219,408	122,207	24,215	72,986
2016				2,708	60,972	19,249	3,930	7,881	38,408	4,662			137,810	72,513	15,518	49,779
2017				98	25,398	17,807	3,065	2,098	24,051	5,559			78,076	35,255	11,371	31,450
2018			5	81	26,169	13,430	1,288	2,985	14,816	3,332	698	40	62,844	34,792	6,368	20,941
2019	-2			60	21,151	7,820	1,709	2,552	16,522	3,233			53,045	25,215	5,849	21,983
TOTAL	-2	1	357	557,022	1,605,953	761,148	298,317	115,317	829,181	177,476	4,379	132	4,349,281	2,430,896	814,305	1,102,760
10-Year Average				8,015	53,601	22,328	5,277	5,554	41,250	6,230			142,363	70,789	19,135	52,331

*Jacks included
Video counts done during extended count seasons are included.

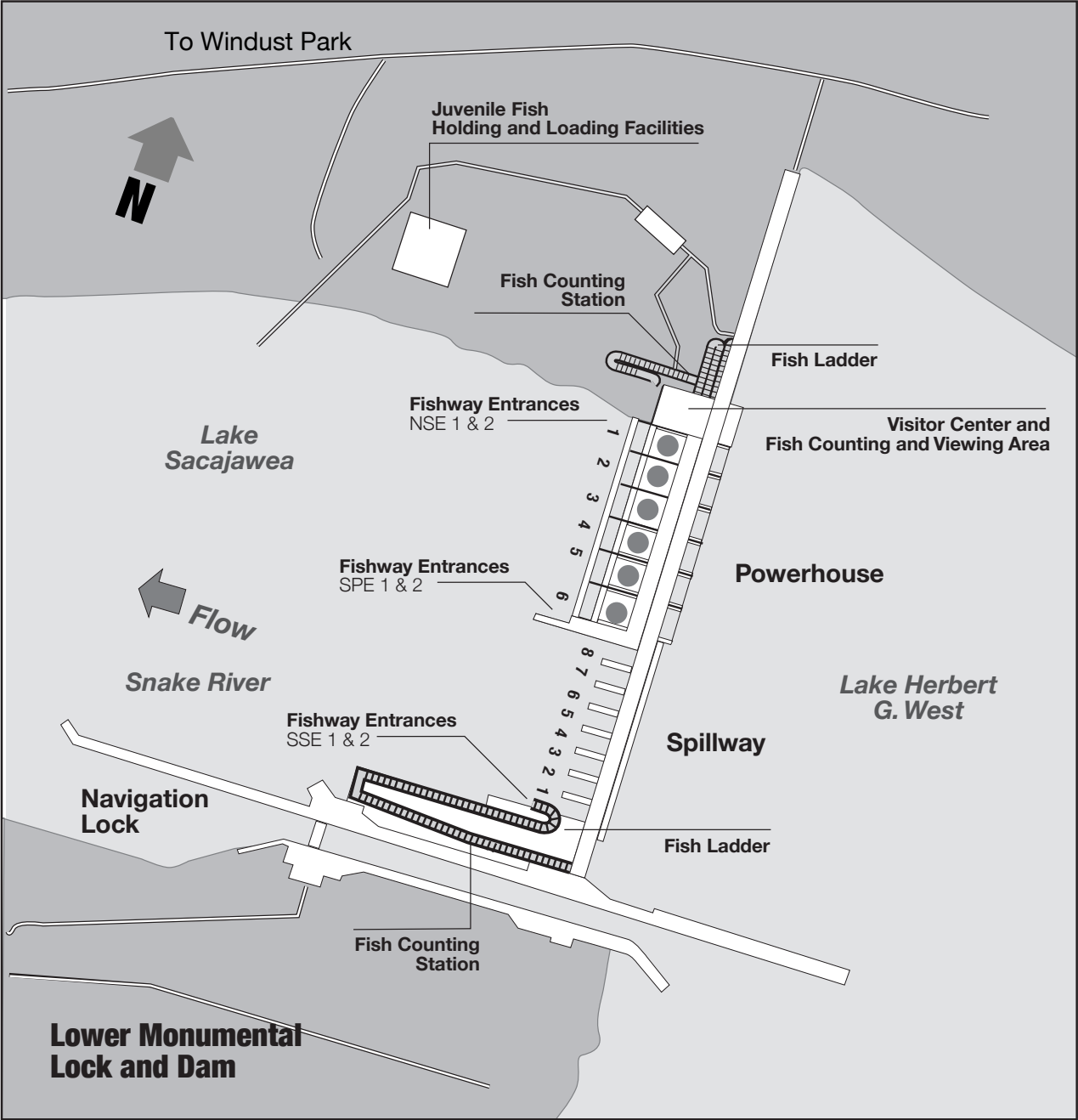
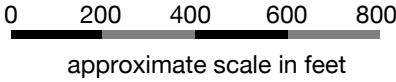
TABLE 103

**MONTHLY COUNT OF STEELHEAD
ICE HARBOR DAM
1962 -2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS
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			88,475
1984				2,218	488	49	4,103	4,554	50,638	31,980			94,030
1985			1,892	7,353	439	306	3,070	14,468	75,378	25,575			128,481
1986			2,561	1,642	187	174	6,600	8,679	63,598	60,851			144,292
1987				2,136	235	262	3,292	4,972	28,491	35,103			74,491
1988				4,865	580	671	3,251	5,955	46,838	37,554			99,714
1989				4,326	355	487	7,399	8,916	80,799	48,819			151,101
1990				2,793	148	252	2,631	2,000	18,728	28,206			54,758
1991				2,297	256	166	3,254	1,275	55,447	61,067			123,762
1992				1,433	232	742	4,190	8,137	89,281	56,599			160,614
1993				7,418	287	745	5,896	8,086	21,614	29,061			73,107
1994				3,040	126	394	3,295	3,162	16,702	24,985			51,704
1995				828	84	193	4,699	14,521	39,494	32,207			92,026
1996				743	81	229	3,427	15,391	48,722	28,657	2,303	1,252	100,805
1997				1,187	216	280	4,323	11,522	40,238	37,036	8,484	544	103,830
1998				1,719	74	259	3,226	3,114	25,408	43,844	5,400	2,078	85,122
1999				713	93	246	3,784	16,120	40,424	18,887	2,809	1,087	84,163
2000				805	91	870	7,202	11,684	65,713	33,899	5,510	650	126,424
2001				1,322	139	3,682	17,607	27,925	136,208	68,837	22,449	5,525	283,694
2002				4,507	134	943	12,760	30,321	87,357	66,151	8,770	819	211,762
2003			5,201	1,548	74	1,128	11,558	12,267	109,101	50,798			191,675
2004			2,483	1,690	118	1,467	9,875	6,593	111,826	37,328			171,380
2005			1,379	1,205	124	1,364	4,619	11,902	76,394	59,933			156,920
2006			1,181	2,628	78	490	2,797	7,265	67,556	42,817			124,812
2007			4,001	2,183	107	903	4,743	11,723	83,713	50,247			157,620
2008				2,942	241	702	14,056	20,872	97,545	36,095			172,453
2009				2,906	154	1,218	13,616	43,697	167,918	98,596			328,105
2010				2,773	289	1,431	29,670	25,794	106,546	40,456			206,959
2011				2,691	360	201	9,931	55,460	86,211	43,951			198,805
2012				2,111	266	816	2,875	5,820	64,613	28,768			105,269
2013			1,531	2,159	156	923	5,886	16,367	46,775	37,027	4,635	703	116,162
2014	211	287		911	366	1,278	10,030	10,929	87,114	40,840			151,966
2015				942	203	953	2,707	11,206	74,537	37,973			128,521
2016				1,254	112	547	4,699	4,033	49,702	34,126			94,473
2017				972	94	77	874	994	35,223	23,727			61,961
2018			634	587	81	263	2,007	895	24,184	16,381	2,789	441	48,262
2019	130	52		813	43	43	1,497	1,155	13,981	14,110			31,824
Totals	609	626	27,739	124,555	23,770	29,229	283,832	556,252	2,965,138	1,777,404	88,953	15,187	5,893,294
10-Year Average				1,521	197	653	7,018	13,265	58,889	31,736			114,420

Video daytime counts during extended count seasons are included.

Plate 7 Lower Monumental Lock and Dam



LOWER MONUMENTAL DAM 2019

FISH COUNTING SCHEDULE

1 Apr – 31 Oct	Visual counting daily 0400 – 2000 hours PST
1 Nov – 31 Dec	Video counting daily 0400 – 2000 hours PST

FISH LADDER OPERATING SCHEDULE

North Ladder

1 Jan – 3 Jan	Ladder in service.
3 Jan – 22 Jan	Ladder dewatered for annual maintenance.
22 Jan – 31 Dec	Ladder in service.

South Ladder

1 Jan – 23 Jan	Ladder in service.
23 Jan – 22 Feb	Ladder dewatered for annual maintenance.
22 Feb – 31 Dec	Ladder in service.

FISHWAY ACTIVITIES

Water temperatures were recorded hourly from north and south fish ladder exit pools, upper diffusers, and ladder entrance transition pools. Hourly readings were taken from June 1 to September 30. The purpose was to determine if summer spill had any effects on exit pool temperatures.

Monthly inspection of the north and south ladder exit pool zebra mussel monitoring stations occurred throughout the ladder operation period. No zebra mussels were discovered.

Fish Pumps #2 and #3 were out of service from 3 January through 28 Feb for annual maintenance. Fish pump #1 was out of service until 9 April for bushing repairs. All fish pumps operated 9 April until 31 December.

The juvenile fish facility was operated for juvenile fish transport/bypass and adult fallbacks from 7 March to 16 December.

The RSW at Lower Monumental was in service as per requirements of 2019 operating year. The RSW spill was closed at 0630 on August 8.

TABLE 104

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LOWER MONUMENTAL DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				33	21,052	8,464	1,679	2,236	17,241	3,637	156	-2	54,496
STEELHEAD				960	72	61	1,377	1,172	13,199	16,397	1,698	195	35,131
SOCKEYE						12	150	33					195
COHO*									1,478	5,906	257	27	7,668
PINK												1	1
TOTAL				993	21,124	8,537	3,206	3,441	31,918	25,940	2,111	221	97,491
LAMPREY						30	90	43	13	1	0	2	179
STURGEON													0
BULL TROUT													0

*Jacks included

TABLE 105

DISCHARGE AND WATER QUALITY DATA
LOWER MONUMENTAL PROJECT 2019

DATE	JANUARY			
	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Jan 1	24.7	0.0	5.0	42.0
Jan 2	20.5	0.0	5.0	42.0
Jan 3	24.2	0.0	5.0	41.0
Jan 4	22.3	0.0	5.0	41.0
Jan 5	23.1	0.0	5.0	41.0
Jan 6	21.5	0.0	5.0	41.0
Jan 7	19.9	0.0	5.0	41.0
Jan 8	23.3	0.0	5.0	40.0
Jan 9	23.6	0.0	5.0	40.0
Jan 10	23.3	0.0	5.0	40.0
Jan 11	23.6	0.0	5.0	40.0
Jan 12	19.7	0.0	5.0	40.0
Jan 13	20.3	0.0	5.0	40.0
Jan 14	16.4	0.0	5.0	40.0
Jan 15	20.0	0.0	5.0	40.0
Jan 16	20.1	0.0	5.0	40.0
Jan 17	20.3	0.0	5.0	40.0
Jan 18	19.8	0.0	5.0	40.0
Jan 19	20.6	0.0	5.0	40.0
Jan 20	19.6	0.0	5.0	40.0
Jan 21	20.2	0.0	5.0	40.0
Jan 22	22.2	0.0	5.0	40.0
Jan 23	23.8	0.0	5.0	40.0
Jan 24	25.2	0.0	5.0	40.0
Jan 25	31.6	0.0	5.0	40.0
Jan 26	25.4	0.0	5.0	40.0
Jan 27	22.2	0.0	5.0	40.0
Jan 28	22.4	0.0	5.0	40.0
Jan 29	25.4	0.0	5.0	40.0
Jan 30	27.1	0.0	5.0	40.0
Jan 31	22.0	0.0	5.0	40.0
AVG	22.4	0.0	5.0	40.3

DATE	FEBRUARY			
	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Feb 1	21.6	0.0	5.0	40.0
Feb 2	23.3	0.0	5.0	40.0
Feb 3	22.0	0.0	5.0	40.0
Feb 4	24.4	0.0	5.0	40.0
Feb 5	35.5	0.0	5.0	39.0
Feb 6	30.6	0.0	5.0	39.0
Feb 7	30.5	0.0	5.0	38.0
Feb 8	24.9	0.0	5.0	38.0
Feb 9	32.0	0.0	5.0	38.0
Feb 10	23.3	0.0	5.0	38.0
Feb 11	22.5	0.0	5.0	38.0
Feb 12	27.3	0.0	5.0	38.0
Feb 13	30.5	0.0	5.0	38.0
Feb 14	25.7	0.0	5.0	38.0
Feb 15	27.8	0.0	5.0	38.0
Feb 16	27.1	0.0	5.0	38.0
Feb 17	30.2	0.0	5.0	37.0
Feb 18	25.8	0.0	5.0	37.0
Feb 19	29.8	0.0	5.0	37.0
Feb 20	27.6	0.0	5.0	37.0
Feb 21	27.8	0.0	5.0	37.0
Feb 22	30.3	0.0	5.0	37.0
Feb 23	29.8	0.0	5.0	37.0
Feb 24	24.5	0.0	5.0	37.0
Feb 25	28.1	0.0	5.0	37.0
Feb 26	26.7	0.0	5.0	37.0
Feb 27	28.5	0.0	5.0	37.0
Feb 28	30.6	0.0	5.0	36.0
AVG	27.5	0.0	5.0	37.9

DATE	MARCH			
	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Mar 1	33.9	0.0	5.0	36.0
Mar 2	34.5	0.0	5.0	36.0
Mar 3	33.9	0.0	5.0	36.0
Mar 4	33.8	0.0	5.0	36.0
Mar 5	36.3	0.0	5.0	36.0
Mar 6	38.9	0.0	5.0	36.0
Mar 7	37.9	0.0	5.0	36.0
Mar 8	36.9	0.0	5.0	36.0
Mar 9	33.7	0.0	5.0	36.0
Mar 10	39.8	0.0	5.0	36.0
Mar 11	26.7	0.0	5.0	36.0
Mar 12	40.6	0.0	5.0	36.0
Mar 13	34.0	0.0	5.0	36.0
Mar 14	33.6	0.0	5.0	36.0
Mar 15	39.5	0.0	5.0	37.0
Mar 16	43.0	0.0	5.0	37.0
Mar 17	33.6	0.0	5.0	38.0
Mar 18	45.0	0.0	5.0	38.0
Mar 19	39.0	0.0	5.0	38.0
Mar 20	43.7	0.0	5.0	38.0
Mar 21	47.5	0.0	5.0	39.0
Mar 22	51.2	0.0	5.0	40.0
Mar 23	66.2	0.0	5.0	41.0
Mar 24	67.7	0.0	5.0	41.0
Mar 25	65.0	0.0	5.0	42.0
Mar 26	78.0	0.0	5.0	42.0
Mar 27	68.2	0.0	4.0	42.0
Mar 28	83.8	0.0	2.5	42.0
Mar 29	84.5	0.0	4.0	44.0
Mar 30	82.4	0.0	3.0	44.0
Mar 31	78.1	0.0	2.5	45.0
AVG	48.7	0.0	4.7	38.5

TABLE 106

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS														APRIL 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped			BULL		DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
Apr 1	0			0				35	17					82.0	0.0	2.5	47.0
Apr 2	0			0				37	16					71.8	0.0	2.5	47.0
Apr 3	0			0				23	10					65.1	0.0	2.5	47.0
Apr 4	0			0				40	18					59.9	41.8	2.5	47.0
Apr 5	0			0				58	9					67.0	44.0	2.5	47.0
Apr 6	0			0				77	16					73.0	44.0	2.5	47.0
Apr 7	0			0				83	12					80.2	43.9	2.5	47.0
Apr 8	0			0				97	13					83.8	43.8	2.5	47.0
Apr 9	0			0				70	10					116.6	43.8	2.5	47.0
Apr 10	0			0				46	10					153.5	53.6	2.5	48.0
Apr 11	0			0				42	5					204.5	96.0	2.0	48.0
Apr 12	0			0				17	3					166.2	57.2	1.0	48.0
Apr 13	0			0				7	2					136.4	41.7	1.0	48.0
Apr 14	0			0				10	4					124.0	41.3	0.5	48.0
Apr 15	0			0				18	2					109.7	40.6	0.5	48.0
Apr 16	0			0				23	6					113.9	40.6	0.5	48.0
Apr 17	0			0				21	6					107.1	41.5	0.5	48.0
Apr 18	0			0				22	5					102.8	40.8	0.5	49.0
Apr 19	0			0				23	6					101.7	40.8	0.5	50.0
Apr 20	1			0				41	12					107.6	40.6	0.5	50.0
Apr 21	0			0				40	5					117.1	40.6	0.5	50.0
Apr 22	1			1				27	0					105.8	42.7	0.5	51.0
Apr 23	3			1				16	0					156.3	46.0	0.5	51.0
Apr 24	1			0				14	2					152.2	43.3	0.5	51.0
Apr 25	0			0				15	3					146.8	39.9	0.5	52.0
Apr 26	2			0				10	1					156.0	49.6	0.5	52.0
Apr 27	2			0				14	3					150.2	48.3	0.5	52.0
Apr 28	1			1				14	6					149.9	40.6	0.5	52.0
Apr 29	4			0				15	4					131.5	36.8	0.5	52.0
Apr 30	13			2				5	1					131.2	36.4	0.5	52.0
TOTAL	28			5				960	207								
AVG.	1			0				32	7					117.5	40.7	1.3	49.0

Note: Official Spring Chinook run started April 1.

TABLE 107

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS														MAY 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped		BULL			DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
May 1	20			5				1	1					118.0	37.1	1.5	52.0
May 2	22			3				5	0					110.2	36.7	1.5	52.0
May 3	35			3				9	2					104.3	36.5	2.0	51.0
May 4	42			1				7	3					101.1	38.3	2.0	51.0
May 5	40			0				4	4					101.1	62.8	2.5	52.0
May 6	71			0				8	6					101.6	37.4	2.5	52.0
May 7	44			1				5	4					107.4	38.7	2.5	52.0
May 8	141			11				5	2					99.9	38.6	2.5	52.0
May 9	379			20				5	2					103.5	38.7	2.5	52.0
May 10	755			73				5	2					110.2	38.3	2.5	54.0
May 11	894			33				1	1					100.3	38.4	2.5	54.0
May 12	1,118			29				6	3					108.3	38.7	2.5	55.0
May 13	1,139			69				1	1					114.8	38.8	2.5	55.0
May 14	1,768			120				0	0					115.8	38.8	2.5	56.0
May 15	1,534			120				4	2					122.8	38.5	2.5	56.0
May 16	1,068			106				2	2					129.8	37.4	2.5	56.0
May 17	998			122				0	0					135.9	37.6	2.5	55.0
May 18	842			130				2	0					137.6	40.6	2.5	55.0
May 19	745			145				0	0					156.7	48.2	3.0	55.0
May 20	543			122				0	0					137.8	37.0	3.0	56.0
May 21	789			190				0	0					125.0	39.7	3.0	55.0
May 22	342			114				0	0					120.2	36.2	3.0	55.0
May 23	380			147				-1	-1					116.1	36.7	3.0	54.0
May 24	569			196				3	1					119.4	36.0	3.0	53.0
May 25	554			171				0	0					110.3	39.4	3.0	53.0
May 26	477			162				0	0					114.8	36.5	3.0	54.0
May 27	745			241				0	0					112.2	38.1	3.0	54.0
May 28	523			216				0	0					120.8	37.0	3.0	54.0
May 29	469			251				0	0					120.8	37.0	3.0	55.0
May 30	505			200				0	0					117.5	36.8	3.0	55.0
May 31	358			142				0	0					127.0	39.7	4.0	56.0
TOTAL	17,909			3,143				72	35								
AVG.	578			101				2	1					116.8	39.0	2.6	53.9
RUN YEAR																	
TOTALS TO DATE		CHINOOK	CHINOOK					STEELHEAD	unclipped			BULL					
		ADULT	JACK					STEELHEAD	STEELHEAD			TROUT	LAMPREY				
SPRING		17,937	3,148					1,032	242			0	0				

TABLE 108

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL SOCKEYE	unclipped STEELHEAD	STEELHEAD	PINK	STURGEON	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL									TROUT	LAMPREY			SECCH	DEG F
Jun 1	440			171			0	0	0					131.6	43.3	4.0	57.0
Jun 2	302			112			0	1	1					141.0	51.2	4.0	57.0
Jun 3	288			119			0	1	0					146.9	55.7	4.0	58.0
Jun 4	263			108			0	0	0					147.1	55.4	4.0	58.0
Jun 5	205			86			0	0	0					145.6	62.1	4.0	58.0
Jun 6	442			98			0	1	0					146.7	63.1	4.0	59.0
Jun 7	285			91			0	0	0					136.4	49.9	4.0	59.0
Jun 8	381			107			0	0	0					128.5	53.5	4.0	59.0
Jun 9	266			75			0	0	0					118.8	36.7	4.0	59.0
Jun 10	167			83			0	0	0				1	98.6	38.0	4.0	59.0
Jun 11	255			73			0	1	1					94.0	37.6	4.0	60.0
Jun 12	253			52			0	0	0					82.3	38.9	4.0	60.0
Jun 13	306			81			0	0	0					77.7	39.5	4.0	60.0
Jun 14		211		69			0	0	0					83.4	41.2	4.0	60.0
Jun 15		227		59			0	2	0				2	82.1	40.4	4.0	60.0
Jun 16		184		87			0	1	1					85.6	42.0	4.0	60.0
Jun 17		142		68			0	0	0					80.0	41.6	4.0	60.0
Jun 18		124		96			0	1	0				1	77.7	42.0	4.0	62.0
Jun 19		184		78			0	2	2				3	78.0	40.4	4.5	62.0
Jun 20		91		83			0	3	3				-1	64.9	42.6	4.5	62.0
Jun 21		156		104			0	0	0				6	64.8	42.0	4.5	63.0
Jun 22		152		77			0	1	1				3	61.1	16.9	5.0	63.0
Jun 23		167		77			0	7	7				4	66.9	16.6	5.0	63.0
Jun 24		122		64			0	2	2				4	57.0	17.0	5.0	63.0
Jun 25		102		48			1	7	5				3	55.6	16.7	5.0	64.0
Jun 26		57		66			3	5	4				0	49.5	17.1	5.0	64.0
Jun 27		74		76			2	13	11				2	50.0	17.0	5.0	65.0
Jun 28		77		64			1	2	1				0	50.0	16.7	5.0	65.0
Jun 29		44		42			4	5	5				1	46.0	16.6	5.0	65.0
Jun 30		28		55			1	6	6				0	42.0	16.8	5.0	65.0

TOTAL	3,853	2,142		2,469			12	61	50									
AVG.	296	126		82			0	2	2				1	89.7	37.0	4.4	61.0	

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	BULL TROUT	LAMPREY
TOTALS TO DATE							
SPRING	21,790	4,404	12	1,093	292	0	30
SUMMER	2,142	1,213					
TOTAL	23,932	5,617					

TABLE 109

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL			PINK STURGEON	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY SECCH	TEMP DEG F
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD		TROUT	LAMPREY				
Jul 1		45		37			3	10	8			3	44.0	16.6	5.0	65.0
Jul 2		56		52			1	12	6			3	37.0	17.0	5.0	65.0
Jul 3		73		46			2	13	11			3	39.4	16.7	5.0	65.0
Jul 4		61		34			1	10	5			2	39.9	17.0	5.0	65.0
Jul 5		38		26			4	15	8			0	39.2	16.5	5.0	65.0
Jul 6		34		38			1	21	13			0	40.1	17.0	5.0	65.0
Jul 7		35		37			5	18	16			1	43.3	16.5	5.0	66.0
Jul 8		35		43			4	29	24			3	43.2	17.1	5.0	66.0
Jul 9		21		31			5	28	23			2	44.0	16.7	4.5	66.0
Jul 10		31		45			2	46	34			2	38.9	17.1	4.5	66.0
Jul 11		56		31			5	34	22			1	41.4	16.6	4.5	66.0
Jul 12		46		51			5	47	42			3	44.6	17.0	4.5	67.0
Jul 13		39		20			5	52	34			3	41.5	16.6	4.5	67.0
Jul 14		28		23			4	51	28			3	40.7	16.6	4.5	68.0
Jul 15		37		24			6	38	29			4	41.2	16.6	5.0	68.0
Jul 16		28		20			5	44	29			2	35.6	17.0	5.0	68.0
Jul 17		24		24			7	60	43			4	35.7	16.5	5.0	69.0
Jul 18		35		28			8	77	59			4	38.0	17.0	5.0	69.0
Jul 19		27		12			10	71	37			1	38.5	16.6	5.0	69.0
Jul 20		28		9			6	60	35			2	38.0	16.9	5.0	69.0
Jul 21		14		7			5	69	51			3	35.7	16.6	5.0	69.0
Jul 22		19		8			8	52	34			3	33.3	17.0	5.0	69.0
Jul 23		17		7			6	59	39			3	37.0	16.7	5.0	69.0
Jul 24		20		9			8	68	47			1	38.3	17.0	5.0	69.0
Jul 25		13		2			6	63	34			2	36.5	16.7	5.0	70.0
Jul 26		10		2			7	47	30			2	32.9	17.9	5.0	70.0
Jul 27		27		11			8	59	47			6	32.1	17.3	5.0	70.0
Jul 28		19		10			5	74	55			6	33.6	16.8	5.0	70.0
Jul 29		16		5			5	48	31			7	28.9	16.6	5.0	70.0
Jul 30		30		6			2	67	44			6	31.7	16.9	5.0	70.0
Jul 31		15		4			1	35	28			5	30.8	16.7	5.0	70.0
TOTAL		977		702			150	1,377	946			90				
AVG.		32		23			5	44	31			3	37.9	16.8	4.9	67.7
RUN YEAR TOTALS TO DATE		CHINOOK ADULT		CHINOOK JACK			SOCKEYE	STEELHEAD	unclipped STEELHEAD			BULL TROUT	LAMPREY			
SPRING		21,790		4,404			162	2,470	1,238			0	120			
SUMMER		3,119		1,915												
TOTAL		24,909		6,319												

TABLE 110

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			BULL		DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON			TROUT	LAMPREY	KCFS	KCFS
Aug 1		25		13			3	73	50				4	30.6	17.0	5.0	69.0
Aug 2		30		1			2	50	36				5	28.2	17.2	5.0	69.0
Aug 3		32		5			7	67	48				3	29.7	17.3	5.0	69.0
Aug 4		28		3			1	51	28				1	33.5	17.2	5.0	69.0
Aug 5		10		3			3	31	17				2	34.7	17.1	5.0	69.0
Aug 6		18		5			0	38	25				0	31.0	17.0	5.0	69.0
Aug 7		13		6			2	40	24				0	33.1	17.0	5.0	69.0
Aug 8		25		3			0	49	19				0	31.8	16.9	5.0	69.0
Aug 9		19		8			2	27	19				4	30.2	16.9	5.0	69.0
Aug 10		26		5			1	62	49				2	29.7	17.1	5.0	70.0
Aug 11		14		5			1	31	16				1	26.1	13.3	5.0	70.0
Aug 12		19		8			3	34	24				2	23.9	11.4	5.0	69.0
Aug 13		30		4			2	36	21				3	25.0	13.0	5.0	69.0
Aug 14			40	2			0	34	24				2	26.6	13.9	5.0	69.0
Aug 15			33	7			1	19	11				0	27.2	13.3	5.0	69.0
Aug 16			38	8			1	31	19				0	25.8	13.5	5.0	69.0
Aug 17			36	8			0	27	18				0	25.6	13.4	5.0	69.0
Aug 18			42	1			1	35	24				1	23.9	11.6	5.0	69.0
Aug 19			50	5			1	25	8				2	21.1	8.6	5.0	70.0
Aug 20			56	7			0	33	17				0	23.9	11.3	5.0	69.0
Aug 21			84	10			0	26	16				1	26.7	14.2	5.0	69.0
Aug 22			107	13			2	29	17				3	28.9	15.9	5.0	69.0
Aug 23			105	16			0	39	22				1	26.1	13.1	5.0	69.0
Aug 24			101	10			0	27	14				0	24.0	11.2	5.0	69.0
Aug 25			86	27			0	44	26				2	22.8	10.0	5.0	69.0
Aug 26			76	21			0	18	9				0	22.7	9.9	5.0	69.0
Aug 27			95	18			0	34	18				2	24.5	11.7	5.0	69.0
Aug 28			124	19			0	29	13				0	25.1	12.0	5.0	69.0
Aug 29			136	12			0	31	15				0	24.2	11.3	5.0	69.0
Aug 30			217	43			0	59	28				2	22.3	9.5	5.0	69.0
Aug 31			183	42			0	43	22				0	22.4	9.6	5.0	69.0
TOTAL		289	1,609	338			33	1,172	697				43				
AVG.		22	89	11			1	38	22				1	26.8	13.6	5.0	69.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	21,790	4,404
SUMMER	3,408	1,984
FALL	1,609	269
TOTAL	26,807	6,657

SOCKEYE	STEELHEAD	unclipped STEELHEAD
TOTALS TO DATE		
SPRING	195	3,642
SUMMER		1,935
FALL		
TOTAL	195	5,577

BULL TROUT	LAMPREY
TOTALS TO DATE	
SPRING	0
SUMMER	163
FALL	
TOTAL	163

TABLE 111

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS														SEPTEMBER 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			unclipped		BULL		DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
Sep 1			169	74	0	0		82	34			0		20.5	8.3	5.0	69.0
Sep 2			216	75	0	0		64	27			0		19.6	0.0	5.0	68.0
Sep 3			288	91	0	0		40	14			0		23.0	0.0	5.0	68.0
Sep 4			245	69	0	0		64	31			0		21.6	0.0	5.0	69.0
Sep 5			260	76	0	0		99	42			0		24.7	0.0	5.0	69.0
Sep 6			354	137	0	0		125	54			1		21.4	0.0	5.0	69.0
Sep 7			369	121	1	0		193	84			1		23.8	0.0	5.0	70.0
Sep 8			266	108	1	0		154	67			2		27.4	0.0	5.0	70.0
Sep 9			475	200	0	1		262	99			2		22.2	0.0	5.0	69.0
Sep 10			353	138	0	1		250	89			1		20.4	0.0	5.0	69.0
Sep 11			280	132	1	0		176	69			0		22.0	0.0	5.0	69.0
Sep 12			274	147	0	0		138	53			0		24.2	0.0	5.0	69.0
Sep 13			237	167	1	0		150	59			0		30.7	0.0	5.0	69.0
Sep 14			320	168	0	0		159	53			1		23.6	0.0	5.0	68.0
Sep 15			410	178	4	0		154	49			0		26.5	0.0	5.0	68.0
Sep 16			460	226	0	1		305	105			0		24.4	0.0	5.0	68.0
Sep 17			666	276	5	5		458	146			1		25.7	0.0	5.0	68.0
Sep 18			550	204	5	0		403	132			0		21.6	0.0	5.0	68.0
Sep 19			686	231	5	1		291	90			0		28.2	0.0	5.0	68.0
Sep 20			615	269	42	9		365	136			1		25.6	0.0	5.0	67.0
Sep 21			663	294	26	13		620	184			0		28.3	0.0	5.0	67.0
Sep 22			696	234	39	9		594	227			0		26.0	0.0	5.0	67.0
Sep 23			699	293	54	15		935	297			0		25.4	0.0	5.0	66.0
Sep 24			606	230	50	11		1,021	362			0		27.5	0.0	5.0	66.0
Sep 25			592	260	131	29		1,520	528			1		26.1	0.0	5.0	67.0
Sep 26			438	190	192	49		1,474	483			1		28.0	0.0	5.0	66.5
Sep 27			318	161	238	33		1,249	388			0		24.6	0.0	5.0	66.0
Sep 28			261	134	225	27		781	223			0		19.3	0.0	5.0	66.0
Sep 29			215	84	114	13		578	201			1		25.7	0.0	5.0	66.0
Sep 30			206	87	118	9		495	162			0		24.3	0.0	5.0	65.0
TOTAL			12,187	5,054	1,252	226		13,199	4,488			13					
AVG.			406	168	42	8		440	150			0		24.4	0.3	5.0	67.8
RUN YEAR																	
TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK		COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		BULL TROUT	LAMPREY						
SPRING	21,790	4,404		1,252	226	195	16,841	6,423		0	176						
SUMMER	3,408	1,984															
FALL	13,796	5,323															
TOTAL	38,994	11,711															

TABLE 112

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL		unclipped		BULL		DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
Oct 1			220	126	190	14		805	262			0		28.6	0.0	5.0	64.0
Oct 2			239	138	244	5		956	291			0		24.1	0.0	5.0	64.0
Oct 3			164	102	245	15		714	210			0		25.5	0.0	5.0	64.0
Oct 4			134	89	169	41		619	205			0		22.4	0.0	5.0	64.0
Oct 5			179	91	306	54		944	296			0		20.6	0.0	5.0	64.0
Oct 6			107	77	189	38		626	188			0		20.0	0.0	5.0	64.0
Oct 7			122	73	333	42		756	216			1		27.2	0.0	5.0	63.0
Oct 8			136	93	351	70		861	282			0		23.7	0.0	5.0	62.0
Oct 9			70	37	146	15		370	119			0		19.8	0.0	5.0	62.0
Oct 10			76	62	171	26		629	178			0		25.9	0.0	5.0	61.0
Oct 11			57	62	239	26		676	223			0		27.4	0.0	5.0	61.0
Oct 12			52	50	204	17		509	179			0		28.2	0.0	5.0	61.0
Oct 13			49	36	237	10		547	155			0		23.4	0.0	5.0	60.0
Oct 14			42	34	183	8		511	167			0		19.8	0.0	5.0	59.0
Oct 15			17	32	165	9		369	114			0		20.7	0.0	5.0	59.0
Oct 16			38	25	148	17		310	88			0		20.1	0.0	5.0	59.0
Oct 17			56	29	196	13		472	151			0		22.6	0.0	5.0	59.0
Oct 18			61	60	186	33		790	274			0		18.5	0.0	5.0	59.0
Oct 19			31	20	85	13		329	123			0		16.3	0.0	5.0	59.0
Oct 20			30	30	120	19		337	121			0		12.9	0.0	5.0	58.0
Oct 21			38	16	92	25		428	157			0		16.2	0.0	5.0	58.0
Oct 22			36	43	81	2		522	191			0		21.2	0.0	5.0	58.0
Oct 23			37	24	56	2		387	146			0		16.1	0.0	5.0	57.0
Oct 24			40	25	101	7		422	159			0		24.9	0.0	5.0	57.0
Oct 25			10	4	151	28		437	163			0		21.8	0.0	5.0	57.0
Oct 26			24	21	178	24		492	163			0		16.2	0.0	5.0	57.0
Oct 27			29	10	185	27		371	145			0		21.6	0.0	5.0	56.0
Oct 28			16	16	90	16		300	98			0		17.8	0.0	5.0	56.0
Oct 29			31	19	86	33		298	109			0		19.0	0.0	5.0	56.0
Oct 30			17	18	69	22		409	161			0		20.2	0.0	5.0	55.0
Oct 31			12	5	23	16		201	81			0		21.3	0.0	5.0	54.0
TOTAL			2,170	1,467	5,219	687		16,397	5,415			1					
AVG.			70	47	168	22		529	175			0		21.4	0.0	5.0	59.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	21,790	4,404
SUMMER	3,408	1,984
FALL	15,966	6,790
TOTAL	41,164	13,178

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
6,471	913	195	33,238	11,838

BULL TROUT	LAMPREY
0	177

TABLE 113

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS											NOVEMBER 2019					
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			BULL		DISCH SPILL TURBIDITY				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
Nov 1			13	9	27	21		144	14				25.4	0.0	5	54
Nov 2			7	11	13	13		227	27				17.6	0.0	5	53
Nov 3			7	5	14	5		111	14				15.0	0.0	5	53
Nov 4			10	1	10	5		96	22				15.7	0.0	5	52
Nov 5			5	1	22	3		86	12				21.5	0.0	5	52
Nov 6			8	0	8	3		76	12				15.3	0.0	5	51
Nov 7			1	1	2	0		101	8				17.9	0.0	5	51
Nov 8			1	1	1	0		76	5				18.3	0.0	6	51
Nov 9			6	4	6	3		52	8				19.8	0.0	6	51
Nov 10			9	1	6	0		64	5				13.2	0.0	6	51
Nov 11			12	0	7	0		67	19				18.0	0.0	6	50
Nov 12			4	0	0	1		59	10				17.5	0.0	6	50
Nov 13			4	0	8	1		54	10				20.7	0.0	6	50
Nov 14			2	0	1	0		25	1				21.0	0.0	6	50
Nov 15			1	0	8	1		34	9				21.1	0.0	6	50
Nov 16			4	0	3	2		34	10				15.5	0.0	6	50
Nov 17			5	0	6	1		51	15				13.1	0.0	6	50
Nov 18			2	1	8	0		42	18				16.6	0.0	6	49
Nov 19			3	0	1	1		36	7				22.3	0.0	6	49
Nov 20			1	1	6	2		28	7				17.5	0.0	6	49
Nov 21			3	1	3	1		17	9				23.6	0.0	6	48
Nov 22			0	0	5	0		31	11				26.6	0.0	6	48
Nov 23			1	1	3	0		19	10				19.1	0.0	6	48
Nov 24			1	0	5	0		23	8				19.3	0.0	6	47
Nov 25			0	0	4	1		12	4				16.1	0.0	6	47
Nov 26			0	0	4	0		16	7				21.3	0.0	7	47
Nov 27			0	1	1	0		16	10				20.8	0.0	7	45
Nov 28			3	0	2	1		50	25				17.3	0.0	8	45
Nov 29			0	0	3	1		37	14				19.3	0.0	8	45
Nov 30			4	0	5	-1		14	6				21.6	0.0	8	44
TOTAL			117	39	192	65		1,698	337							
AVG			4	1	6	2		57	11				18.9	0.0	5.7	49.3

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	BULL TROUT	LAMPREY
TOTALS TO DATE									
SPRING	21,790	4,404	6,663	978	195	34,936	12,175	0	177
SUMMER	3,408	1,984							
FALL	15,966	6,790							
TOTAL	41,164	13,178							

Official Fall Chinook run ended October 31. November and December counts were not added to fall totals.

TABLE 114
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER MONUMENTAL PROJECT - FISH COUNTS												DECEMBER 2019					
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			unclipped		BULL		DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH	DEG F
Dec 1			1	0	3	2		9	4	0		0	21	0	8	44	
Dec 2			0	0	1	1		4	1	0		0	14	0	7	44	
Dec 3			0	0	2	0		6	1	0		0	19	0	7	44	
Dec 4			0	0	2	0		10	2	0		0	19	0	7	43	
Dec 5			0	-1	1	0		7	2	0		0	19	0	7	43	
Dec 6			0	0	3	0		8	1	0		0	18	0	7	43	
Dec 7			0	0	0	0		7	4	0		0	20	0	7	43	
Dec 8			0	0	1	1		5	2	0		0	17	0	7	42	
Dec 9			0	0	0	0		1	1	0		0	11	0	7	42	
Dec 10			0	0	0	0		2	1	0		0	20	0	7	42	
Dec 11			0	0	0	0		12	5	0		0	21	0	7	42	
Dec 12			0	0	0	0		3	0	0		0	22	0	7	41	
Dec 13			0	0	0	0		5	3	0		0	16	0	7	41	
Dec 14			0	0	1	0		8	5	0		0	20	0	8	41	
Dec 15			0	0	0	0		4	1	0		0	24	0	8	41	
Dec 16			0	0	0	0		-2	0	0		0	21	0	8	41	
Dec 17			0	0	0	0		9	4	0		0	29	0	8	41	
Dec 18			-1	0	0	0		14	5	0		0	40	0	8	42	
Dec 19			0	0	0	0		2	1	0		0	26	0	8	42	
Dec 20			0	0	1	0		4	1	0		0	16	0	8	42	
Dec 21			0	0	1	0		6	4	0		0	12	0	8	42	
Dec 22			0	0	1	0		8	6	0		0	23	0	8	42	
Dec 23			-1	0	0	0		9	2	0		0	18	0	8	42	
Dec 24			0	0	0	0		7	4	0		0	19	0	8	42	
Dec 25			0	0	0	0		16	4	0		0	26	0	8	42	
Dec 26			0	0	1	0		4	2	1		2	21	0	8	42	
Dec 27			0	0	2	0		8	4	0		0	24	0	8	42	
Dec 28			0	0	1	0		4	4	0		0	24	0	8	42	
Dec 29			0	0	0	0		4	4	0		0	22	0	8	42	
Dec 30			1	0	2	0		4	3	0		0	20	0	8	42	
Dec 31			-1	0	0	0		7	4	0		0	22	0	8	42	
TOTAL			-1	-1	23	4		195	85	1		2					
AVG			0	0	1	0		6	3	0			20.8	0.0	7.3	42.1	

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	BULL TROUT	LAMPREY
TOTALS TO DATE									
SPRING	21,790	4,404	6,663	978	195	34,936	12,175	0	177
SUMMER	3,408	1,984							
FALL	15,966	6,790							
TOTAL	41,164	13,178							

Official Fall Chinook run ended October 31. November and December counts were not added to fall totals.

TABLE 115
YEARLY TOTALS OF SALMONIDS COUNTED OVER
LOWER MONUMENTAL DAM
1969 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS
1969	86,700	71,436	1,127	6,466	165,729
1970	75,310	62,167	240	2,972	140,689
1971	68,885	70,114	808	2,171	141,978
1972	72,220	66,857	415	733	140,225
1973	80,557	39,530	206	1,333	121,626
1974	31,728	15,139	114	812	47,793
1975	33,013	17,363	146	572	51,094
1976	34,395	21,822	364	361	56,942
1977	49,301	47,749	293	122	97,465
1978	56,835	20,540	96	218	77,689
1979	11,288	17,794	31	194	29,307
1980	10,885	34,322	48	73	45,328
1981	19,991	35,923	136	63	56,113
1982	21,965	62,772	154	89	84,980
1983	19,082	80,562	118	110	99,872
1984	17,866	88,655	63	26	106,610
1985	42,437	109,718	68	24	152,247
1986	50,584	120,479	26	9	171,098
1987	42,434	62,586	16	6	105,042
1988	44,262	84,746	35	3	129,046
1989	25,590	129,618	9	17	155,234
1990	28,215	44,907	0	1	73,123
1991	18,210	98,315	6	5	116,536
1992	30,145	130,429	15	0	160,589
1993	34,195	70,992	18	0	105,205
1994	7,219	49,917	7	0	57,143
1995	7,883	90,157	4	4	98,048
1996	15,606	96,609	3	6	112,224
1997	51,556	85,602	16	30	137,204
1998	21,537	66,118	2	0	87,657
1999	20,271	72,842	15	88	93,216
2000	68,961	112,616	291	750	182,618
2001	225,667	285,745	32	1,210	512,654
2002	124,897	232,809	46	158	357,910
2003	123,158	187,338	14	1,106	311,616
2004	114,030	158,792	80	3,665	276,567
2005	52,281	153,792	18	2,095	208,186
2006	54,482	135,566	17	1,181	191,246
2007	73,333	154,104	44	2,231	229,712
2008	123,018	186,058	722	4,513	314,311
2009	183,451	317,275	1,162	5,617	507,505
2010	200,817	213,811	1,652	2,003	418,283
2011	178,281	187,272	1,395	4,829	371,777
2012	144,661	101,523	486	2,501	249,171
2013	151,421	106,649	1,014	2,325	261,409
2014	193,400	170,270	2,805	19,855	386,330
2015	213,045	131,476	888	1,353	346,762
2016	135,313	94,196	1,024	3,293	233,826
2017	80,253	66,499	346	7,587	154,685
2018	70,462	50,031	398	2,058	122,949
2019	54,496	35,131	195	7,668	97,490
Total	3,695,592	5,146,733	17,228	92,506	8,952,059
10-Year Average	142,215	115,686	1,020	5,347	264,268

*Jacks included

2001-2004 and 2014, 2015, and 2019 extended season video counts are included.

TABLE 116
MONTHLY COUNT OF CHINOOK SALMON
LOWER MONUMENTAL DAM
1969-2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
1969			1	67	38,702	25,289	13,832	1,776	5,069	1,619	340	5	86,700
1970	1		1	9,194	32,623	15,818	9,369	1,720	5,178	1,281	122	3	75,310
1971				358	19,340	23,842	14,492	857	8,599	1,397			68,885
1972				6,838	36,448	6,989	15,501	1,835	3,737	872			72,220
1973				27,168	31,973	11,282	4,343	678	4,273	840			80,557
1974				327	15,796	4,904	7,241	602	1,972	886			31,728
1975				704	17,421	6,648	4,884	548	2,428	380			33,013
1976				1,995	19,292	7,731	3,172	175	1,609	421			34,395
1977				19,125	17,093	7,884	3,092	300	1,321	486			49,301
1978				12,324	30,067	8,941	3,853	831	536	283			56,835
1979				1,332	5,637	2,010	922	211	916	260			11,288
1980				1,008	5,198	2,318	1,315	319	405	322			10,885
1981				4,039	9,012	3,349	1,924	97	1,100	470			19,991
1982				372	11,319	5,031	2,773	264	1,631	575			21,965
1983				1,250	10,262	3,841	2,103	220	1,008	398			19,082
1984				513	7,186	6,297	2,549	205	789	327			17,866
1985				7,360	20,572	7,303	1,279	402	2,451	3,070			42,437
1986				10,893	25,454	7,436	1,821	123	2,786	2,071			50,584
1987				8,706	21,166	5,492	2,400	278	2,625	1,767			42,434
1988				11,451	19,823	7,851	1,832	607	1,752	946			44,262
1989				159	14,924	4,858	1,615	476	1,852	706			24,590
1990				6,830	12,127	5,197	1,594	181	1,205	1,081			28,215
1991				925	6,537	5,491	1,936	127	2,177	1,017			18,210
1992				10,529	10,822	5,001	1,220	188	1,729	656			30,145
1993				3,848	16,154	9,720	2,016	313	1,591	509	44		34,195
1994				574	2,448	1,287	322	156	1,308	1,124			7,219
1995				210	1,435	1,092	471	280	2,183	2,212			7,883
1996				62	5,836	4,442	1,407	395	2,547	917			15,606
1997				1,493	26,966	16,833	2,484	309	2,174	1,297			51,556
1998				2,325	6,626	5,095	1,222	272	3,418	2,579			21,537
1999				124	4,551	4,951	1,630	623	5,499	2,893			20,271
2000				10,018	30,132	11,068	2,469	1,367	8,950	4,957			68,961
2001				104,119	60,247	32,422	6,261	1,472	16,390	4,411	334	11	225,667
2002	1		7	3,881	60,767	31,795	6,496	2,367	15,707	3,660	214	2	124,897
2003			50	33,435	31,906	28,381	6,247	951	15,255	6,642	288	3	123,158
2004			1	29,462	36,732	18,114	3,721	566	21,620	3,670	145	-1	114,030
2005				1,174	18,726	13,028	2,942	948	12,215	3,248			52,281
2006				10	17,659	12,916	3,541	1,816	12,534	6,006			54,482
2007				2,143	27,277	13,221	5,238	1,804	17,407	6,243			73,333
2008				2,468	43,772	37,105	7,801	3,334	24,325	4,213			123,018
2009				483	64,754	45,527	10,839	7,310	49,587	4,951			183,451
2010				23,522	70,028	39,285	9,253	2,937	44,326	11,466			200,817
2011				193	71,045	44,773	15,764	4,502	34,401	7,603			178,281
2012				203	59,645	23,507	4,218	4,103	47,126	5,859			144,661
2013				1,102	45,917	19,984	7,105	9,070	61,547	6,696			151,421
2014				4,044	75,066	28,085	9,916	4,481	62,903	8,547	351	7	193,400
2015				29,958	77,723	26,209	7,468	7,711	54,597	9,379			213,045
2016				1,924	60,370	19,277	4,308	7,594	36,859	4,981			135,313
2017				97	22,869	21,572	3,578	1,792	24,634	5,711			80,253
2018				73	26,689	16,436	1,758	2,883	18,287	4,336			70,462
2019				33	21,052	8,464	1,679	2,236	17,241	3,637	156	-2	54,496
Total	2	0	60	400,445	1,425,186	725,392	235,216	84,612	671,779	149,878	1,994	28	3,694,592
10-Year Average	6,115	53,040	24,759	6,505	4,731	40,192	6,822						142,215

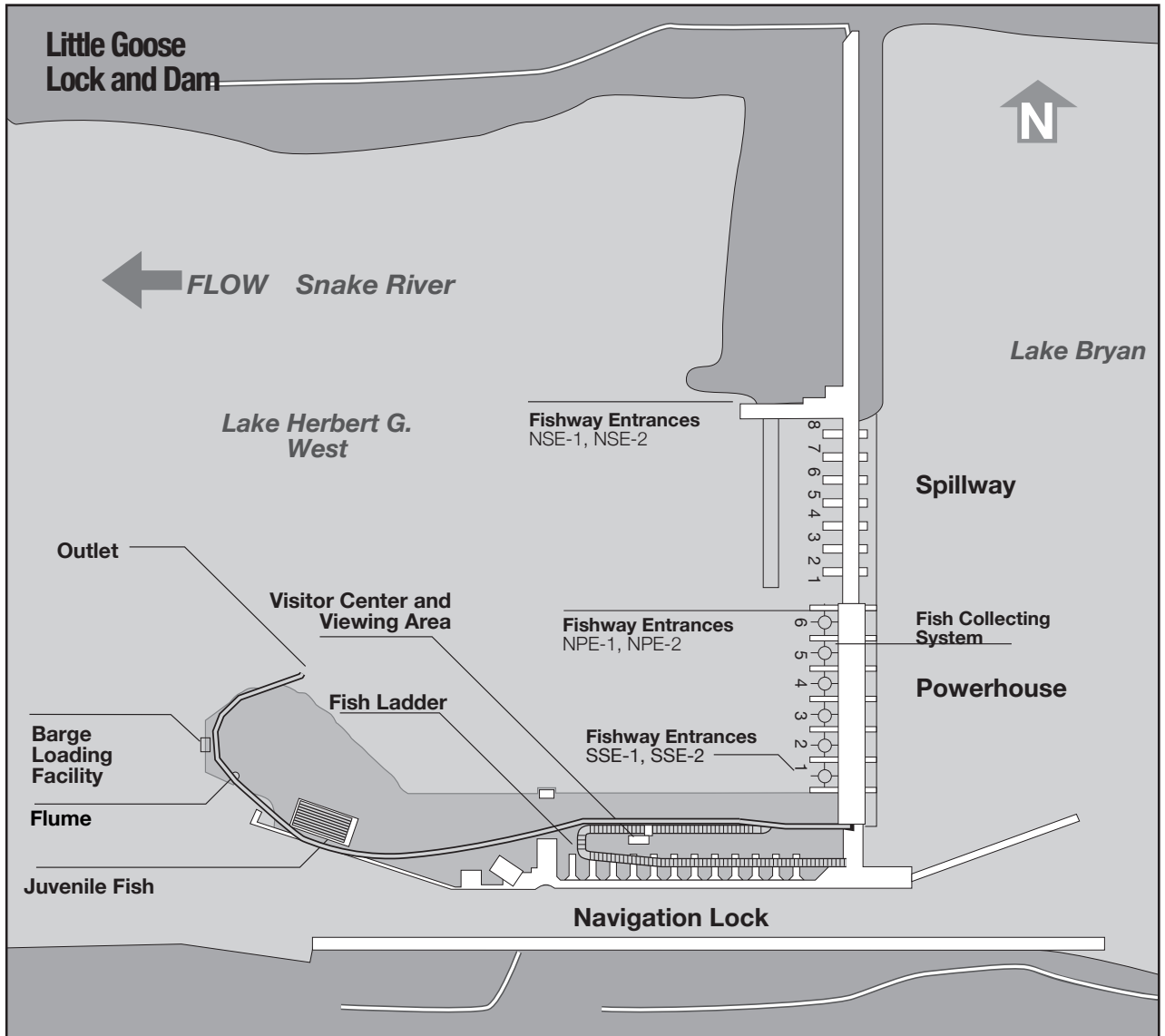
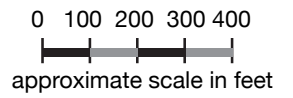
*Jacks included
Extended season video counts are included.

TABLE 117
MONTHLY COUNT OF STEELHEAD
LOWER MONUMENTAL DAM
1969 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS	
1969			5	1,525	9,235	5,475	248	2,141	6,410	26,647	15,195	4,189	366	71,436
1970	252	1,025	1,519	3,143	2,134	232	1,989	7,947	30,701	11,194	1,615		416	62,167
1971			422	2,404	1,510	131	2,199	2,992	42,438	18,018				70,114
1972				2,182	744	86	2,336	7,184	32,417	21,908				66,857
1973				2,061	658	82	2,060	3,505	21,241	9,923				39,530
1974				1,221	256	17	1,237	2,835	4,929	4,644				15,139
1975				745	444	24	873	4,417	7,437	3,423				17,363
1976				806	256	146	1,092	4,409	10,328	4,785				21,822
1977				849	192	127	3,026	2,991	22,494	18,070				47,749
1978				1,324	128	16	719	2,522	10,477	5,354				20,540
1979				643	118	28	1,314	1,937	4,898	8,856				17,794
1980				2,467	573	70	754	3,725	14,078	12,655				34,322
1981				996	321	75	1,783	1,632	12,416	18,700				35,923
1982				2,026	1,123	35	1,851	7,373	22,426	27,938				62,772
1983				1,021	131	14	3,027	10,101	40,004	26,264				80,562
1984				2,663	482	52	3,150	4,820	42,788	34,700				88,655
1985				6,889	548	189	1,888	10,086	63,734	26,384				109,718
1986				1,914	205	89	5,082	7,751	46,876	58,562				120,479
1987				2,483	264	142	2,531	4,692	20,766	31,708				62,586
1988				4,274	604	411	1,903	5,725	35,290	36,539				84,746
1989				1,067	389	304	6,364	8,093	63,026	50,375				129,618
1990				2,691	197	189	1,804	1,579	14,209	24,238				44,907
1991				2,211	288	70	2,275	1,497	41,894	50,080				98,315
1992				1,456	182	285	2,890	7,223	68,606	49,787				130,429
1993				7,752	277	564	5,367	8,197	16,146	30,228	2,461			70,992
1994				2,844	76	186	2,595	2,998	14,901	26,317				49,917
1995				1,072	162	138	4,074	10,424	38,890	35,397				90,157
1996				934	96	137	3,199	12,413	47,234	32,596				96,609
1997				1,044	162	177	3,422	9,326	34,521	36,950				85,602
1998				1,501	62	198	2,361	1,835	19,892	40,269				66,118
1999				559	59	98	2,652	11,170	37,899	20,405				72,842
2000				937	-26	546	5,741	9,045	61,072	35,301				112,616
2001				1,636	113	2,874	19,045	26,264	126,517	76,474	23,900	8,922		285,745
2002	3,687	1,858	3,429	4,876	196	688	10,901	25,998	94,310	75,670	9,028	2,168		232,809
2003	775	3,686	5,325	1,872	45	850	7,704	8,122	93,190	60,813	3,945	1,011		187,338
2004	115	1,036	2,619	1,473	127	1,052	6,477	4,020	90,900	45,380	4,101	1,492		158,792
2005				783	181	1,062	5,193	7,445	70,701	68,427				153,792
2006				2,756	98	454	3,392	7,778	63,849	57,239				135,566
2007				2,174	143	914	5,735	8,657	77,612	58,869				154,104
2008				3,520	510	552	12,664	21,947	97,562	49,303				186,058
2009				4,294	426	1,358	12,112	23,920	167,680	107,485				317,275
2010				3,621	489	1,377	19,765	25,351	109,728	53,480				213,811
2011				3,331	548	196	7,342	45,999	82,453	47,403				187,272
2012				3,189	421	518	2,960	4,550	55,979	33,906				101,523
2013				2,310	196	539	4,476	12,809	45,280	41,039				106,649
2014			3,603	1,179	497	1,163	10,001	11,417	79,686	51,670	8,778	2,276		170,270
2015	423	1,240		1,575	194	560	2,104	8,763	70,875	45,742				131,476
2016				1,324	113	508	4,002	4,319	42,587	41,343				94,196
2017				1,326	113	61	796	1,020	32,569	30,614				66,499
2018				1,121	81	161	1,938	1,128	25,245	20,357				50,031
2019				960	72	61	1,377	1,172	13,199	16,397	1,698	195		35,131
Total	5,252	8,850	18,442	116,734	22,653	20,054	221,683	437,533	2,410,597	1,808,374	59,715	16,846		5,146,733
10-Year Average				1,994	272	514	5,476	11,653	55,760	38,195				115,686

Note - Counts include extended season video counts.

Plate 8 Little Goose Lock and Dam



LITTLE GOOSE DAM

FISH COUNTING SCHEDULE

01 January – 31 March	No counting
01 April – 31 October	Visual counting daily from 0400-2000 hours PST

FISH LADDER OPERATING SCHEDULE

01 January – 02 January	Ladder in service
02 January - 22 February	Ladder dewatered for annual maintenance
22 February – 31 December	Ladder in service

FISHWAY ACTIVITIES

Adult fishways were inspected for proper operating criteria daily with an average of three fishway inspections per week during fish passage season.

Water temperature in the ladder was recorded on an hourly basis at the ladder exit, turn pool and junction pool using permanently mounted equipment. Little Goose was able to install the permanent fish ladder temperature control system in 2018, but has run into numerous issues with reliable operation.

Water clarity was measured during all adult fish passage facility inspections. Measurements were taken in the adult fish ladder using a Secchi disk that could be lowered to a maximum depth of just over 6 feet. Anything over 6 foot is noted as 6+ feet.

Collection channel subsurface water velocities were measured monthly using a rickly velocity meter. Measurements were taken just below the surface, at mid depth and just above bottom and averaged. Additionally, collection channel surface water velocities were measured using a floating stick or bubble that was timed over a distance and calculated into feet per second.

Invasive species were monitored, with particular attention to Zebra Mussels and Quagga Mussels. Reports were submitted weekly to district.

Four Peaks and USACE conducted fish counting activities and monitored for and reported bull trout migration past the adult fish ladder. Sightings are reported annually to U.S. Fish and Wildlife Services.

The juvenile fish facility was operated for juvenile fish transport/bypass and adult fallbacks counts from April 01 to October 31.

TABLE 118

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LITTLE GOOSE DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				19	15,892	12,378	2,653	1,840	16,072	4,375			53,229
STEELHEAD				735	130	30	1,018	888	10,429	15,836			29,066
SOCKEYE						5	60	16	2	1			84
COHO								1	653	6,352			7,006
PINK													0
TOTAL				754	16,022	12,413	3,731	2,745	27,156	26,564			89,385
LAMPREY						10	41	3	-9	0			45
STURGEON													0
BULL TROUT					5	1							6

*Jacks included

TABLE 119
DISCHARGE AND WATER QUALITY DATA
LITTLE GOOSE PROJECT 2019

JANUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F
Jan 1	18.7	0.0		40.2
Jan 2	23.1	0.0		40.0
Jan 3	20.3	0.0		40.0
Jan 4	23.1	0.0		40.1
Jan 5	20.3	0.0		40.0
Jan 6	19.4	0.0		40.1
Jan 7	23.8	0.0		39.5
Jan 8	21.5	0.0		36.3
Jan 9	22.2	0.0		37.4
Jan 10	26.0	0.0		37.9
Jan 11	24.7	0.0		35.6
Jan 12	19.9	0.0		35.1
Jan 13	15.9	3.0		34.4
Jan 14	16.5	3.2		33.1
Jan 15	16.5	3.4		32.1
Jan 16	20.5	0.0		31.2
Jan 17	21.8	0.0		36.2
Jan 18	21.8	0.0		44.4
Jan 19	19.8	0.0		45.8
Jan 20	23.3	0.0		40.0
Jan 21	27.0	0.0		37.2
Jan 22	26.2	0.0		37.0
Jan 23	22.3	0.0		46.0
Jan 24	28.6	0.0		38.5
Jan 25	25.3	0.0		37.2
Jan 26	24.4	0.0		34.4
Jan 27	30.1	0.0		37.1
Jan 28	27.4	0.0		34.6
Jan 29	28.3	0.0		34.5
Jan 30	26.9	0.0		33.3
Jan 31	23.7	0.0		34

AVG. 22.9 0.3 37.5

FEBRUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F
Feb 1	26.3	0.0		34.7
Feb 2	20.6	0.0		40.3
Feb 3	22.8	0.0		39.3
Feb 4	34.3	0.0		35.5
Feb 5	28.4	0.0		25.0
Feb 6	30.2	0.0		20.7
Feb 7	28.8	0.0		16.1
Feb 8	28.7	0.0		23.7
Feb 9	26.2	0.0		30.8
Feb 10	22.2	0.0		23.6
Feb 11	25.9	0.0		28.4
Feb 12	28.3	0.0		29.9
Feb 13	31.6	0.0		33.8
Feb 14	29.4	0.0		36.2
Feb 15	25.8	0.0		37.0
Feb 16	28.1	0.0		37.0
Feb 17	29.9	0.0		37.0
Feb 18	27.4	0.0		37.0
Feb 19	28.5	0.0		37.0
Feb 20	32.7	0.0		37.1
Feb 21	27.2	0.0		37.0
Feb 22	30.7	0.0		36.9
Feb 23	23.6	0.0		36.5
Feb 24	26.1	0.0		36.3
Feb 25	28.1	0.0		36.0
Feb 26	26.8	0.0		35.7
Feb 27	30.6	0.0		35.7
Feb 28	32.7	0.0		36.0

AVG. 27.9 0.0 33.2

MARCH				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F
Mar 1	33.5	0.0		36.3
Mar 2	33.2	0.0		36.6
Mar 3	33.1	0.0		36.8
Mar 4	35.3	0.0	4.7	36.8
Mar 5	37.7	0.0		36.8
Mar 6	38.9	0.0	5.6	36.8
Mar 7	34.3	0.0	5.4	36.9
Mar 8	32.8	0.0		37.1
Mar 9	38.7	0.0		37.3
Mar 10	26.1	0.0		37.3
Mar 11	39.5	0.0	5.2	37.4
Mar 12	33.1	0.0	4.9	37.4
Mar 13	33.4	0.0		37.7
Mar 14	37.7	0.0	5.5	38.1
Mar 15	41.3	0.0		38.4
Mar 16	34.3	0.0		38.6
Mar 17	41.3	0.0		39.0
Mar 18	40.8	0.0		39.6
Mar 19	41.9	0.0	5.4	40.3
Mar 20	43.6	0.0	4.4	40.9
Mar 21	50.9	0.0	5.6	41.4
Mar 22	61.8	0.0		41.4
Mar 23	62.5	0.0		42.1
Mar 24	59.0	0.0		42.7
Mar 25	73.9	0.0	4.9	43.1
Mar 26	63.1	0.0	4.1	44.0
Mar 27	80.4	0.0		44.5
Mar 28	79.2	0.0	3.2	44.9
Mar 29	76.9	0.0		45.3
Mar 30	76.9	0.0		45.2
Mar 31	79.6	0.0		45.0

AVG. 48.2 0.0 4.9 39.9

*Water temps are from water quality sensor located in the tailrace

TABLE 120

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL												SECCHI	DEG F	
Apr 1	0							42	7				64.3	0.0	1.6	45.4	
Apr 2	0							10	-2				62.4	0.0	1.3	45.5	
Apr 3	0							17	6				59.3	33.7		46.2	
Apr 4	0							49	2				68.0	41.0	1.9	46.2	
Apr 5	0							65	7				73.3	42.4		46.7	
Apr 6	0							42	2				79.5	42.8		47.4	
Apr 7	0							62	5				83.6	43.4	3.0	47.8	
Apr 8	0							54	13				115.1	47.0		48.2	
Apr 9	0							50	1				152.5	63.4	2.6	48.4	
Apr 10	0							31	4				197.4	120.3		47.7	
Apr 11	0							8	0				159.1	68.7	0.8	46.6	
Apr 12	0							4	2				132.8	48.0		46.4	
Apr 13	0							1	0				121.4	47.1		46.3	
Apr 14	0							3	-1				110.3	47.1	0.7	46.2	
Apr 15	0							8	1				110.8	48.4		46.6	
Apr 16	0							16	4				107.6	48.5	0.9	47.6	
Apr 17	0							23	3				103.6	47.7		48.6	
Apr 18	0							30	2				100.8	47.2		49.3	
Apr 19	0							29	2				106.5	48.5		49.6	
Apr 20	0							35	2				119.4	49.3		49.9	
Apr 21	1							31	2				150.7	62.3	2.0	50.4	
Apr 22	0							27	3				156.8	66.7		51.4	
Apr 23	0							9	2				153.7	62.7	1.1	51.9	
Apr 24	0							6	0				149.0	59.4		51.2	
Apr 25	1							10	1				163.1	73.8	1.8	50.7	
Apr 26	0							3	0				148.7	59.9		50.9	
Apr 27	9							17	0				150.5	61.5		50.9	
Apr 28	3							13	0				133.2	51.3	1.8	50.6	
Apr 29	0							21	0				133.2	51.7		50.3	
Apr 30	5							19	0				117.8	49.4	2.0	50.1	
TOTAL	19							735	68								

AVG.	1							25	2				119.5	51.1	1.7	48.5
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*April 2-Oct 31 water temps collected from juvenile fish collection channel.

Visual fish counting started April 1.

TABLE 121

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		PINK	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD		TROUT	LAMPREY			SECCHI	DEG F
May 1	1			1				14	0		0		112.1	48.7		50.3
May 2	3			0				21	0		0		104.8	46.6	2.6	50.4
May 3	9			0				15	1		0		100.8	46.4		50.7
May 4	22			0				12	1		0		102.9	46.9		51.0
May 5	29			0				8	0		1		101.5	46.3	3.6	51.4
May 6	33			1				6	3		0		108.8	47.7		51.7
May 7	51			1				8	4		0		101.4	46.4	3.0	53.0
May 8	34			1				5	2		0		104.8	46.4		54.0
May 9	88			4				4	2		0		110.2	46.2	3.1	54.9
May 10	274			12				5	2		0		103.1	46.5		55.9
May 11	341			20				3	1		0		107.2	47.0		55.9
May 12	647			34				4	4		0		115.4	47.7	4.0	55.5
May 13	1,020			36				7	4		0		117.6	49.3		55.1
May 14	865			53				5	2		0		124.9	51.1	3.6	54.9
May 15	914			29				0	0		0		131.1	53.4		54.6
May 16	806			56				4	1		1		137.6	52.1	2.8	54.6
May 17	1,052			66				1	1		0		140.3	53.7		54.2
May 18	183			35				2	2		1		159.3	69.8		53.8
May 19	185			54				0	0		-1		141.5	56.1	2.9	53.4
May 20	873			135				3	2		-1		126.8	48.9		53.0
May 21	1,292			118				1	0		2		119.8	47.8	2.4	52.3
May 22	1,130			150				0	0		0		119.7	47.5		52.1
May 23	546			116				0	0		0		120.0	48.5	2.6	52.3
May 24	391			101				1	0		1		113.1	48.1		53.2
May 25	361			158				1	0		0		114.9	47.7		53.2
May 26	119			140				0	0		0		114.6	48.1	3.0	53.4
May 27	21			68				0	0		0		120.6	48.2		54.1
May 28	299			150				0	0		0		123.2	47.9	3.6	54.4
May 29	1,159			245				0	0		0		121.1	48.0		55.3
May 30	423			187				0	0		0		129.0	48.0	3.0	55.6
May 31	580			170				0	0		1		132.9	49.2		56.2
TOTAL	13,751			2,141				130	32		5					
AVG.	444			69				4	1		0		118.7	49.2	3.1	53.6
RUN YEAR																
TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK						STEELHEAD	unclipped STEELHEAD		BULL TROUT	LAMPREY				
SPRING	13,770	2,141						865	100		5	0				

TABLE 122

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL													
Jun 1	394			194			0	0	0		1	0	143.4	55.2		56.9
Jun 2	419			205			0	0	0		0	0	146.6	57.4	3.3	58.0
Jun 3	636			157			0	0	0		0	0	148.4	58.9		58.4
Jun 4	633			128			0	0	0		0	0	146.1	63.7	3.5	58.6
Jun 5	499			125			0	0	0		0	0	146.3	56.9		58.6
Jun 6	646			133			0	1	1		0	0	138.7	50.2	2.5	58.8
Jun 7	1,175			187			0	0	0		0	0	130.6	48.9		58.7
Jun 8	568			76			0	0	0		0	0	121.6	49.3		58.4
Jun 9	487			85			0	0	0		0	0	101.4	46.7	3.0	58.8
Jun 10	442			80			0	0	0		0	0	93.9	45.9		58.9
Jun 11	226			80			0	0	0		0	1	86.4	44.4	3.6	59.0
Jun 12	255			57			0	1	0		0	0	81.7	43.9		58.7
Jun 13	249			64			0	0	0		0	0	83.5	43.7	3.5	58.5
Jun 14	191			84			0	0	0		0	0	83.2	43.0		59.0
Jun 15	142			54			0	0	0		0	0	83.6	42.8		59.8
Jun 16		262		77			0	1	0		0	0	80.8	42.8	4.0	60.9
Jun 17		529		107			0	3	0		0	0	80.0	42.9		62.3
Jun 18		275		86			0	0	0		0	0	76.2	42.6		63.4
Jun 19		91		49			0	0	0		0	1	67.5	41.2	3.7	64.1
Jun 20		92		86			0	3	1		0	1	67.5	41.4	3.0	64.1
Jun 21		180		108			0	1	1		0	4	63.4	19.3		63.9
Jun 22		349		86			0	2	2		0	0	67.3	20.2		63.9
Jun 23		190		59			0	0	0		0	0	61.0	18.2	4.0	64.0
Jun 24		149		38			0	2	2		0	1	57.0	17.0		64.1
Jun 25		99		41			1	2	2		0	1	52.0	15.5	2.9	64.1
Jun 26		96		34			1	2	2		0	-2	52.7	15.7		63.5
Jun 27		101		45			0	2	1		0	2	51.8	15.4	3.0	62.2
Jun 28		85		46			1	2	1		0	0	47.8	14.3		62.0
Jun 29		94		76			1	4	4		0	1	43.4	13.0		62.1
Jun 30		120		57			1	4	2		0	0	44.6	13.3	4.2	62.3
TOTAL	6,962	2,712		2,704			5	30	19		1	10				

AVG.	464	181		90			0	1	1		0	0	88.3	37.5	3.4	60.9
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	20,732	3,850
SUMMER	2,712	995
TOTALS	23,444	4,845

SOCKEYE	STEELHEAD	unclipped STEELHEAD
5	895	119

BULL TROUT	LAMPREY
6	10

TABLE 123

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL												SECCHI	DEG F
Jul 1		102		32			0	5	4			1	37.1	11.1		62.4
Jul 2		61		29			3	6	6			-1	40.2	12.0	4.7	62.0
Jul 3		89		51			1	9	7			2	40.3	12.1		63.4
Jul 4		194		67			3	8	6			1	38.4	11.5	3.9	64.6
Jul 5		125		44			0	4	3			5	40.1	12.0		64.6
Jul 6		86		34			0	12	9			0	41.7	12.5		64.4
Jul 7		57		16			0	13	8			-1	43.4	13.0	4.6	64.8
Jul 8		68		21			0	18	11			1	42.9	12.9		66.6
Jul 9		72		34			3	6	4			3	40.3	12.0	4.1	67.4
Jul 10		43		18			0	17	15			2	40.5	12.1		67.6
Jul 11		57		35			4	16	13			3	45.3	13.6	4.5	67.4
Jul 12		65		17			2	24	18			0	41.0	12.3		67.6
Jul 13		64		25			3	36	26			4	42.2	12.7		67.8
Jul 14		76		21			5	30	23			1	39.7	12.0	5.1	67.4
Jul 15		27		18			2	33	23			3	36.8	11.0		67.4
Jul 16		62		13			2	30	18			4	35.4	10.7	4.3	66.9
Jul 17		36		13			0	41	28			3	37.2	11.1		66.8
Jul 18		60		18			4	38	30			3	38.1	11.5	4.1	66.8
Jul 19		35		12			1	43	25			4	38.4	11.4		68.0
Jul 20		80		16			4	49	36			4	34.6	10.3		68.2
Jul 21		92		5			3	52	29			1	33.1	9.9	6.0	68.0
Jul 22		54		10			4	36	21			-1	35.8	10.7		68.0
Jul 23		87		6			3	44	32			2	39.0	11.6	5.2	67.8
Jul 24		128		11			3	61	38			0	37.0	11.1		67.3
Jul 25		83		9			3	91	65			-1	36.9	11.0	5.0	68.5
Jul 26		28		4			2	74	49			-2	34.2	10.2		68.2
Jul 27		18		7			0	51	35			4	33.9	10.1		67.3
Jul 28		23		6			1	54	27			-3	31.5	9.5	5.1	67.0
Jul 29		25		10			1	24	13			0	31.9	10.5		67.4
Jul 30		20		6			1	39	27			-1	31.8	10.5	5.3	67.2
Jul 31		24		4			2	54	35			0	32.3	10.5		67.5

TOTAL	2,041	612		60	1,018	684			41				37.8	11.4	4.8	66.7
AVG.	66	20		2	33	22			1							

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	20,732	3,850
SUMMER	4,753	1,607
TOTAL	25,485	5,457

SOCKEYE	STEELHEAD	unclipped STEELHEAD	BULL TROUT	LAMPREY
65	1,913	803	6	51

TABLE 124

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		PINK	BULL	LAMPREY	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	STEELHEAD	unclipped STEELHEAD		TROUT					
Aug 1		18		5		0	1	53	34		0	30.6	8.5	6.0	67.6
Aug 2		31		6		0	2	41	31		2	31.9	10.6		67.4
Aug 3		29		5		0	1	58	47		1	33.7	10.5		67.4
Aug 4		22		4		0	0	49	30		1	36.0	10.8	6.0	68.1
Aug 5		19		0		0	1	16	13		-3	30.0	17.0	6.0	68.4
Aug 6		14		1		0	1	21	13		1	33.2	22.0		68.8
Aug 7		14		2		0	0	35	26		-1	33.1	22.1		68.7
Aug 8		8		1		0	1	12	8		-2	30.7	18.3	6.0	68.6
Aug 9		42		15		0	2	53	33		-1	29.9	11.1		68.6
Aug 10		15		4		0	0	46	25		0	27.9	10.5		68.9
Aug 11		22		4		0	1	15	10		1	25.9	8.7	6.0	68.3
Aug 12		25		3		0	2	28	18		0	25.9	8.5		68.3
Aug 13		21		1		0	2	30	23		-1	27.7	8.7	6.0	69.0
Aug 14		34		1		0	0	25	13		0	27.7	8.7		68.8
Aug 15		45		2		0	0	38	25		2	27.6	8.7	6.0	68.1
Aug 16			28	1		0	0	26	18		1	27.5	8.6		67.4
Aug 17			30	5		0	0	16	8		0	24.4	8.6		67.4
Aug 18			47	3		0	1	19	15		0	24.4	8.6	6.0	68.5
Aug 19			51	5		0	0	12	5		0	24.8	8.6	6.0	68.3
Aug 20			38	4		0	0	30	17		1	27.8	8.7	5.6	68.2
Aug 21			34	4		0	1	23	13		1	30.3	8.7		67.8
Aug 22			75	4		0	0	12	9		0	26.3	10.4	6.0	67.7
Aug 23			93	7		0	0	37	27		3	25.3	8.6		68.8
Aug 24			102	14		0	0	15	11		0	25.5	8.6		68.7
Aug 25			119	8		1	0	32	16		1	25.6	8.7	6.0	68.6
Aug 26			92	22		0	0	33	19		-1	25.9	8.8		68.9
Aug 27			68	8		0	0	27	21		1	25.2	8.7	6.0	69.0
Aug 28			103	12		0	0	16	11		0	26.5	8.7		69.0
Aug 29			109	7		0	0	14	8		-1	24.1	8.6	6.0	68.9
Aug 30			129	26		0	0	23	13		-2	21.8	8.7		69.0
Aug 31			164	15		0	0	33	15		-1	22.9	7.0		68.7

TOTAL	359	1,282	199		1	16	888	575			3				
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AVG.	24	80	6		0	1	29	19			0	27.7	10.4	6.0	68.4
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	20,732	3,850
SUMMER	5,112	1,661
FALL	1,282	145
TOTALS	27,126	5,656

COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
1	81	2,801	1,378

BULL TROUT	LAMPREY
6	54

TABLE 125

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	BULL	LAMPREY	DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK							SOCKEYE	STEELHEAD	STEELHEAD
Sep 1			206	26	0	0	27	18			-2	22.5	0.0	6.0	68.6
Sep 2			201	37	0	0	51	34			-2	23.4	0.0		68.4
Sep 3			267	78	0	0	59	29			0	21.4	0.0	6.0	68.3
Sep 4			285	76	0	0	62	30			-1	25.0	0.0		68.2
Sep 5			273	78	0	0	57	23			0	22.0	0.0	6.0	68.1
Sep 6			237	51	0	0	57	24			0	26.3	0.0		68.6
Sep 7			268	67	0	0	70	38			-1	26.6	0.0		69.4
Sep 8			290	64	1	0	88	36			1	20.6	0.0	6.0	67.8
Sep 9			316	65	0	0	69	28			-1	20.5	0.0		67.3
Sep 10			474	163	0	1	195	85			1	22.9	0.0	5.1	68.2
Sep 11			318	106	0	0	166	53			-1	24.1	0.0	4.7	67.9
Sep 12			228	72	1	0	122	46			0	30.7	0.0		67.7
Sep 13			468	136	0	0	188	82			0	22.2	0.0		67.5
Sep 14			287	99	0	0	154	55			-2	25.5	0.0		67.8
Sep 15			275	112	0	0	152	66			0	26.3	0.0	6.0	68.1
Sep 16			419	111	0	0	135	38			0	24.7	0.0		67.8
Sep 17			598	154	1	0	268	88			1	22.8	0.0	5.6	67.8
Sep 18			596	152	0	0	295	110			0	27.0	0.0		67.9
Sep 19			617	138	0	1	351	124			0	24.7	0.0	6.0	67.8
Sep 20			685	177	2	0	295	104			1	28.8	0.0		67.5
Sep 21			644	220	2	1	316	118			0	25.4	0.0		67.2
Sep 22			532	173	1	1	386	131			0	26.5	0.0	6.0	66.9
Sep 23			685	209	9	1	508	177			0	27.6	0.0		66.6
Sep 24			822	220	35	15	850	292			0	25.9	0.0		66.4
Sep 25			716	160	53	11	1,077	355			-1	27.5	0.0		66.2
Sep 26			533	104	45	8	1,048	375			0	25.4	0.0	6.0	65.9
Sep 27			501	211	68	64	1,388	458			-1	19.6	0.0		65.6
Sep 28			300	118	69	36	808	258			-1	26.1	0.0		65.2
Sep 29			222	87	46	20	557	183			0	24.0	0.0	6.0	64.7
Sep 30			263	82	126	35	630	200			0	26.9	0.0		64.3

TOTAL			12,526	3,546	459	194	2	10,429	3,658						
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AVG.			418	118	15	6	0	348	122			0	24.8	0.0	5.8	67.3
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	20,732	3,850
SUMMER	5,112	1,661
FALL	13,808	3,691
TOTALS	39,652	9,202

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
459	195	83	13,230	5,036

BULL TROUT	LAMPREY
6	45

TABLE 126

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	BULL	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		TROUT					
Oct 1			330	149	138	20	0	714	245				25.0	0.0		63.9
Oct 2			245	119	221	53	0	712	210				25.0	0.0		63.5
Oct 3			228	90	182	20	0	716	213				22.4	0.0	6.0	63.0
Oct 4			164	41	300	67	0	869	257				21.0	0.0		62.6
Oct 5			191	53	310	64	0	787	237				20.6	0.0		62.3
Oct 6			176	47	237	64	0	828	257				28.0	0.0	6.0	62.0
Oct 7			125	61	320	35	0	663	205				21.6	0.0		61.7
Oct 8			162	96	212	99	0	655	191				19.2	0.0	4.3	61.4
Oct 9			184	136	262	176	0	769	255				25.7	0.0		61.1
Oct 10			139	41	148	104	0	382	134				28.8	0.0	6.0	60.7
Oct 11			102	64	153	62	0	607	187				27.3	0.0		60.4
Oct 12			95	57	138	44	0	391	134				21.0	0.0		60.2
Oct 13			92	49	162	41	0	432	131				20.8	0.0	6.0	59.6
Oct 14			68	38	153	31	0	485	153				23.7	0.0		59.2
Oct 15			43	29	124	27	0	326	85				19.4	0.2	4.7	58.7
Oct 16			48	21	165	35	0	546	169				21.9	0.0		58.5
Oct 17			39	9	181	35	0	461	139				15.6	0.0	6.0	58.2
Oct 18			80	24	230	54	0	574	158				16.7	0.0		58.0
Oct 19			41	25	84	35	0	353	119				12.9	0.0		57.8
Oct 20			62	36	125	73	0	446	142				15.6	0.0	6.0	57.6
Oct 21			27	17	80	21	0	266	70				20.4	0.0	5.8	57.3
Oct 22			38	14	101	23	0	505	172				16.5	0.0	6.0	57.0
Oct 23			65	39	112	36	0	491	165				24.4	0.0		56.8
Oct 24			66	37	59	18	0	348	118				21.0	0.0	6.0	56.5
Oct 25			24	14	109	15	0	408	133				15.6	0.0		56.3
Oct 26			31	15	137	28	0	470	182				21.7	0.0		55.9
Oct 27			49	17	89	26	0	444	161				18.8	0.0	6.0	55.4
Oct 28			21	4	118	18	0	263	84				18.6	0.0		54.9
Oct 29			11	6	115	14	0	230	65				19.9	0.0		54.0
Oct 30			47	8	106	26	0	313	102				21.1	0.0		53.5
Oct 31			20	6	98	19	1	382	144				26.0	0.0	6.0	53.1

TOTAL	3,013	1,362	4,969	1,383	1	15,836	5,017									
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AVG.	97	44	160	45	0	511	162						21.2	0.0	5.8	58.7
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	20,732	3,850
SUMMER	5,112	1,661
FALL	16,821	5,053
TOTALS	42,665	10,564

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY
5,428	1,578	84	29,066	10,053	0	6	45

TABLE 127

**DISCHARGE AND WATER QUALITY DATA
LITTLE GOOSE PROJECT 2019**

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Nov 1	17.3	0.0		52.5	Dec 1	14.0	0.0		43.1
Nov 2	14.9	0.0		52.1	Dec 2	19.9	0.0	6.0	42.8
Nov 3	15.7	0.0	6.0	51.8	Dec 3	17.3	0.0		42.7
Nov 4	20.6	0.0		51.5	Dec 4	19.9	0.0	6.0	42.6
Nov 5	15.6	0.0	5.9	51.2	Dec 5	15.2	0.9	6.0	42.5
Nov 6	17.3	0.0		50.9	Dec 6	20.8	0.0		42.4
Nov 7	18.1	0.0	6.0	50.6	Dec 7	16.6	0.0		42.4
Nov 8	19.1	0.0		50.3	Dec 8	10.4	0.0		42.5
Nov 9	13.2	0.0		49.9	Dec 9	18.7	0.0	6.0	42.5
Nov 10	18.4	0.0		49.8	Dec 10	19.0	0.0	6.0	42.5
Nov 11	17.5	0.0		49.6	Dec 11	20.5	0.0	6.0	42.5
Nov 12	19.7	0.0		49.3	Dec 12	15.6	0.0		42.6
Nov 13	19.9	0.0	6.0	49.1	Dec 13	20.3	0.0		42.6
Nov 14	20.8	0.0	6.0	48.9	Dec 14	22.0	0.0		42.5
Nov 15	16.4	0.0		48.0	Dec 15	20.9	0.0		42.2
Nov 16	12.8	0.0		47.5	Dec 16	26.7	0.0	6.0	41.9
Nov 17	16.2	0.0		47.4	Dec 17	39.6	0.0	6.0	41.4
Nov 18	20.2	0.0	5.5	46.8	Dec 18	22.5	0.0	6.0	40.8
Nov 19	17.4	0.0	5.7	46.7	Dec 19	15.3	0.0		40.5
Nov 20	23.4	0.0	5.4	46.1	Dec 20	11.6	0.0		40.4
Nov 21	25.8	0.0		46.5	Dec 21	22.6	0.0		40.3
Nov 22	19.6	0.0		46.1	Dec 22	18.1	0.0		40.1
Nov 23	20.0	0.0		45.7	Dec 23	18.4	0.0	6.0	40.2
Nov 24	14.4	0.0		45.2	Dec 24	24.2	0.0		40.1
Nov 25	21.6	0.0	6.0	45.2	Dec 25	19.9	0.0		40.0
Nov 26	21.0	0.0	5.8	44.9	Dec 26	23.3	0.0		39.9
Nov 27	16.9	0.0	5.8	44.4	Dec 27	23.9	0.0		39.9
Nov 28	19.4	0.0		44.1	Dec 28	21.2	0.0		40.0
Nov 29	20.3	0.0		43.7	Dec 29	19.1	0.0		40.1
Nov 30	19.9	0.0		43.4	Dec 30	21.0	0.0	6.0	40.2
					Dec 31	17.6	0.0	6.0	40.3

AVG.	18.4	0.0	5.8	48.0	AVG.	19.9	0.0	6.0	41.4
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Temperature collected at the primary dewater and recorded in °F .

TABLE 128
 YEARLY TOTALS OF SALMONIDS COUNTED OVER
 LITTLE GOOSE DAM
 1970 - 1981, 1991 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS
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
**					
1991	13,737	96,830	10	1	110,578
1992	26,746	117,698	12	0	144,456
1993	32,384	59,740	16	0	92,140
1994	5,457	45,815	44	0	51,316
1995	5,061	77,744	17	9	82,831
1996	13,538	82,203	1	0	95,742
1997	49,664	74,219	10	59	123,952
1998	19,798	63,753	5	1	83,557
1999	17,235	65,471	16	89	82,811
2000	62,886	101,030	296	313	164,525
2001	214,726	261,132	72	768	476,698
2002	119,429	215,251	38	133	334,851
2003	114,902	176,193	23	865	291,983
2004	100,998	151,406	81	3,042	255,527
2005	46,553	143,537	13	1,992	192,095
2006	44,695	124,440	26	972	170,133
2007	60,398	135,414	37	2,141	197,990
2008	108,953	168,105	594	3,806	281,458
2009	163,562	305,436	1,061	5,239	475,298
2010	189,451	193,891	1,658	2,008	387,008
2011	197,424	175,328	1,436	4,851	379,039
2012	142,119	98,278	453	2,662	243,512
2013	149,442	95,871	996	2,136	248,445
2014	185,367	144,980	2,811	21,468	354,626
2015	202,671	126,271	587	1,986	331,515
2016	129,158	95,404	962	2,518	228,042
2017	77,071	59,259	288	7,891	144,509
2018	63,903	45,584	280	1,752	111,519
2019	53,229	29,066	84	7,006	89,385
Total	3,113,303	3,983,034	15,624	84,186	7,196,147
10-Yr Avg	138,984	106,393	956	5,428	251,760

*Jacks included

**1981 was the last year visual counts were made at Little Goose Project until 1991.

Includes 2001 extended season counts for November and December 0600-1600 PST.

Includes 2002 extended season counts for February and March 0800-1600 PST and November and December 0600-1600 PST.

Includes 2003 and 2004 extended season counts for January, February, and March 0800-1600 PST and November and December 0600-1600 PST.

Includes 2016 extended season counts for March, November, and December 0400 - 2000 PST.

TABLE 129

**MONTHLY COUNT OF CHINOOK SALMON
LITTLE GOOSE DAM; 1970-1981, 1991-2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
1970				6,765	32,616	15,204	11,200	1,529	4,508	965	178	6	72,971
1971				133	16,012	24,096	14,473	707	5,319	606	55	1	61,402
1972				2,226	37,991	5,585	14,747	1,614	1,445	576	27		64,211
1973				17,490	34,570	10,661	4,344	520	2,472	528	19	1	70,605
1974				136	14,224	4,451	6,213	556	749	449	9		26,787
1975				152	14,161	6,487	4,182	540	1,143	295			26,960
1976				612	17,403	9,470	3,575	302	642	355			32,359
1977				16,973	19,936	6,707	4,181	182	842	355			49,176
1978				8,190	29,195	10,676	6,172	717	621	498			56,069
1979				947	4,436	4,396	1,391	254	802	289			12,515
1980				508	5,250	2,560	1,488	191	368	240			10,605
1981				2,798	9,399	3,214	2,217	108	724	626			19,086
**													
1991				469	4,968	5,066	1,949	85	715	394	91		13,737
1992				8,000	11,108	4,932	1,217	94	959	331	105		26,746
1993				2,032	16,308	10,018	2,425	241	989	317	54		32,384
1994				294	2,307	1,281	282	98	540	610	45		5,457
1995				82	1,117	1,041	481	146	1,179	1,015			5,061
1996				57	4,872	4,695	1,450	280	1,572	612			13,538
1997				519	26,980	16,769	3,007	296	1,302	791			49,664
1998				1,327	6,787	5,655	1,422	207	2,020	2,380			19,798
1999				73	3,990	4,878	1,937	432	3,787	2,138			17,235
2000				7,510	31,034	11,091	2,680	749	5,148	4,674			62,886
2001				96,386	61,247	31,686	6,792	1,082	12,222	4,953	356	2	214,726
2002		1		1,807	60,391	32,782	6,846	1,493	12,631	3,374	96	8	119,429
2003		2		32,082	29,615	26,129	5,838	829	14,048	5,917	433	9	114,902
2004				21,955	34,443	16,941	3,946	473	19,087	3,888	264	1	100,998
2005				599	16,952	11,484	3,638	679	10,362	2,839			46,553
2006				10	14,632	10,859	4,432	1,108	9,228	4,426			44,695
2007				998	21,050	14,741	4,650	1,154	12,109	5,696			60,398
2008				1,294	39,284	35,674	7,926	2,252	18,892	3,631			108,953
2009				173	52,369	43,467	11,800	4,289	44,304	7,160			163,562
2010				14,935	72,430	37,156	9,058	2,761	39,443	13,668			189,451
2011				145	60,525	67,803	21,088	5,064	31,454	11,345			197,424
2012				113	58,343	22,568	6,156	3,227	43,726	7,986			142,119
2013				611	43,290	19,104	8,331	7,440	60,363	10,303			149,442
2014				2,321	74,676	25,209	12,744	3,873	56,194	10,350			185,367
2015				21,188	80,186	23,558	7,211	6,218	51,580	12,730			202,671
2016		3		1,201	56,569	18,814	5,413	6,530	34,090	5,871	664	3	129,158
2017				61	14,893	28,020	4,507	1,479	22,135	5,976			77,071
2018				54	19,932	20,021	2,046	2,149	15,659	4,042			63,903
2019				19	15,892	12,378	2,653	1,840	16,072	4,375			53,229
Total		6		273,245	1,171,383	667,327	226,108	63,788	561,445	147,574	2,396	31	3,113,303
10-Year Average				4,065	49,674	27,463	7,921	4,058	37,072	8,665			138,984

**1981 was the last year visual counts were made at Little Goose Project until 1991.

*Jacks included

Includes 2001 extended season counts for November and December 0600-1600 PST.

Includes 2002 extended season counts for February and March 0800-1600 PST and November and December 0600-1600 PST.

Includes 2003 and 2004 extended season counts for January, February, and March 0800-1600 PST and November and December 0600-1600 PST.

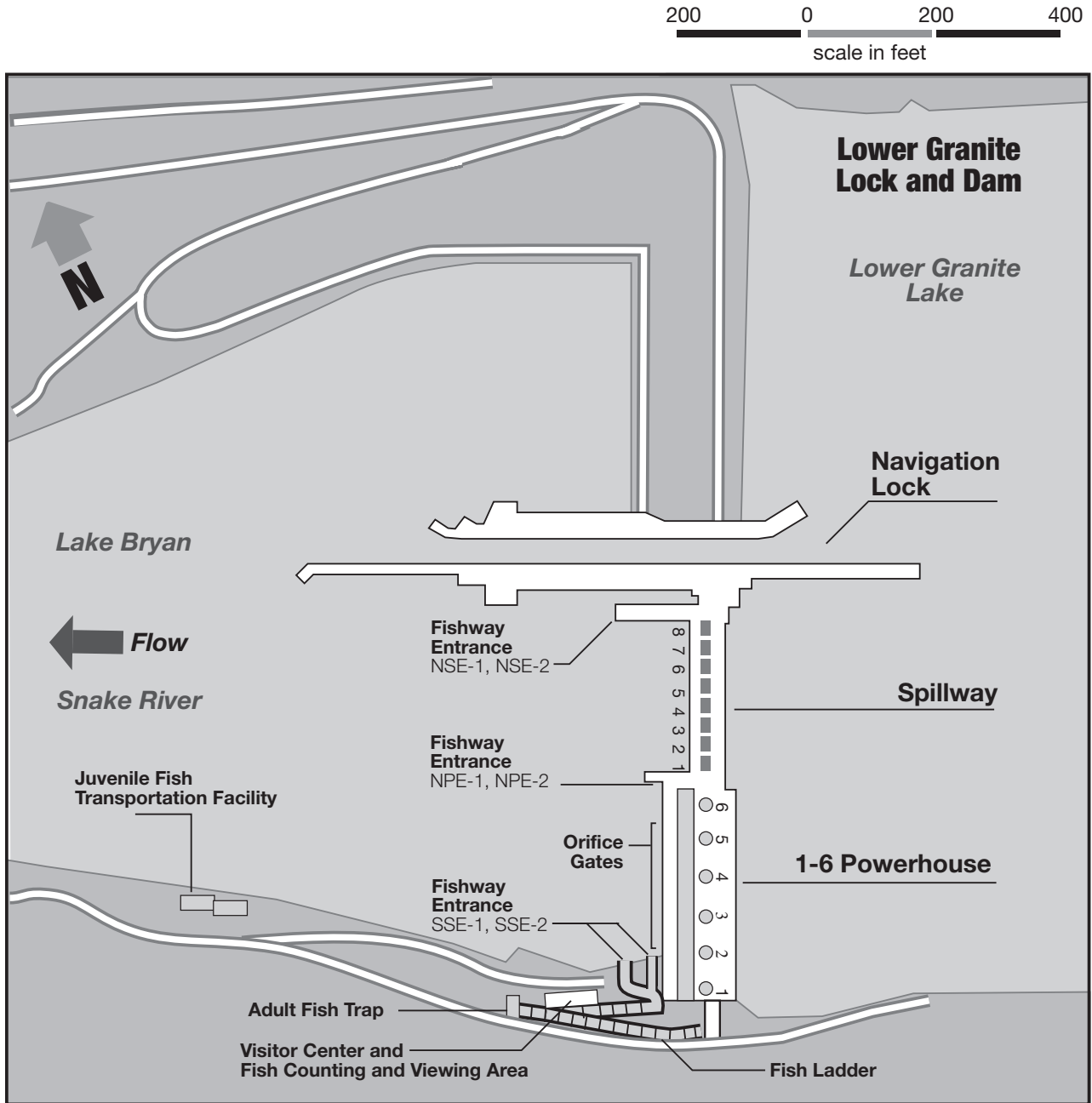
Includes 2016 extended season counts for March, November, and December 0400-2000 PST.

TABLE 130
MONTHLY COUNT OF STEELHEAD
LITTLE GOOSE DAM
1970 - 1981, 1991 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1970			3,346	4,148	1,762	167	1,485	7,487	27,898	11,931	1,136	280	59,640
1971			586	1,968	1,319	85	1,286	3,337	38,988	19,674	2,161	609	70,013
1972	248	251	943	2,565	720	54	1,209	6,637	25,089	24,323	1,258	341	63,638
1973	133	80	1,039	2,051	829	65	1,249	2,856	16,650	12,420	1,129	319	38,820
1974	191	294	543	1,105	278	5	726	2,203	3,970	4,721	583	165	14,784
1975	96	75	70	732	472	16	390	3,433	6,230	3,711			15,225
1976				1,052	345	133	678	3,556	8,988	6,142			20,894
1977				1,340	272	155	1,951	2,738	18,753	22,179			47,388
1978				1,625	216	20	593	2,617	11,547	8,309			24,927
1979				742	222	16	1,614	2,326	5,278	10,851			21,049
1980				3,063	668	43	821	3,858	15,305	14,869			38,627
1981				1,360	424	119	1,740	2,024	11,559	21,454			38,680
**													
1991				804	266	99	1,637	559	31,818	53,734	7,913		96,830
1992				472	189	141	997	2,652	54,585	48,870	9,792		117,698
1993				1,569	343	322	3,601	5,891	12,770	32,357	2,887		59,740
1994				771	148	162	1,522	2,239	8,828	25,830	6,315		45,815
1995				1,130	232	107	1,644	5,743	31,493	37,395			77,744
1996				936	99	105	1,489	7,560	40,468	31,546			82,203
1997				1,208	197	92	1,919	6,629	25,883	38,291			74,219
1998				1,924	107	139	1,090	912	12,939	46,642			63,753
1999				841	78	61	1,796	7,444	33,818	21,433			65,471
2000				841	112	384	3,355	5,361	54,244	36,733			101,030
2001				1,818	179	1,505	9,814	17,590	111,452	90,311	20,313	8150	261,132
2002		1,387	3,342	5,873	294	455	5,853	21,066	86,596	83,357	5,483	1545	215,251
2003	310	2,067	6,744	2,001	109	586	4,741	6,701	81,173	65,715	5,020	1026	176,193
2004	106	911	2,702	1,814	87	524	3,133	4,118	83,925	48,491	4,326	1269	151,406
2005				896	128	494	2,528	5,165	62,611	71,715			143,537
2006				2,569	120	129	978	3,547	54,727	62,370			124,440
2007				2,096	205	339	2,062	4,560	63,517	62,635			135,414
2008				2,127	490	179	5,770	15,499	93,240	50,800			168,105
2009				4,839	538	595	5,655	13,821	160,927	119,061			305,436
2010				2,755	369	632	9,165	19,891	103,207	57,872			193,891
2011				5,505	697	151	4,283	29,183	83,281	52,228			175,328
2012				3,416	510	184	1,419	3,031	52,470	37,248			98,278
2013				2,024	184	180	1,773	6,888	41,043	43,779			95,871
2014				1,175	385	534	6,113	7,120	73,440	56,213			144,980
2015				1,308	183	158	948	4,639	66,554	52,481			126,271
2016			2,077	1,151	181	252	2,751	3,278	36,658	43,067	5,267	722	95,404
2017				1,338	149	23	368	565	25,303	31,513			59,259
2018				1,124	97	107	1,059	753	21,412	21,032			45,584
2019				735	130	30	1,018	888	10,429	15,836			29,066
Total	1,084	5,065	21,392	76,811	14,333	9,547	102,223	256,365	1,809,066	1,599,139	73,583	14,426	3,983,034
10-Year Average				2,053	289	225	2,890	7,624	51,380	41,127			106,393

** 1981 was the last year visual counts were made at Little Goose Project until 1991.
Includes 2001 extended season counts for November and December 0600-1600 PST.
Includes 2002 extended season counts for February and March 0800-1600 PST and November and December 0600-1600 PST.
Includes 2003 and 2004 extended season counts for January, February, and March 0800-1600 PST and November and December 0600-1600 PST.
Includes 2016 extended season counts for March, November, and December 0400-2000 PST.

Plate 9 Lower Granite Lock and Dam



LOWER GRANITE DAM FISHWAY SUMMARY 2019

FISH COUNTING SCHEDULE

1 Jan – 28 Feb	No counting.
1 Mar – 31 Mar	Video counting daily 0600 – 1600 hours PST.
1 Apr – 31 Oct	Visual counting daily 0400 – 2000 hours PST.
15 Jun – 30 Sep	Night video counts for sockeye 2000 – 0400 hours PST.
1 Nov – 31 Dec	Video counting daily 0600 – 1600 hours PST.

FISH LADDER OPERATING SCHEDULE

1 Jan	Ladder in service
2 Jan – 14 Feb	Dewatered for annual maintenance
14 Feb – 31 Dec	Ladder in service

FISHWAY ACTIVITIES

An issue with the fish count backboard was identified and the adult fish ladder was dewatered for repairs from 1200-1615 hours May 2. Fish ladder water temperatures were monitored hourly at the ladder exit, diffuser 14, turn pool, and junction pool. These temperatures are posted at http://www.nwd-wc.usace.army.mil/dd/nww/fl_temps/www/index.html. The temperature control system pumps were operated from June 14 until September 25.

Substrate media at the ladder exit pool was examined monthly for zebra and quagga mussels from March through December. No mussels were found.

Fish ladder AWS pumps were out of service for annual maintenance from December 31, 2018–February 14. AWS Fish pump 1 outage was extended to May 7 for lower guide bearing replacement. All 3 ASW supply pumps were removed from service from 1230 hours May 1 until 1624 hours May 2 for fish count backboard repair. Pump 1 and pump 2 stop logs were swapped and pump 1 testing was completed and returned to service during counting window backboard repair. The remainder of the season was operated with AWS pumps 1 and 3. AWS pumps 1 and 3 were temporarily removed from service from 1715 hours December 17 to 1700 hours on December 19 to support emergency repair work for leaks encountered during spillway 1 PIT tag array installation.

Lower Granite adult fish trap was watered up on March 28 and operated April 4 – November 14. The adult trap was dewatered during ladder fish count backboard repair May 2. Adult fish trap sampling did not occur from 0806 hours September 6 through 1600 hours September 12 due to NOAA personnel having concerns with adult trap water temperatures reaching 70° F. Adult trap average daily water temperature strings ranged between 68.2°F and 70.9°F during this period. Adult fall Chinook were collected and transported by Nez Perce Tribe and WDFW August 7 –

October 24 for hatchery broodstock. Adult Coho for Nez Perce run reconstruction were collected from October 2 – 25. IDFG collected and transported B-run steelhead from the adult trap October 2 – November 12.

The juvenile fish facility was operated for fish transport/bypass from March 25 – November 1. The juvenile fish facility was dewatered November 1 and the system was placed into primary bypass. The primary dewatering structure and orifice collection gallery were dewatered on December 18.

TABLE 131

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LOWER GRANITE DAM
2019

DAYTIME-Live

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*			0	12	13,623	12,479	3,009	1,553	15,861	4,283	572	15	51,407
STEELHEAD			1,607	1,175	98	18	953	1,060	9,609	17,460	2,831	283	35,094
SOCKEYE						1	49	31					81
COHO*									433	7,044	588	21	8,086
PINK													0
TOTAL			1,607	1,187	13,721	12,498	4,011	2,644	25,903	28,787	3,991	319	94,668
SHAD					1	448	14,923	973					16,345
LAMPREY				1	0	4	39	39	11				94
STURGEON													0
BULL TROUT													0

NIGHT-Video

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*						234	143	16	390				783
STEELHEAD						2	27	19	798				846
SOCKEYE						6	12	4	1				23
COHO*									29				29
PINK													0
TOTAL						242	182	39	1,218				1,681
LAMPREY						4	259	271	87				621
BULL TROUT													0

*Jacks included

Note: Count schedule found in the project narrative.
For 24 hour annual totals add the daytime and night totals.

TABLE 132
DISCHARGE AND WATER DATA
LOWER GRANITE PROJECT 2019

JANUARY				FEBRUARY					
	DISCH KCFS	SPILL KCFS	TURBIDITY			DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI*	DEG F*				SECCHI*	DEG F*
Jan 1	21.5	0.0			Feb 1	21.7	0.0		
Jan 2	21.1	0.0			Feb 2	20.7	0.0		
Jan 3	19.8	0.0			Feb 3	22.9	0.0		
Jan 4	20.1	0.0			Feb 4	34.8	0.0		
Jan 5	19.7	0.0			Feb 5	28.4	0.0		
Jan 6	18.6	0.0			Feb 6	29.0	0.0		
Jan 7	22.3	0.0			Feb 7	28.8	0.0		
Jan 8	21.1	0.0			Feb 8	29.1	0.0		
Jan 9	21.0	0.0			Feb 9	23.7	0.0		
Jan 10	22.8	0.0			Feb 10	25.0	0.0		
Jan 11	20.0	0.0			Feb 11	25.2	0.0		
Jan 12	20.8	0.0			Feb 12	27.2	0.0		
Jan 13	20.4	0.0			Feb 13	26.6	0.0		
Jan 14	20.7	0.0			Feb 14	26.3	0.0		
Jan 15	19.6	0.0			Feb 15	25.5	0.0		
Jan 16	19.4	0.0			Feb 16	27.3	0.0		
Jan 17	22.4	0.0			Feb 17	25.9	0.0		
Jan 18	20.4	0.0			Feb 18	26.3	0.0		
Jan 19	20.1	0.0			Feb 19	28.8	0.0		
Jan 20	20.0	0.0			Feb 20	28.8	0.0		
Jan 21	22.8	0.0			Feb 21	26.8	0.0		
Jan 22	25.0	0.0			Feb 22	30.4	0.0		
Jan 23	23.9	0.0			Feb 23	25.8	0.0		
Jan 24	25.7	0.0			Feb 24	27.3	0.0		
Jan 25	23.3	0.0			Feb 25	31.1	0.0		
Jan 26	26.1	0.0			Feb 26	29.0	0.0		
Jan 27	21.2	0.0			Feb 27	29.9	0.0		
Jan 28	23.0	0.0			Feb 28	32.4	0.0		
Jan 29	19.7	0.0							
Jan 30	27.6	0.0							
Jan 31	22.3	0.0							
*data unavailable									
AVG.	21.7	0.0			AVG.	27.3	0.0		

TABLE 133
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

MARCH 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD						SECCHI	DEG F	
Mar 1				1				6	0				35.3	0.0	*	*	
Mar 2				0				7	3				33.9	0.0	*	*	
Mar 3				0				17	4				35.3	0.0	*	*	
Mar 4				0				6	1				35.1	0.0	*	*	
Mar 5				0				2	0				38.3	0.0	*	*	
Mar 6				0				1	0				42.9	0.0	*	*	
Mar 7				0				5	0				32.4	0.0	*	*	
Mar 8				0				4	2				33.1	0.0	*	*	
Mar 9				0				10	4				37.8	0.0	*	*	
Mar 10				0				26	7				31.5	0.0	*	*	
Mar 11				-1				9	2				40.0	0.0	*	*	
Mar 12				0				14	3				34.8	0.0	*	*	
Mar 13				0				18	5				33.4	0.0	*	*	
Mar 14				0				8	2				36.7	0.0	*	*	
Mar 15				0				35	7				40.0	0.0	*	*	
Mar 16				0				36	9				37.5	0.0	*	*	
Mar 17				0				35	11				43.2	0.0	*	*	
Mar 18				0				16	7				42.8	0.0	*	*	
Mar 19				0				7	4				46.1	0.0	*	*	
Mar 20				0				-6	6				46.9	0.0	4.2	42.0	
Mar 21				0				64	23				52.0	0.0	3.4	42.1	
Mar 22				0				42	17				61.8	0.0	3.5	42.8	
Mar 23				0				306	104				61.7	0.0	3.9	43.3	
Mar 24				0				216	87				64.8	0.0	2.6	43.9	
Mar 25				0				117	42				74.3	0.0	2.5	44.0	
Mar 26				0				161	49				67.4	0.1	1.9	*	
Mar 27				0				77	26				82.3	0.0	1.3	44.0	
Mar 28				0				103	46				76.9	0.0	1.5	44.1	
Mar 29				0				86	26				76.4	0.0	1.2	44.6	
Mar 30				0				83	32				78.3	0.0	1.0	44.7	
Mar 31				0				96	42				76.5	0.0	1.7	44.0	
TOTAL				0				1,607	571								*data unavailable
AVG.				0				52	18				49.3	0.0	2.4	43.6	

Note: Video counting began on March 5. The counts are 16-hour counts and occurred between 0400-2000 PST.

TABLE 134
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD						SECCHI	DEG F	
Apr 1	0			1				80	38		0		68.9	0.0	1.7	44.5	
Apr 2	0			0				94	44		0		60.2	0.0	2.0	45.8	
Apr 3	0			0				92	38		0		62.6	39.2	2.1	46.7	
Apr 4	0			0				118	46		0		66.4	40.3	2.1	46.2	
Apr 5	0			0				74	43		1		73.8	42.2	3.0	47.5	
Apr 6	0			0				84	30		0		80.3	42.0	3.2	47.8	
Apr 7	0			0				75	47		0		85.5	41.9	2.7	47.5	
Apr 8	0			0				49	23		0		120.2	44.6	2.6	47.8	
Apr 9	0			0				34	14		0		159.3	58.0	1.3	46.5	
Apr 10	0			0				8	4		0		195.0	85.6	0.5	45.8	
Apr 11	0			0				7	1		0		164.9	57.9	0.4	46.0	
Apr 12	0			0				28	8		0		135.0	45.8	0.5	45.8	
Apr 13	0			0				37	17		0		123.0	41.7	1.0	45.9	
Apr 14	0			0				43	17		0		114.5	42.4	1.0	46.7	
Apr 15	0			0				40	18		0		113.5	42.1	1.5	47.5	
Apr 16	0			0				28	10		0		110.4	42.4	1.5	47.8	
Apr 17	0			0				35	16		0		105.7	42.3	1.9	48.5	
Apr 18	0			0				30	18		0		102.2	41.8	2.5	49.0	
Apr 19	0			0				36	11		0		108.0	41.6	2.4	49.5	
Apr 20	0			0				21	7		0		125.7	50.0	2.9	50.5	
Apr 21	0			0				28	14		0		154.2	65.0	2.4	52.0	
Apr 22	0			0				16	4		0		160.6	70.9	0.8	50.5	
Apr 23	1			0				25	11		0		157.8	68.4	1.1	50.0	
Apr 24	0			0				30	17		0		156.1	66.7	1.7	50.0	
Apr 25	0			0				19	11		0		162.9	68.1	1.9	50.5	
Apr 26	1			0				11	4		0		157.2	52.0	2.0	50.0	
Apr 27	2			0				7	2		0		154.5	50.3	2.2	50.0	
Apr 28	2			1				14	10		0		139.2	46.0	2.4	49.0	
Apr 29	2			0				5	4		0		135.7	44.9	2.8	49.0	
Apr 30	2			0				7	5		0		122.4	42.1	2.8	49.0	
TOTAL	10			2				1,175	532		1						
AVG.	0			0				39	18		0		122.5	47.2	1.9	48.1	
RUN YEAR TOTALS TO DATE	CHINOOK ADULT		CHINOOK JACK		STEELHEAD		unclipped STEELHEAD		LAMPREY								
	10		2		2,782		1,103		1								

Note: Visual counts occurred April 1 through October 31. The counts are 16-hour counts and occurred between 0400-2000 PST.

TABLE 135

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL													
May 1	2			0				10	6	0			115.7	41.6	3.5	49.5
May 2	4			0				6	2	0			108.6	41.2	3.9	49.5
May 3	11			1				15	13	0			103.4	41.4	3.6	49.5
May 4	8			2				9	7	0			103.9	41.6	3.8	50.0
May 5	13			2				8	6	0			104.9	41.3	4.3	52.0
May 6	22			0				6	5	0			109.9	41.5	4.5	52.6
May 7	42			0				6	4	0			103.2	40.6	4.5	53.5
May 8	51			0				4	4	0			109.6	40.8	4.9	54.0
May 9	41			1				5	4	0			112.3	42.1	3.9	54.0
May 10	55			0				4	4	0			106.6	41.7	4.0	52.5
May 11	186			9				4	4	0			109.2	41.8	4.1	53.0
May 12	274			2				0	0	0			116.4	41.6	4.2	53.0
May 13	500			26				1	1	0			124.0	42.8	3.6	52.5
May 14	802			19				4	4	0			126.8	41.2	4.1	53.5
May 15	990			37				5	5	0			136.4	45.1	3.5	53.0
May 16	830			36				4	4	0			141.9	46.3	3.4	52.4
May 17	813			39				1	0	0			145.0	46.0	2.8	52.0
May 18	903			57				0	0	0			164.4	56.9	2.5	51.5
May 19	351			41				1	1	0			145.7	47.6	2.2	51.0
May 20	210			51				1	1	0			130.6	42.0	2.4	50.5
May 21	492			94				0	0	0			126.1	40.0	2.7	51.0
May 22	900			134				1	1	0			121.5	40.1	3.2	51.5
May 23	905			105				1	1	0			123.2	40.3	3.5	52.0
May 24	601			119				0	0	0			118.5	47.7	3.5	52.0
May 25	534			124				1	1	0			119.6	41.1	4.5	52.0
May 26	282			105				0	0	0			117.9	41.0	4.0	53.1
May 27	280			146				1	1	0			126.1	41.0	4.4	53.4
May 28	76			80				0	0	0			126.5	41.2	3.6	54.0
May 29	125			140				0	0	0			125.7	41.1	3.9	54.7
May 30	1,084			256				0	0	0			132.9	42.3	4.0	55.2
May 31	452			158				0	0	1			139.6	45.8	4.1	56.3
TOTAL	11,839			1,784				98	79	1						
AVG.	382			58				3	3	0			122.5	42.8	3.7	52.4
RUN YEAR		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY					
TOTALS TO DATE																
SPRING		11,849	1,786					2,880	1,182	1	1					

TABLE 136
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD						SECCHI	DEG F
Jun 1	521			195			0	0	0	0	0		148.3	49.9	3.8	56.8
Jun 2	386			221			0	0	0	0	0		151.0	49.3	3.7	57.0
Jun 3	322			179			0	1	1	0	0		153.8	48.4	3.9	57.0
Jun 4	477			171			0	0	0	0	0		154.3	48.7	3.6	57.6
Jun 5	558			121			0	0	0	0	0		150.1	46.9	3.5	57.9
Jun 6	488			137			0	-1	0	0	0		142.2	45.6	3.5	57.9
Jun 7	536			140			0	0	0	0	0		134.1	42.7	3.5	58.0
Jun 8	1,078			166			0	0	0	0	1		124.7	39.8	4.1	57.0
Jun 9	658			112			0	0	0	0	0		105.2	40.1	4.2	56.0
Jun 10	525			121			0	0	0	0	0		96.5	40.4	3.9	56.0
Jun 11	402			67			0	0	0	0	0		88.7	41.3	4.4	56.0
Jun 12	251			85			0	0	0	0	0		84.5	41.0	4.6	57.0
Jun 13	286			77			0	0	0	0	0		86.3	40.3	4.6	58.0
Jun 14	246			70			0	0	0	0	0		86.6	40.7	4.4	60.0
Jun 15	208			78			0	0	0	1	0		85.7	41.8	5.0	60.5
Jun 16	156			74			0	2	2	0	0		82.3	41.5	5.0	62.0
Jun 17	208			70			0	1	1	0	2		80.0	41.1	5.0	62.5
Jun 18		472		95			0	0	0	0	0		76.3	41.5	5.0	62.5
Jun 19		296		94			0	2	2	0	0		69.9	41.3	5.0	63.0
Jun 20		170		75			0	0	0	1	0		67.4	41.9	4.6	62.5
Jun 21		91		80			0	0	0	1	0		64.2	18.6	4.3	62.0
Jun 22		135		76			0	1	0	2	0		68.5	18.5	4.5	62.0
Jun 23		255		97			0	1	1	5	0		62.4	18.5	4.6	60.5
Jun 24		224		92			0	0	0	31	0		56.6	18.5	4.7	60.5
Jun 25		112		61			0	2	1	102	0		54.2	18.4	5.0	60.0
Jun 26		71		56			0	3	3	40	0		53.5	18.3	5.0	60.0
Jun 27		61		61			0	3	3	50	0		51.3	18.6	4.6	60.5
Jun 28		86		88			0	1	1	86	1		47.9	19.0	5.0	61.0
Jun 29		74		46			1	0	0	46	0		43.7	18.9	5.0	61.9
Jun 30		60		61			0	2	1	83	0		45.4	18.9	5.0	61.0
TOTAL	7,306	2,107		3,066			1	18	16	448	4					
AVG.	430	162		102			0	1	1	15	0		90.5	35.0	4.4	59.5
RUN YEAR																
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY					
SPRING		19,155	3,870				1	2,898	1,198	449	5					
SUMMER		2,107	982													
TOTAL		21,262	4,852													

TABLE 137
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL													
Jul 1		85		68			0	1	2	77	1		40.6	18.9	5.0	62.0
Jul 2		73		63			2	7	6	164	0		42.2	18.8	5.0	62.5
Jul 3		84		49			3	3	2	225	0		38.4	18.8	5.0	63.0
Jul 4		62		47			0	11	11	516	1		41.8	18.8	5.0	65.0
Jul 5		116		75			1	4	2	504	0		41.3	18.8	5.0	66.0
Jul 6		86		93			1	5	3	774	0		43.4	18.8	5.0	66.0
Jul 7		97		59			0	13	13	1,082	1		44.6	18.8	5.0	65.5
Jul 8		79		40			0	7	4	747	0		43.3	18.8	5.0	66.0
Jul 9		47		45			0	16	9	677	2		40.2	18.8	5.0	66.0
Jul 10		62		54			1	11	9	1,050	1		42.2	18.9	5.0	65.0
Jul 11		71		60			1	12	10	1,332	0		45.0	18.8	5.0	64.0
Jul 12		53		38			1	15	15	966	2		42.2	18.8	5.0	64.0
Jul 13		63		55			1	14	14	729	3		42.3	18.9	5.0	64.5
Jul 14		85		41			4	23	18	674	2		39.2	18.8	5.0	64.0
Jul 15		58		35			0	20	14	602	2		38.3	18.7	5.0	65.0
Jul 16		38		22			2	26	19	596	0		38.1	18.8	5.0	65.5
Jul 17		42		42			1	36	20	469	3		37.2	18.8	5.0	65.5
Jul 18		23		12			3	41	26	264	3		39.7	18.4	5.0	65.0
Jul 19		42		26			1	51	41	330	1		37.0	18.4	5.0	65.5
Jul 20		55		32			1	41	28	439	4		35.2	18.5	5.0	65.5
Jul 21		38		12			1	46	35	511	0		34.4	18.5	5.0	65.0
Jul 22		55		12			2	37	29	485	1		34.9	18.5	5.0	64.0
Jul 23		65		9			1	22	14	177	2		40.1	18.5	5.0	64.5
Jul 24		37		14			5	43	33	139	2		35.4	18.4	5.0	64.0
Jul 25		97		23			2	68	47	173	2		33.7	18.4	5.0	63.5
Jul 26		78		7			3	59	42	310	4		34.1	18.4	5.0	64.5
Jul 27		82		11			5	65	42	337	0		34.4	18.5	5.0	65.5
Jul 28		50		6			4	94	69	154	0		31.1	18.3	5.0	64.2
Jul 29		37		5			1	56	31	128	0		31.4	18.4	5.0	65.0
Jul 30		39		11			0	45	33	115	1		31.3	18.4	5.0	64.0
Jul 31		39		5			2	61	33	177	1		31.0	17.4	5.0	64.0
TOTAL		1,938		1,071			49	953	674	14,923	39					
AVG.		63		35			2	31	22	481	1		38.2	18.6	5.0	64.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	19,155	3,870
SUMMER	4,045	2,053
TOTAL	23,200	5,923

SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
50	3,851	1,872	15,372	44

TABLE 138
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL													
Aug 1		30		7			3	48	29	196	2		32.9	18.7	5.0	65.0
Aug 2		28		6			1	37	21	80	0		32.2	18.8	5.0	65.0
Aug 3		32		8			1	54	31	109	1		32.7	18.8	5.0	64.0
Aug 4		20		10			3	42	32	42	1		34.6	18.8	5.0	65.0
Aug 5		26		10			0	45	27	43	2		32.7	18.8	5.0	65.5
Aug 6		23		0			3	36	23	49	1		34.4	18.7	5.0	66.0
Aug 7		29		4			0	43	22	117	3		31.5	18.4	5.0	65.0
Aug 8		16		0			4	31	25	93	0		32.9	18.4	5.0	65.5
Aug 9		4		1			0	25	19	13	2		31.3	18.0	5.0	64.0
Aug 10		14		3			0	36	27	17	1		28.0	14.9	5.0	64.0
Aug 11		28		5			1	19	11	27	0		25.8	13.1	5.0	64.0
Aug 12		17		2			1	28	24	34	0		28.6	19.0	5.0	64.0
Aug 13		17		5			4	25	19	9	0		31.2	20.9	5.0	62.0
Aug 14		23		5			0	31	17	3	2		29.3	18.5	5.0	62.5
Aug 15		22		3			1	31	21	13	0		29.7	18.4	5.0	62.0
Aug 16		36		0			4	31	22	10	2		26.9	17.3	5.0	62.0
Aug 17		51		9			1	77	51	28	11		25.9	12.9	5.0	64.0
Aug 18			30	5			0	47	35	51	1		25.1	12.3	5.0	64.5
Aug 19			37	6			1	27	20	21	2		25.4	12.6	5.0	65.0
Aug 20			40	7			1	30	23	8	2		30.2	17.5	5.0	65.0
Aug 21			30	3			1	21	11	7	1		31.5	18.6	5.0	65.5
Aug 22			35	2			0	36	21	0	0		29.2	16.3	5.0	65.0
Aug 23			31	4			0	36	27	1	1		25.1	12.0	5.0	66.0
Aug 24			48	4			0	16	10	1	0		25.4	12.3	5.0	66.0
Aug 25			105	13			0	34	15	3	-1		26.8	13.7	5.0	66.0
Aug 26			115	7			1	30	23	-2	2		26.3	16.6	5.0	64.0
Aug 27			65	19			0	27	19	1	2		26.5	13.6	5.0	65.5
Aug 28			76	20			0	33	16	-1	0		26.3	13.5	5.0	66.0
Aug 29			102	21			0	38	20	0	0		24.4	11.7	5.0	65.0
Aug 30			63	23			0	25	16	0	1		24.6	11.8	5.0	65.0
Aug 31			132	16			0	21	12	0	0		24.7	11.8	5.0	65.0
TOTAL		416	909	228			31	1,060	689	973	39					
AVG		24	65	7			1	34	22	31	1		28.8	16.0	5.0	64.6

RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
	SPRING	19,155	3,870	81	4,911	2,561	16,345
SUMMER	4,461	2,131					
FALL	909	150					
TOTAL	24,525	6,151					

TABLE 139
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped	SHAD	LAMPREY	BULL	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD			TROUT				
Sep 1			95	18	0	0		17	8		3		23.2	0.0	5.0	65.0
Sep 2			197	26	0	0		19	13		2		23.2	0.0	5.0	65.0
Sep 3			121	20	0	0		23	13		0		24.7	0.0	5.0	66.0
Sep 4			96	37	0	0		19	14		0		24.6	0.0	5.0	66.5
Sep 5			209	76	0	0		33	22		2		29.0	0.0	5.0	66.0
Sep 6			258	80	0	0		45	25		0		28.6	0.0	5.0	68.0
Sep 7			146	39	0	0		51	26		0		25.0	0.0	5.0	68.0
Sep 8			324	88	0	0		63	31		0		26.2	0.0	5.0	68.0
Sep 9			302	77	0	0		55	30		0		23.4	0.0	5.0	68.0
Sep 10			379	113	0	0		159	72		1		25.2	0.0	5.0	68.0
Sep 11			433	97	0	0		113	45		1		27.6	0.0	5.0	67.5
Sep 12			393	148	0	0		150	62		0		28.6	0.0	5.0	68.0
Sep 13			414	147	0	0		161	73		1		23.2	0.0	5.0	68.0
Sep 14			376	143	2	0		229	88		0		26.2	0.0	5.0	66.5
Sep 15			276	122	0	0		150	68		0		26.9	0.0	5.0	66.0
Sep 16			265	164	0	0		170	55		0		28.2	0.0	5.0	66.0
Sep 17			268	82	0	0		129	44		1		26.8	0.0	5.0	66.0
Sep 18			508	188	3	0		153	57		0		27.1	0.0	5.0	66.0
Sep 19			660	222	4	0		322	124		0		27.7	0.0	5.0	66.0
Sep 20			709	255	1	0		458	155		0		26.9	0.0	5.0	65.5
Sep 21			648	183	3	0		437	143		-1		27.3	0.0	5.0	65.0
Sep 22			534	161	4	0		335	119		0		24.0	0.0	5.0	65.5
Sep 23			632	231	12	0		423	142		0		26.9	0.3	5.0	64.5
Sep 24			786	257	20	2		626	218		0		26.7	0.0	5.0	64.0
Sep 25			756	325	25	5		732	249		1		27.6	0.0	5.0	64.0
Sep 26			566	171	38	2		717	239		0		26.2	0.0	5.0	62.0
Sep 27			596	244	59	6		1,310	419		0		25.5	0.0	5.0	64.0
Sep 28			458	226	69	10		1,184	414		0		24.2	0.0	5.0	63.8
Sep 29			198	96	94	6		738	228		0		23.4	0.0	5.0	62.5
Sep 30			133	89	66	2		588	157		0		25.0	0.0	5.0	62.5
TOTAL			11,736	4,125	400	33		9,609	3,353		11					
AVG.			391	138	13	1		320	112		0		26.0	0.0	5.0	65.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	19,155	3,870
SUMMER	4,461	2,131
FALL	12,645	4,275
TOTAL	36,261	10,276

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
400	33	81	14,520	5,914	16,345	94

TABLE 140
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL													
Oct 1			274	134	147	4		878	258				26.4	0.0	5.0	62.0
Oct 2			234	106	156	4		865	263				26.5	0.0	5.0	62.0
Oct 3			249	119	272	6		919	277				22.5	0.0	5.0	62.0
Oct 4			201	106	168	15		672	205				21.3	0.0	5.0	60.5
Oct 5			209	118	292	5		1,020	299				23.5	0.0	5.0	60.0
Oct 6			126	78	245	14		830	220				28.4	0.0	5.0	60.0
Oct 7			157	97	276	14		755	220				23.9	0.0	5.0	60.0
Oct 8			170	120	517	7		1,101	339				27.4	0.0	5.0	59.0
Oct 9			84	65	275	8		665	202				23.3	0.0	5.0	58.5
Oct 10			111	62	361	4		633	206				27.6	0.0	5.0	58.0
Oct 11			103	73	402	39		844	234				27.8	0.0	5.0	58.0
Oct 12			92	45	309	22		529	153				21.3	0.0	5.0	57.0
Oct 13			59	40	225	13		452	118				21.2	0.0	5.0	56.5
Oct 14			55	44	190	12		404	116				24.0	0.0	5.0	56.5
Oct 15			55	49	241	9		462	145				18.3	0.0	5.0	56.0
Oct 16			50	43	227	16		502	156				21.7	0.0	5.0	56.0
Oct 17			43	28	224	13		490	158				16.2	0.0	5.0	55.5
Oct 18			44	33	354	5		746	219				17.5	0.0	5.0	55.0
Oct 19			24	19	154	2		303	92				18.9	0.0	5.0	55.0
Oct 20			43	27	258	10		519	158				22.2	0.0	5.0	54.5
Oct 21			42	15	173	7		384	143				20.3	0.0	5.0	54.0
Oct 22			33	29	180	18		490	146				17.2	0.0	5.0	54.0
Oct 23			35	25	116	6		485	151				24.2	0.0	5.0	54.0
Oct 24			28	34	144	9		418	130				23.5	0.0	5.0	54.0
Oct 25			24	11	101	10		368	120				16.7	0.0	5.0	53.5
Oct 26			32	12	99	15		471	160				21.9	0.0	5.0	53.0
Oct 27			20	11	72	3		223	59				19.6	0.0	5.0	53.7
Oct 28			29	10	124	3		209	57				19.9	0.0	5.0	53.2
Oct 29			18	23	146	8		295	82				19.2	0.0	5.0	52.5
Oct 30			16	13	137	9		294	114				22.0	0.0	5.0	51.8
Oct 31			24	10	138	11		234	90				18.9	0.0	5.0	51.2
TOTAL			2,684	1,599	6,723	321		17,460	5,290							
AVG.			87	52	217	10		563	171				22.0	0.0	5.0	56.3

RUN YEAR TOTALS TO DATE	CHINOOK		COHO		SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
	ADULT	JACK	ADULT	JACK					
SPRING	19,155	3,870							
SUMMER	4,461	2,131							
FALL	15,329	5,874							
TOTAL	38,945	11,875							

Note: Visual counts ended October 31.

TABLE 141
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

NOVEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped		SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE	STEELHEAD							
Nov 1			26	9	113	11	288		95				17.8	0.0	5.0	50.9
Nov 2			40	29	74	4	316		113				17.9	0.0	5.0	50.3
Nov 3			36	19	51	8	216		72				17.4	0.0	5.0	49.6
Nov 4			14	21	46	4	177		73				20.5	0.0	5.0	49.6
Nov 5			14	7	46	5	182		73				15.6	0.0	5.0	49.1
Nov 6			13	5	38	3	115		37				18.8	0.0	5.0	49.6
Nov 7			11	11	30	4	81		27				18.9	0.0	5.0	47.7
Nov 8			12	4	21	1	103		43				19.4	0.0	5.0	46.8
Nov 9			14	1	21	0	66		23				16.5	0.0	5.0	46.5
Nov 10			15	1	11	2	103		47				19.3	0.0	5.0	46.0
Nov 11			10	6	2	0	79		27				17.0	0.0	5.0	45.7
Nov 12			5	2	5	0	65		18				20.0	0.0	5.0	45.2
Nov 13			9	0	1	1	38		14				20.0	0.0	5.0	44.5
Nov 14			43	5	9	1	33		8				20.6	0.0	5.0	44.5
Nov 15			24	1	7	0	29		10				17.4	0.0	5.0	44.3
Nov 16			59	3	4	0	47		16				16.8	0.0	5.0	44.3
Nov 17			33	1	4	0	55		19				20.5	0.0	5.0	44.3
Nov 18			19	1	4	0	64		21				20.6	0.0	5.0	44.3
Nov 19			10	2	11	0	62		24				17.5	0.0	5.0	44.8
Nov 20			3	3	3	0	63		18				23.2	0.0	5.0	45.0
Nov 21			4	0	9	0	60		14				26.9	0.0	5.0	44.9
Nov 22			6	0	4	2	40		16				19.8	0.0	5.0	44.7
Nov 23			3	1	4	0	63		24				21.0	0.0	5.0	44.6
Nov 24			3	0	2	1	89		24				16.5	0.0	5.0	44.8
Nov 25			2	0	5	2	51		22				21.6	0.0	5.0	45.0
Nov 26			2	2	7	0	79		27				21.7	0.0	5.0	45.0
Nov 27			5	-1	2	0	81		23				17.8	0.0	5.0	44.9
Nov 28			1	0	3	0	89		30				18.6	0.0	5.0	44.8
Nov 29			-1	0	1	0	56		21				19.2	0.0	5.0	44.7
Nov 30			1	3	1	0	41		10				16.1	0.0	5.0	44.5
TOTAL			436	136	539	49	2,831		989							
AVG.			15	5	18	2	94		33				19.2	0.0	5.0	46.0

RUN YEAR TOTALS TO DATE	CHINOOK	CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped	SHAD	LAMPREY
	ADULT	JACK	ADULT	JACK			STEELHEAD		
SPRING	19,155	3,870	7,662	403	81	34,811	12,193	16,345	94
SUMMER	4,461	2,131							
FALL	15,765	6,010							
TOTAL	39,381	12,011							

Note: From November 1 to December 31, counts were from video. The counts are 16-hour counts and occurred between 0400-2000 PST.

TABLE 142

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

DECEMBER 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	SHAD	LAMPREY	BULL	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK									STEELHEAD
Dec 1			2	0	2	0	36	6				16.9	0.0	5.0	44.0
Dec 2			5	0	4	0	16	3				18.9	0.0	5.0	43.3
Dec 3			0	1	0	0	11	3				17.3	0.0	5.0	42.6
Dec 4			0	0	4	0	17	5				19.9	0.0	5.0	42.5
Dec 5			0	2	2	0	10	3				20.4	0.0	5.0	42.3
Dec 6			1	0	1	0	0	-1				22.1	0.0	5.0	41.9
Dec 7			2	0	0	0	11	4				19.7	0.0	5.0	41.7
Dec 8			0	0	0	0	7	4				17.5	0.0	5.0	41.2
Dec 9			0	0	3	0	3	2				19.2	0.0	5.0	40.5
Dec 10			0	0	2	0	4	3				22.2	0.0	5.0	40.4
Dec 11			0	0	0	0	4	2				20.4	0.0	5.0	39.9
Dec 12			0	0	0	0	5	2				18.8	0.0	5.0	39.9
Dec 13			1	0	0	0	10	4				20.6	0.0	5.0	40.1
Dec 14			0	0	1	0	23	10				22.1	0.0	5.0	40.3
Dec 15			1	0	1	0	8	0				21.2	0.0	5.0	40.2
Dec 16			0	0	0	0	5	1				27.2	0.0	5.0	40.3
Dec 17			0	0	1	0	17	6				28.7	0.0	5.0	40.4
Dec 18			0	0	0	0	0	0				24.3	0.0	5.0	40.4
Dec 19			0	0	0	0	0	0				21.1	0.0	5.0	40.4
Dec 20			0	0	0	0	20	6				19.4	0.0	5.0	40.6
Dec 21			0	0	0	0	22	6				22.7	0.0	5.0	40.6
Dec 22			0	0	0	0	15	6				20.6	0.0	5.0	40.8
Dec 23			0	0	0	0	12	3				22.0	0.0	5.0	41.0
Dec 24			0	0	0	0	4	0				27.3	0.0	5.0	40.8
Dec 25			0	0	0	0	7	2				21.8	0.0	5.0	40.4
Dec 26			0	0	0	0	2	0				22.6	0.0	5.0	40.1
Dec 27			0	0	0	0	0	0				22.7	0.0	5.0	40.0
Dec 28			0	0	0	0	2	1				20.7	0.0	5.0	40.1
Dec 29			0	0	0	0	5	1				20.4	0.0	5.0	40.5
Dec 30			0	0	0	0	7	2				22.1	0.0	5.0	40.7
Dec 31												23.1	0.0	5.0	40.6
TOTAL			12	3	21	0	283	84							
AVG.			0	0	1	0	9	3				21.4	0.0	5.0	40.9

RUN YEAR

TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
SPRING	19,155	3,870	7,682	403	81	34,976	12,243	16,345	94	0
SUMMER	4,461	2,131								
FALL	15,777	6,013								
TOTAL	39,393	12,014								

Note: From November 1 to December 30, counts were from video. The counts are 16-hour counts and occurred between 0400-2000 PST. Official Fall Chinook run ended December 15.

TABLE 143

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL unclipped			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD		
Jun 1											
Jun 2											
Jun 3											
Jun 4											
Jun 5											
Jun 6											
Jun 7											
Jun 8											
Jun 9											
Jun 10											
Jun 11											
Jun 12											
Jun 13											
Jun 14											
Jun 15	3			4			0	0	0		0
Jun 16	2			2			0	0	0		0
Jun 17	15			4			0	1	1		0
Jun 18		14		7			0	1	1		0
Jun 19		8		7			0	0	0		0
Jun 20		7		7			0	0	0		1
Jun 21		5		8			0	0	0		0
Jun 22		15		8			0	0	0		0
Jun 23		34		11			0	0	0		1
Jun 24		11		4			0	0	0		-1
Jun 25		3		4			0	0	0		1
Jun 26		2		7			0	0	0		0
Jun 27		3		11			0	0	0		2
Jun 28		12		3			6	0	0		0
Jun 29		2		6			0	0	0		0
Jun 30		0		5			0	0	0		0
TOTAL	20	116		98			6	2	2		4
AVG.	7	9		6			0	0	0		0

Note: Night counts are video counts from 2000-0400 PST.

TABLE 144

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Jul 1		4		4			1	2	2		0
Jul 2		10		2			0	0	0		0
Jul 3		7		1			1	2	2		1
Jul 4		-1		2			0	1	1		0
Jul 5		3		5			0	2	2		1
Jul 6		10		-1			1	2	2		6
Jul 7		2		3			0	-1	-1		5
Jul 8		-2		3			0	1	0		3
Jul 9		4		9			1	4	4		2
Jul 10		2		4			0	0	0		5
Jul 11		1		1			1	0	0		8
Jul 12		8		1			0	0	0		7
Jul 13		0		4			1	1	1		7
Jul 14		0		7			0	1	0		6
Jul 15		3		1			0	0	0		8
Jul 16		1		0			0	0	0		12
Jul 17		2		1			1	0	0		7
Jul 18		1		3			0	0	0		16
Jul 19		1		2			1	0	0		14
Jul 20		2		1			1	1	1		17
Jul 21		2		4			0	2	2		15
Jul 22		2		0			1	1	1		12
Jul 23		1		0			0	1	1		9
Jul 24		7		1			0	0	0		14
Jul 25		2		2			0	0	0		14
Jul 26		1		1			1	3	3		21
Jul 27		1		0			-1	0	0		13
Jul 28		2		0			1	0	0		11
Jul 29		1		1			0	1	0		4
Jul 30		3		0			1	1	1		11
Jul 31		0		1			0	2	2		10
TOTAL		80		63			12	27	24		259
AVG.		3		2			0	1	1		8

Note: Night counts are video counts from 2000-0400 PST.

TABLE 145

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Aug 1		0		3			0	2	2		16
Aug 2		0		0			0	0	0		10
Aug 3		1		0			0	1	1		10
Aug 4		0		0			1	0	0		13
Aug 5		-1		0			0	2	1		9
Aug 6		0		0			0	-1	-1		6
Aug 7		0		0			0	2	1		19
Aug 8		0		0			0	1	1		7
Aug 9		1		0			0	0	-1		15
Aug 10		0		1			0	0	0		6
Aug 11		0		0			1	1	1		5
Aug 12		0		1			0	2	1		12
Aug 13		0		2			0	-1	0		5
Aug 14		0		0			0	1	1		7
Aug 15		0		1			0	0	0		10
Aug 16		0		0			0	2	2		9
Aug 17		2		1			0	1	0		15
Aug 18			1	1			0	0	0		12
Aug 19			-1	1			1	0	0		9
Aug 20			-2	0			0	1	0		10
Aug 21			2	2			0	-1	-1		3
Aug 22			0	0			0	0	0		7
Aug 23			-1	0			0	0	0		8
Aug 24			-1	0			1	1	0		9
Aug 25			-1	0			0	2	2		9
Aug 26			0	0			0	2	2		7
Aug 27			0	1			0	-1	-1		3
Aug 28			1	0			0	0	0		3
Aug 29			1	0			0	1	1		4
Aug 30			0	1			0	1	0		3
Aug 31			-1	0			0	0	0		10
TOTAL		3	-2	15			4	19	12		271
AVG		0	0	0			0	1	0		9

Note: Night counts are video counts from 2000-0400 PST.

TABLE 146

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL		unclipped	SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD		
Sep 1			0	0	0	0	0	0		6
Sep 2			1	0	0	0	0	1		2
Sep 3			-3	0	1	0	0	1		5
Sep 4			3	1	0	0	0	0		5
Sep 5			3	0	0	0	0	1		6
Sep 6			1	1	0	0	0	4		1
Sep 7			6	4	0	0	0	2		5
Sep 8			3	3	0	0	0	3		8
Sep 9			5	5	1	0	0	4		7
Sep 10			11	4	0	0	0	8		5
Sep 11			8	13	2	0	0	15		7
Sep 12			9	6	0	0	0	7		4
Sep 13			12	8	0	0	0	16		2
Sep 14			3	8	1	0	0	11		2
Sep 15			3	6	0	0	0	5		4
Sep 16			5	6	0	0	0	7		4
Sep 17			14	10	0	0	0	13		2
Sep 18			10	17	0	0	0	19		4
Sep 19			18	10	0	0	0	30		1
Sep 20			10	14	0	0	0	38		2
Sep 21			15	9	0	0	0	25		0
Sep 22			18	3	1	0	0	23		2
Sep 23			23	14	0	0	1	58		2
Sep 24			12	6	4	0	0	65		0
Sep 25			2	3	0	0	0	40		1
Sep 26			6	5	0	0	0	34		-1
Sep 27			0	7	0	0	0	129		1
Sep 28			2	4	3	0	0	96		2
Sep 29			10	2	10	1	0	78		0
Sep 30			4	7	5	0	0	65		-2
TOTAL			214	176	28	1	1	798	283	87
AVG.			7	6	1	0	0	27	9	3

Note: Night counts are video counts from 2000-0400 PST.

TABLE 147a

YEARLY TOTALS OF SALMONIDS COUNTED OVER
LOWER GRANITE DAM
1975 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTAL SALMONIDS
1975	28,460	17,311	209	921	46,901
1976	31,667	23,017	531	900	56,115
1977	49,123	53,037	458	268	102,886
1978	54,246	30,068	123	152	84,589
1979	12,548	25,046	25	158	37,777
1980	10,986	40,454	96	43	51,579
1981	19,198	40,234	218	17	59,667
1982	19,476	72,840	211	59	92,586
1983	16,200	86,234	122	51	102,607
1984	16,517	98,923	49	0	115,489
1985	36,567	118,463	35	2	155,067
1986	43,023	134,519	15	1	177,558
1987	37,677	70,151	29	0	107,857
1988	37,882	87,040	23	0	124,945
1989	19,557	132,579	2	0	152,138
1990	23,345	56,859	0	0	80,204
1991	13,618	100,381	8	0	114,007
1992	26,193	121,459	15	0	147,667
1993	30,446	66,699	12	0	97,157
1994	5,302	53,417	6	0	58,725
1995	3,971	87,871	3	0	91,845
1996	11,992	91,711	3	0	103,706
1997	50,626	95,060	17	104	145,807
1998	19,549	81,327	3	12	100,891
1999	16,689	79,332	18	303	96,342
2000	64,167	120,209	337	1,092	185,805
2001	213,818	285,929	43	1,467	501,257
2002	121,436	232,242	65	472	354,215
2003	119,676	180,672	11	1,265	301,624
2004	109,061	154,389	113	3,904	267,467
2005	49,530	155,783	18	2,183	207,514
2006	45,992	145,991	17	1,434	193,434
2007	63,038	157,510	55	2,798	223,401
2008	115,632	175,481	909	4,770	296,792
2009	168,032	323,697	1,406	4,912	498,047
2010	189,394	206,885	2,406	1,902	400,587
2011	179,497	183,648	1,678	5,351	370,174
2012	141,449	110,675	555	2,635	255,314
2013	150,607	109,921	853	2,459	263,840
2014	195,831	166,728	3,219	18,827	384,605
2015	204,344	141,533	479	1,702	348,058
2016	130,698	102,191	965	3,201	237,055
2017	83,095	78,753	299	8,913	171,060
2018	65,427	54,219	331	3,010	122,987
2019	52,190	35,940	104	8,115	96,349
Total	3,097,772	4,986,428	16,094	83,403	8,183,697

10-Year Average	139,253	119,049	1,089	5,612	265,003
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*Jacks included

Note: Totals for 1994-2019 include nighttime video counts.

Night counts (sockeye only) from 2009-2012.

TABLE 147b

YEARLY TOTALS OF SALMONIDS COUNTED OVER
LOWER GRANITE DAM --DAYTIME COUNTS

1975 - 2019

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTAL SALMONID
1975	28,460	17,311	209	921	46,901
1976	31,667	23,017	531	900	56,115
1977	49,123	53,037	458	268	102,886
1978	54,246	30,068	123	152	84,589
1979	12,548	25,046	25	158	37,777
1980	10,986	40,454	96	43	51,579
1981	19,198	40,234	218	17	59,667
1982	19,476	72,840	211	59	92,586
1983	16,200	86,234	122	51	102,607
1984	16,517	98,923	49	0	115,489
1985	36,567	118,463	35	2	155,067
1986	43,023	134,519	15	1	177,558
1987	37,677	70,151	29	0	107,857
1988	37,882	87,040	23	0	124,945
1989	19,557	132,579	2	0	152,138
1990	23,345	56,859	0	0	80,204
1991	13,618	100,381	8	0	114,007
1992	26,193	121,459	15	0	147,667
1993	30,446	66,699	12	0	97,157
1994	5,077	47,550	5	0	52,632
1995	3,702	80,853	3	0	84,558
1996	11,129	86,072	3	0	97,204
1997	46,727	85,917	11	92	132,747
1998	18,557	72,017	2	12	90,588
1999	15,884	74,370	14	262	90,530
2000	62,659	113,211	299	925	177,094
2001	210,381	262,568	36	1,087	474,072
2002	119,304	218,718	55	395	338,472
2003	119,676	180,672	11	1,265	301,624
2004	109,061	154,389	113	3,904	267,467
2005	49,530	155,783	18	2,183	207,514
2006	45,992	145,991	17	1,434	193,434
2007	62,530	157,345	52	2,798	222,725
2008	115,632	175,481	909	4,770	296,792
2009	168,032	323,697	1,219	4,912	497,860
2010	189,394	206,885	2,201	1,902	400,382
2011	179,497	183,648	1,502	5,351	369,998
2012	141,449	110,675	470	2,635	255,229
2013	149,926	107,910	757	2,454	261,047
2014	195,167	164,106	2,786	18,651	380,710
2015	203,259	139,776	440	1,688	345,163
2016	128,833	100,176	816	3,170	232,995
2017	81,318	76,798	228	8,802	167,146
2018	64,129	53,536	276	2,994	120,935
2019	51,407	35,094	81	8,086	94,668
Total	3,074,981	4,888,552	14,505	82,344	8,060,382
10-Year Average	138,438	117,860	956	5,573	262,827

*Jacks included

TABLE 148

**MONTHLY COUNT OF CHINOOK SALMON
LOWER GRANITE DAM
1975 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTALS*
1975				1	11,693	8,722	4,854	1,183	1,462	474	71		28,460
1976				149	14,358	10,438	5,074	428	605	535	80		31,667
1977				12,824	22,892	6,718	4,622	203	961	776	125	2	49,123
1978				3,329	29,983	11,464	6,976	1,234	698	519	42	1	54,246
1979				234	4,461	4,455	1,794	256	1,003	302	43		12,548
1980				328	5,227	2,558	1,916	241	345	343	28		10,986
1981				1,380	10,730	2,713	2,561	92	1,008	677	37		19,198
1982				42	9,121	4,650	3,217	329	1,399	650	62	6	19,476
1983				113	7,676	3,551	3,167	234	828	552	79		16,200
1984				134	4,915	5,602	4,274	303	719	522	48		16,517
1985				1,429	20,384	10,466	1,971	281	1,285	697	53	1	36,567
1986				3,623	26,434	7,472	2,796	137	1,250	1,136	172	3	43,023
1987			1	4,836	22,217	5,578	3,532	216	664	508	116	9	37,677
1988				4,722	20,615	8,771	2,654	212	429	371	104	4	37,882
1989				577	10,597	5,771	1,511	225	478	338	60		19,557
1990				2,808	12,925	4,902	2,094	64	248	264	40		23,345
1991				250	4,698	5,177	2,397	72	524	465	35		13,618
1992				6,205	12,170	4,783	1,998	110	576	288	63		26,193
1993				638	15,627	9,728	3,095	281	736	300	41		30,446
1994				99	2,283	1,180	436	73	422	539	45		5,077
1995				22	870	936	438	113	757	539	27		3,702
1996				38	3,415	4,260	1,557	210	1,133	471	45		11,129
1997				222	22,323	18,376	3,690	274	1,159	631	52		46,727
1998			1	942	6,330	5,398	1,877	175	1,495	2,200	138	1	18,557
1999				36	3,358	4,886	2,214	396	3,017	1,832	143	2	15,884
2000				5,984	30,609	12,074	3,032	564	5,719	4,435	240	2	62,659
2001				90,165	63,007	31,721	7,392	760	11,596	5,319	414	7	210,381
2002			1	1,050	56,456	35,129	8,223	1,102	12,774	4,336	229	4	119,304
2003			10	29,379	30,358	31,808	7,467	817	12,616	6,990	228	3	119,676
2004			1	20,189	42,777	19,382	3,991	410	17,277	4,512	522	0	109,061
2005				327	17,557	11,709	5,320	445	11,295	2,767	105	5	49,530
2006				4	14,325	12,477	3,927	1,053	8,630	5,332	240	4	45,992
2007			1	531	19,516	16,994	4,921	1,200	12,720	6,428	217	2	62,530
2008				1,019	36,995	40,654	9,513	1,819	20,570	4,725	335	2	115,632
2009				95	52,614	45,565	12,404	2,871	44,432	9,630	419	2	168,032
2010			1	9,432	75,785	36,788	11,810	2,078	38,806	14,025	668	1	189,394
2011				71	52,580	56,837	23,502	3,837	30,091	12,011	557	11	179,497
2012				36	53,549	24,743	5,607	2,353	45,341	9,016	793	11	141,449
2013			1	267	42,356	20,223	6,930	3,818	61,913	13,316	1,102	0	149,926
2014			0	1,149	74,107	26,374	12,194	3,017	61,195	15,640	1,486	5	195,167
2015			6	13,867	85,575	23,383	7,957	4,817	51,721	14,945	974	14	203,259
2016			3	785	54,283	19,137	5,884	5,769	35,122	7,087	763	0	128,833
2017			0	49	11,791	30,289	5,573	1,461	22,480	9,129	525	21	81,318
2018			0	37	16,911	22,607	2,279	1,590	16,067	3,981	650	7	64,129
2019			0	12	13,623	12,479	3,009	1,553	15,861	4,283	572	15	51,407
Total	26	219,429	1,150,076	688,928	221,650	48,676	559,427	173,836	12,788	145			3,074,981
10-Year Average	2,571	48,056	27,286	8,475	3,029	37,860	10,343	809					138,438

*Jacks included

TABLE 149

MONTHLY COUNT OF STEELHEAD

LOWER GRANITE DAM

1975 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975				1,724	1,065	104	102	3,337	6,396	3,584	703	296	17,311
1976	173	21	181	1,120	575	120	527	3,816	8,720	6,837	860	67	23,017
1977		9	142	1,235	229	59	1,538	2,652	16,296	27,492	2,950	435	53,037
1978	354	716	2,276	2,009	252	9	478	2,721	10,829	9,528	788	108	30,068
1979	12	44	802	962	192	16	1,197	2,602	5,143	11,323	2,487	266	25,046
1980			1,149	3,403	1,172	36	517	3,378	13,291	15,455	2,053		40,454
1981			1,052	1,610	604	98	1,422	1,609	9,391	20,714	3,096	638	40,234
1982			1,778	2,202	1,472	66	817	9,118	20,219	32,850	3,945	373	72,840
1983			3,336	1,416	244	7	1,676	8,899	32,063	34,028	4,425	140	86,234
1984			2,647	3,914	961	40	1,886	3,458	34,709	46,445	4,841	22	98,923
1985			2,474	9,686	856	146	706	5,027	63,074	33,137	3,230	127	118,463
1986			8,179	2,358	163	62	3,031	2,323	39,780	71,426	6,671	526	134,519
1987			2,962	2,951	251	51	783	2,342	16,644	34,235	8,809	1,123	70,151
1988			2,108	4,562	623	173	768	1,806	27,071	43,066	6,307	556	87,040
1989			2,172	4,789	429	99	2,026	4,199	49,256	55,766	13,308	535	132,579
1990			2,728	3,329	174	27	444	364	8,250	26,117	13,872	1,554	56,859
1991			2,422	3,530	285	43	1,009	454	24,610	58,803	7,892	1,333	100,381
1992			1,925	2,789	194	76	725	2,009	47,058	56,284	9,709	690	121,459
1993			3,232	8,118	364	191	2,621	5,298	10,374	32,618	3,702	181	66,699
1994			1,644	3,007	132	97	888	1,693	7,089	25,913	6,772	315	47,550
1995			3,176	1,166	193	33	1,216	3,540	27,585	37,260	5,176	1,508	80,853
1996			1,720	1,017	71	52	1,068	4,218	38,109	34,267	4,607	943	86,072
1997			2,043	1,408	183	65	1,423	5,975	22,424	42,544	9,305	547	85,917
1998			2,390	1,837	107	94	1,001	731	10,295	46,326	7,071	2,165	72,017
1999			2,091	855	92	35	1,333	5,577	35,954	23,694	4,044	695	74,370
2000			1,453	932	94	275	2,907	5,081	57,412	39,501	5,217	339	113,211
2001			3,200	2,365	193	1,087	6,772	11,315	101,289	105,685	24,287	6,375	262,568
2002			4,064	7,992	415	272	4,866	14,234	83,239	93,223	9,360	1,053	218,718
2003			13,038	2,583	182	398	3,169	5,108	71,337	77,100	7,157	600	180,672
2004			4,802	2,662	154	421	2,492	3,227	78,020	55,626	6,480	505	154,389
2005			3,479	1,204	180	433	2,156	3,315	57,231	79,926	6,882	977	155,783
2006			3,467	3,924	200	87	691	2,063	50,958	68,063	14,958	1,580	145,991
2007			6,894	3,477	211	271	1,504	3,792	58,983	71,535	8,269	2,409	157,345
2008			3,812	3,412	547	107	4,301	13,596	83,413	56,851	8,322	1,120	175,481
2009			4,313	5,918	550	486	3,806	8,978	154,804	129,599	14,574	669	323,697
2010			5,934	3,986	542	490	8,939	16,337	98,690	63,325	7,620	1,022	206,885
2011			5,017	6,443	830	73	3,309	21,163	84,732	58,065	3,355	661	183,648
2012			4,451	3,863	613	108	1,202	2,374	46,049	40,984	8,927	2,104	110,675
2013			4,461	2,674	304	107	1,044	4,016	39,492	49,717	5,597	498	107,910
2014			5,419	1,683	381	325	4,511	5,448	66,495	66,635	10,137	3,072	164,106
2015			7,118	1,798	264	113	814	3,323	59,018	58,255	8,150	923	139,776
2016			3,843	1,463	167	194	2,180	3,313	34,143	47,401	6,763	709	100,176
2017			5,394	1,747	161	15	282	437	20,587	43,704	3,877	594	76,798
2018			1,777	2,642	111	86	1,009	811	19,202	23,484	3,938	476	53,536
2019			1,607	1,175	98	18	953	1,060	9,609	17,460	2,831	283	35,094
Total	539	790	148,172	132,940	17,080	7,165	86,109	216,137	1,859,333	2,075,851	303,324	41,112	4,888,552
10-Yr Average			4,502	2,747	347	153	2,424	5,828	47,802	46,903	6,120	1,034	117,860

PRIEST RAPIDS AND WANAPUM DAMS

FISH COUNTING SCHEDULE

Jan. 1 – Apr. 14	No adult fish counting.
Apr. 15 – Nov. 15	Daily fish counting via video fish-counting system.
Nov. 16 – Dec. 31	No adult fish counting.

2019 FISH LADDER OPERATING AND MAINTENANCE SCHEDULE – PRIEST RAPIDS and WANAPUM DAMS

Fishway inspections are conducted by a project operator at least once per day (walk-through) to ensure that fish facilities are operating within criteria limits. A daily log of the inspections is compared with the computerized printout to assure correct calibration of the fishway control system. At the discretion of National Marine Fisheries Service or Fish Passage Center, at least one inspection of the fishways is conducted by one of these agencies each month during the adult fish-passage season (April 15–November 15).

Normal winter maintenance occurs from December 1 to March 31. The fishways may be dewatered during this time to allow annual maintenance of fish facility equipment, including pumps, diffuser gratings, valves, and orifice and entrance gates as necessary to assure their readiness during the adult fish-migration period. Fish and Wildlife personnel are present at all dewaterings to assure proper fish handling procedures are followed.

Maintenance which requires dewatering, or that will have a significant effect on fish passage, is done during the winter maintenance period of December 1 through March 31. Facility maintenance that does not affect fish passage may occur at any time of the year. Concurrent outages of both fishways are avoided whenever possible to provide an upstream fish passage route at the dams at all times. When facilities are not being maintained during the winter maintenance period, they are operated according to the normal operating criteria, unless otherwise coordinated in advance.

2019 FISHWAY ACTIVITIES

Adult Fish Counting

The video fish-counting system uses digital video cameras installed in the fishways to assist with counting migrating fish at Priest Rapids and Wanapum dams. Digital video images are streamed 24 hours per day to a digital video recorder (DVR) at each dam. These DVRs are networked and accessed by fish counters via computers from the fish-counting room at the Wanapum Maintenance Center. The fish counting staff playback these images in a fast-forward mode until a fish is observed, then slowed for fish identification and count. During periods of concentrated fish passage at the count window, playback is slowed down to real time or replayed to facilitate counting accuracy. At the end of each day all counts are

electronically tallied and a fish-count report is generated for each dam and posted on Grant County PUD's Fish and Wildlife's website: <https://www.grantpud.org/fish-wildlife>.

During routine fish-count operations from the April 15 to November 15 season, two bull trout were observed in the left-bank fishway at Wanapum Dam on May 31 and June 7, 2019.

Adult PIT Tag Detection

The PIT tag detection array receives annual maintenance prior to the adult fish count season and is located in the exit section in both ladders of Priest Rapids Dam. The detection system is operated continuously whenever the adult fishways are operational; detected tags are automatically uploaded to the PIT Tag Information System website. Another PIT tag monitoring site is located within the Off-Ladder Adult Fish Trap.

Off Ladder Adult Fish Trap (OLAFT)

The Washington Department of Fish & Wildlife (WDFW) sampled steelhead trout for the agency's stock-assessment program beginning on July 8 and typically operated the trap on Mondays, Wednesdays, and Fridays of each week through November 1, 2019. Concurrent with the WDFW steelhead sampling, the Yakama Nation were on site at the OLAFT two or three days per week from September 23 through October 16 to sample and PIT-tag adult Coho salmon for the mid-Columbia Coho reintroduction program. In addition, the WDFW trapped fall Chinook salmon to augment broodstock collection for Priest Rapids Hatchery three days per week beginning September 9 and finishing October 18. The OLAFT was completely dewatered and winterized for the season on November 4, 2019.

Adult Lamprey Passage Study

During the eleventh year of implementation of the Pacific Lamprey Management Plan, Grant PUD continued, for a tenth year, its assessment of Pacific Lamprey behavior and passage efficiency through fishways at Priest Rapids and Wanapum dams to evaluate the efficacy of design enhancements installed during the 2009-2010 winter fish ladder maintenance outage. For the 2010 through 2019 migrations, Grant PUD monitored a total of 652 and 647 half-duplex passive integrated transponder (HDX-PIT) tagged lamprey at Priest Rapids and Wanapum dams, respectively. Fishway passage efficiency for lamprey ranged from 62.3 to 100.0% with a standard error range of 2 to 19% at Priest Rapids Dam over the 2010-2018 period and ranged from 44.4 to 100.0% with a standard error range of 2 to 35% at Wanapum Dam over the 2010-2013, 2015-2018 period. The fishway passage efficiency for the entire 2010-2018 comprehensive dataset is 94.6% and 100.0% at Priest Rapids and Wanapum dams, respectively. Low passage efficiency estimates were associated with small sample sizes in some ladders in certain years. Fishway passage efficiency for 2019 is not yet available and will be included in the 2020 annual report.

During the 2019 adult Pacific Lamprey migration period, fish from tagging efforts downstream were used to evaluate Project passage efficiency and to estimate passage times through the fishways at Priest Rapids and Wanapum dams. Pacific Lamprey were HDX-PIT tagged and released at Bonneville Dam by University of Idaho and the Confederated Tribes of the Warm Springs. The median passage time at the Priest Rapids and Wanapum fishways was 23.5 hours and 85.9 hours, respectively.

TABLE 150

MONTHLY TOTALS OF SALMONIDS, SHAD, AND LAMPREY COUNTED OVER PRIEST RAPIDS DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				19	5,711	19,350	22,118	5,306	17,895	7,409	990		78,798
STEELHEAD				10	13	11,352	618	800	1,775	650	35		15,253
SOCKEYE					0	22	33,340	532	7				33,901
COHO*									3,004	5,543	125		8,672
PINK													0
TOTAL				29	5,724	30,724	56,076	6,638	22,681	13,602	1,150		136,624
LAMPREY					10	204	764	1,666	599	0	6		3,249
BULL TROUT					0								0

*Jacks included

TABLE 151

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											APRIL 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK						KCFS	KCFS	
Apr 1												69.7	0.0	43.0
Apr 2												69.8	0.0	43.2
Apr 3												69.9	0.0	43.4
Apr 4												69.0	0.0	43.6
Apr 5												68.2	0.0	44.0
Apr 6												67.6	0.0	44.0
Apr 7												67.3	0.0	44.0
Apr 8												67.5	0.0	44.2
Apr 9												67.8	0.0	44.2
Apr 10												67.9	0.0	44.2
Apr 11												67.8	0.0	44.4
Apr 12												67.8	0.0	44.7
Apr 13												67.8	0.0	44.4
Apr 14												67.7	0.0	44.2
Apr 15	0							1				68.9	0.0	44.4
Apr 16	0							0				84.5	0.0	45.1
Apr 17	0							0				73.0	0.0	44.8
Apr 18	1							3				84.4	0.0	45.5
Apr 19	0							0				75.5	0.0	45.7
Apr 20	2							0				70.4	0.0	46.3
Apr 21	3							2				72.6	0.0	46.5
Apr 22	0							-1				92.6	0.0	46.4
Apr 23	0							2				109.1	30.8	46.1
Apr 24	1							0				137.2	44.4	46.4
Apr 25	0							1				122.2	35.2	**
Apr 26	2							1				115.9	28.3	46.3
Apr 27	1							0				123.7	66.8	46.5
Apr 28	4							1				115.8	21.0	46.3
Apr 29	2							0				126.2	20.1	46.5
Apr 30	3							0				126.9	24.7	**
TOTAL	19							10				85.2	9.0	44.9
AVG.	1							1						

**Data unavailable

TABLE 152

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS										MAY 2019				
DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
May 1	2			1				0		0		127.0	22.8	46.2
May 2	3			0				2		0		122.9	23.9	46.3
May 3	7			0				1		0		117.5	21.5	46.6
May 4	5			0				0		0		110.8	20.7	47.1
May 5	15			0				0		0		110.5	19.6	47.6
May 6	15			1				0		0		115.3	22.7	47.9
May 7	15			0				0		0		111.0	23.5	48.3
May 8	21			0				0		0		106.9	23.8	48.8
May 9	43			0				0		0		123.6	24.5	49.2
May 10	132			0				1		0		137.6	24.7	50.1
May 11	192			5				1		0		154.5	31.2	50.8
May 12	264			2				2		1		131.0	23.7	51.4
May 13	219			0				0		0		143.4	29.9	51.5
May 14	319			7				1		0		157.1	42.3	51.4
May 15	304			2				0		0		167.3	49.6	51.1
May 16	434			14				1		0		183.2	74.0	50.8
May 17	394			21				2		0		170.5	73.6	51.1
May 18	220			15				0		2		174.6	50.8	51.3
May 19	323			18				1		1		181.5	61.1	51.1
May 20	228			16				1		0		172.7	69.2	51.2
May 21	190			17				0		0		181.3	82.0	51.5
May 22	272			23				0		0		162.2	50.6	51.9
May 23	209			43				0		0		147.0	30.5	52.4
May 24	255			14				0		2		145.2	44.1	52.7
May 25	199			30				0		0		148.5	38.4	52.3
May 26	239			32				0		-1		141.1	28.7	52.9
May 27	174			35				0		0		151.0	54.2	54.0
May 28	174			43				0		2		158.1	74.9	54.5
May 29	153			21				0		1		152.7	55.7	54.7
May 30	187			23				0		2		176.1	63.5	54.7
May 31	110			11				0		0		178.7	71.7	**
TOTAL	5,317			394				13		10				
AVG.	172			13				0		0		147.1	42.8	50.7
RUN YEAR		CHINOOK ADULT	CHINOOK JACK					SOCKEYE	STEELHEAD		LAMPREY	BULL TROUT		
TOTALS TO DATE														
SPRING		5,336	394					0	23		10	0		

**Data unavailable

TABLE 153

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jun 1	127			16			0	1		3		159.0	42.6	55.7
Jun 2	170			28			0	0		10		140.2	37.2	56.5
Jun 3	110			25			0	1		5		152.5	42.0	56.9
Jun 4	134			9			0	0		4		121.7	22.5	57.3
Jun 5	181			21			0	2		4		130.2	24.7	57.5
Jun 6	166			21			0	1		1		130.9	22.2	57.3
Jun 7	202			6			0	8		0		130.4	28.1	57.3
Jun 8	165			4			0	3		2		112.4	22.2	**
Jun 9	253			26			0	5		0		122.3	25.7	**
Jun 10	149			13			0	7		3		146.7	28.2	57.6
Jun 11	255			12			0	8		11		134.0	23.7	57.8
Jun 12	330			17			1	11		2		131.7	25.8	57.9
Jun 13	531			41			0	34		1		135.4	21.6	58.4
Jun 14		518		6			0	59		4		118.1	24.3	58.9
Jun 15		541		20			0	112		12		121.4	25.7	59.0
Jun 16		600		9			1	156		5		114.7	25.4	59.5
Jun 17		556		40			1	208		7		90.5	23.2	59.6
Jun 18		880		28			1	204		9		101.4	23.7	60.5
Jun 19		1,428		55			1	247		7		93.9	13.1	60.6
Jun 20		912		67			1	182		9		119.2	21.2	60.3
Jun 21		635		76			0	216		8		137.6	29.5	60.4
Jun 22		906		46			2	338		14		100.2	26.3	60.9
Jun 23		1,128		11			0	592		10		84.8	26.5	60.9
Jun 24		1,500		42			5	897		9		111.2	25.3	60.8
Jun 25		1,164		130			1	1,091		17		110.0	26.0	60.8
Jun 26		823		45			2	1,144		7		121.0	25.9	60.3
Jun 27		991		170			0	748		3		118.9	25.5	59.9
Jun 28		963		69			0	1,637		8		119.4	24.4	60.0
Jun 29		689		140			1	1,506		6		105.1	26.3	60.2
Jun 30		1,082		68			5	1,934		23		113.5	25.7	**
TOTAL	2,773	15,316		1,261			22	11,352		204				

AVG.	901		42		1	378		7		120.9	26.1	59.0
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**Data unavailable

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,109	633
SUMMER	15,316	1,022
TOTAL	23,425	1,655

SOCKEYE	STEELHEAD	LAMPREY	BULL TROUT
22	11,375	214	0

TABLE 154

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											JULY 2019			
DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jul 1		849		35		0	2,106	12		14		101.8	25.7	60.9
Jul 2		978		59		0	2,310	4		11		91.1	25.9	61.1
Jul 3		798		118		0	1,932	11		10		96.0	25.7	61.0
Jul 4		1,183		17		0	2,599	14		9		71.4	27.4	61.5
Jul 5		1,018		65		0	2,751	7		2		109.0	28.1	61.9
Jul 6		1,274		88		0	2,994	20		24		72.8	27.8	62.5
Jul 7		773		6		1	2,607	16		23		95.5	26.8	62.7
Jul 8		1,190		235		0	1,833	9		27		89.4	26.5	62.9
Jul 9		1,063		69		0	2,027	22		23		88.2	25.0	63.5
Jul 10		849		39		0	1,761	22		11		86.3	26.4	63.8
Jul 11		884		75		0	1,317	21		32		94.7	26.7	64.1
Jul 12		824		40		0	1,377	19		30		103.8	26.5	64.2
Jul 13		619		39		0	1,220	18		23		106.5	25.9	64.7
Jul 14		705		7		0	1,083	14		17		94.8	24.3	64.7
Jul 15		608		116		0	715	10		14		86.9	24.2	64.7
Jul 16		644		53		0	729	17		25		95.2	24.5	64.5
Jul 17		640		42		0	684	24		6		104.1	24.9	64.2
Jul 18		444		64		0	414	20		12		102.6	25.9	64.0
Jul 19		466		68		0	380	16		16		106.1	25.6	63.5
Jul 20		506		38		0	444	18		24		107.2	24.6	64.1
Jul 21		436		26		0	327	34		25		84.3	24.3	65.0
Jul 22		584		39		0	274	38		55		95.0	24.0	65.6
Jul 23		340		58		0	194	24		58		91.3	25.3	66.0
Jul 24		465		36		0	330	15		28		108.3	24.9	65.6
Jul 25		329		74		0	174	11		28		112.0	24.0	65.1
Jul 26		210		32		0	164	21		24		101.5	23.3	65.2
Jul 27		243		24		0	147	24		48		83.3	25.8	65.9
Jul 28		531		55		0	167	40		33		88.8	25.6	65.9
Jul 29		375		19		0	36	19		34		88.7	26.5	66.3
Jul 30		405		35		0	136	40		40		118.7	27.8	66.3
Jul 31		198		16		0	108	38		38		137.9	26.8	**
TOTAL		20,431		1,687		1	33,340	618		764				
AVG.		659		54		0	1,075	20		25		97.2	25.7	64.0

**Data unavailable

RUN YEAR	CHINOOK		COHO		SOCKEYE	STEELHEAD	LAMPREY	BULL TROUT
	ADULT	JACK	ADULT	JACK				
TOTALS TO DATE								
SPRING	8,109	633	0	1	33,362	11,993	978	0
SUMMER	35,747	2,709						
TOTAL	43,856	3,342						

TABLE 155

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											AUGUST 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT			
Aug 1		177		32			50	26		47		131.7	25.1	66.3
Aug 2		292		31			161	24		76		113.1	23.7	66.8
Aug 3		256		23			95	36		94		107.9	23.5	67.2
Aug 4		215		31			22	40		51		96.7	25.1	67.2
Aug 5		143		42			7	36		74		101.0	23.9	67.4
Aug 6		183		50			11	28		33		113.9	25.3	67.4
Aug 7		155		47			20	28		16		113.7	24.3	67.6
Aug 8		185		17			13	17		16		107.7	24.2	67.6
Aug 9		186		31			9	26		37		110.7	23.0	68.0
Aug 10		88		20			1	26		47		83.5	23.6	68.1
Aug 11		84		12			12	21		31		62.9	24.8	68.1
Aug 12		153		20			3	46		27		108.0	25.2	67.9
Aug 13		96		38			0	13		34		102.1	24.5	68.1
Aug 14			132	21			0	23		24		101.9	23.5	68.3
Aug 15			90	62			1	29		54		99.4	24.9	67.9
Aug 16			76	13			1	21		69		98.3	26.6	67.7
Aug 17			130	28			3	8		72		80.0	24.5	67.6
Aug 18			54	20			0	18		64		69.6	23.6	68.1
Aug 19			101	33			1	27		61		86.9	24.0	67.9
Aug 20			69	14			0	20		55		118.9	25.0	68.0
Aug 21			85	34			1	25		85		107.1	24.0	67.9
Aug 22			131	42			1	33		36		91.0	22.1	67.5
Aug 23			147	24			9	12		95		109.2	13.7	67.6
Aug 24			122	23			0	32		62		52.0	7.5	67.8
Aug 25			113	49			0	22		95		60.8	8.6	67.6
Aug 26			87	13			0	17		71		98.3	5.5	67.4
Aug 27			159	38			2	33		46		85.9	5.4	67.8
Aug 28			80	25			0	32		49		103.8	3.0	68.1
Aug 29			292	19			0	27		38		96.8	2.5	67.6
Aug 30			183	19			0	30		25		111.1	2.9	67.3
Aug 31			142	29			109	24		82		92.0	2.9	**
TOTAL		2,213	2,193	900			532	800		1,666				
AVG.		170	122	29			17	26		54		97.3	18.9	67.7
**Data unavailable														
RUN YEAR	CHINOOK	CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	LAMPREY	BULL						
TOTALS TO DATE	ADULT	JACK	ADULT	JACK				TROUT						
SPRING	8,109	633	0	1	33,894	12,793	2,644	0						
SUMMER	37,960	3,103												
FALL	2,193	506												
TOTAL	48,262													

TABLE 156

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											SEPTEMBER 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT	KCFS	KCFS	
Sep 1			241	17	0	0	0	39			55	52.8	2.8	68.2
Sep 2			306	32	0	0	0	48			62	82.6	2.8	68.2
Sep 3			309	38	0	0	0	47			22	85.7	3.3	68.3
Sep 4			431	48	0	0	0	59			50	77.1	2.5	68.2
Sep 5			627	32	1	0	0	42			50	61.0	3.6	68.4
Sep 6			337	41	0	0	0	34			43	64.5	2.3	68.4
Sep 7			568	56	1	0	0	35			11	45.9	2.3	68.4
Sep 8			555	42	0	0	0	46			35	46.3	2.5	68.3
Sep 9			299	37	7	0	0	44			7	47.2	1.4	68.0
Sep 10			357	60	0	0	1	37			8	76.7	2.8	67.7
Sep 11			286	33	4	1	0	33			24	62.3	2.8	67.6
Sep 12			267	12	7	0	1	23			19	60.9	2.7	67.9
Sep 13			512	47	10	0	0	34			9	50.2	2.9	68.2
Sep 14			287	43	8	1	0	30			28	56.1	2.9	68.0
Sep 15			320	42	16	2	0	45			30	57.8	2.7	67.6
Sep 16			453	22	38	1	0	54			23	83.7	2.5	67.3
Sep 17			404	46	15	4	1	51			3	43.5	2.7	66.7
Sep 18			484	49	25	8	0	55			7	45.1	1.8	66.5
Sep 19			670	73	76	2	0	88			12	55.5	2.6	66.1
Sep 20			1,367	71	67	6	1	58			10	53.9	4.1	66.1
Sep 21			679	80	62	14	0	39			11	42.8	2.5	65.6
Sep 22			868	98	67	0	0	55			17	42.9	2.4	65.6
Sep 23			435	81	62	22	0	61			16	46.3	5.3	65.4
Sep 24			820	67	168	10	0	78			11	44.2	3.0	65.0
Sep 25			1,355	111	295	23	0	195			7	50.6	2.1	64.5
Sep 26			654	81	314	8	0	111			9	66.9	2.7	64.3
Sep 27			955	103	379	14	1	94			8	54.1	2.7	63.9
Sep 28			650	66	497	25	2	88			4	42.2	2.3	63.2
Sep 29			464	78	339	27	0	106			1	49.2	2.8	62.2
Sep 30			297	32	366	12	0	46			7	59.8	2.8	**
TOTAL			16,257	1,638	2,824	180	7	1,775			599			

AVG.	542	55	94	6	0	59	20	56.9	2.8	66.7
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**Data unavailable

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	LAMPREY	BULL TROUT
TOTALS TO DATE								
SPRING	8,109	633	2,824	181	33,901	14,568	3,243	0
SUMMER	37,960	3,103						
FALL	18,450	2,144						
TOTAL	64,519	5,880						

TABLE 157

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											OCTOBER 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT			
Oct 1			160	41	409	20		54		0		63.8	2.8	60.8
Oct 2			238	28	324	21		53		1		71.9	2.4	61.2
Oct 3			396	71	275	18		48		1		67.4	2.2	61.1
Oct 4			429	41	232	4		28		3		56.8	2.4	60.9
Oct 5			385	39	215	12		30		2		53.4	2.1	60.8
Oct 6			322	50	215	25		42		1		43.1	1.9	60.5
Oct 7			163	48	206	12		45		0		50.9	2.3	60.5
Oct 8			340	38	407	11		43		0		55.8	2.5	60.3
Oct 9			352	32	317	7		32		1		62.5	2.7	59.9
Oct 10			193	32	138	3		27		0		59.0	2.4	59.5
Oct 11			199	42	118	10		14		0		55.1	2.3	59.3
Oct 12			171	32	164	11		13		0		74.6	2.7	59.0
Oct 13			326	43	212	28		27		1		57.5	2.5	58.9
Oct 14			212	12	101	22		8		0		66.0	2.3	58.8
Oct 15			167	25	109	12		14		0		59.9	1.7	58.7
Oct 16			221	23	164	7		7		0		72.9	2.1	58.7
Oct 17			224	20	155	3		21		2		68.1	2.0	58.6
Oct 18			219	36	162	16		19		1		60.1	1.9	58.3
Oct 19			243	20	116	2		12		0		68.0	2.3	58.1
Oct 20			177	11	102	3		29		3		58.8	1.9	57.7
Oct 21			72	12	68	3		12		0		59.6	1.9	57.6
Oct 22			98	8	79	7		8		0		56.0	1.8	57.6
Oct 23			110	10	67	1		4		5		51.3	1.8	57.4
Oct 24			136	11	98	4		9		1		54.4	2.2	57.5
Oct 25			194	27	151	15		12		0		60.9	2.4	57.5
Oct 26			199	17	185	22		10		1		62.8	2.3	57.0
Oct 27			208	26	119	11		5		3		64.5	2.3	56.6
Oct 28			143	15	137	15		7		0		65.9	2.0	56.4
Oct 29			126	15	80	3		8		0		67.4	2.0	55.9
Oct 30			65	10	67	3		6		0		72.4	2.2	55.1
Oct 31			70	16	17	3		3		0		70.6	2.3	**
TOTALS			6,558	851	5,209	334		650		26				
AVG.			212	27	168	11		21		1		61.6	2.2	58.7

**Data unavailable

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	LAMPREY	BULL TROUT
TOTALS TO DATE								
SPRING	8,109	633	8,033	515	33,901	15,218	3,269	0
SUMMER	37,960	3,103						
FALL	25,008	2,995						
TOTAL	71,077	6,731						

TABLE 158

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS											NOVEMBER 2019			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT			
Nov 1			68	0	14	6		5		0		77.6	2.3	54.7
Nov 2			49	7	21	0		3		0		81.8	2.4	54.7
Nov 3			43	1	21	0		0		-1		68.5	1.6	54.6
Nov 4			69	5	13	4		4		0		86.5	2.0	54.4
Nov 5			74	0	13	0		3		0		95.0	8.5	54.2
Nov 6			58	8	7	0		2		0		94.2	7.6	54.0
Nov 7			87	2	6	0		1		0		108.7	21.7	54.0
Nov 8			92	6	8	0		1		0		109.4	24.3	53.9
Nov 9			53	3	4	0		1		4		123.0	36.9	53.7
Nov 10			121	8	3	0		2		1		112.7	30.0	53.7
Nov 11			72	2	1	0		2		2		105.7	22.7	53.7
Nov 12			59	3	1	0		4		0		103.1	16.5	53.7
Nov 13			37	4	2	0		1		0		104.0	15.6	53.5
Nov 14			26	0	1	0		4		0		102.8	12.6	53.4
Nov 15			32	1	0	0		2		0		93.7	1.3	53.4
Nov 16												96.9	1.8	53.2
Nov 17												93.5	0.9	53.1
Nov 18												95.2	0.0	53.1
Nov 19												90.2	0.0	53.0
Nov 20												80.6	0.0	52.8
Nov 21												89.3	6.3	52.3
Nov 22												110.7	13.2	51.9
Nov 23												109.8	28.8	51.5
Nov 24												86.5	16.2	51.0
Nov 25												91.3	0.3	50.5
Nov 26												108.7	4.4	50.0
Nov 27												128.4	8.7	49.7
Nov 28												112.8	0.0	48.6
Nov 29												108.7	0.0	48.2
Nov 30												109.7	0.0	**
TOTALS			940	50	115	10		35		6				
AVG.			63	3	8	1		2		0		99.3	9.6	52.7

**Data unavailable

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD*	LAMPREY	BULL TROUT
TOTALS TO DATE									
SPRING	8,109	633	8,148	525	33,901	15,253		3,275	0
SUMMER	37,960	3,103							
FALL	25,948	3,045							
TOTAL	72,017	6,781							

*Shad not counted in 2019.

TABLE 159

**YEARLY TOTALS OF SALMONIDS COUNTED OVER PRIEST RAPIDS DAM
1982 - 2019**

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS
1982	32,051	11,160	40,461	1,810	85,482
1983	31,008	31,809	90,008	502	153,327
1984	41,425	26,213	114,761	173	182,572
1985	62,164	34,589	118,542	219	215,514
1986	68,703	22,401	43,084	83	134,271
1987	73,214	14,011	76,578	108	163,911
1988	53,963	10,208	51,135	68	115,374
1989	49,246	10,730	45,301	32	105,309
1990	36,257	7,830	46,331	31	90,449
1991	31,482	13,939	71,245	22	116,688
1992	37,752	13,733	80,857	1	132,343
1993	54,552	5,460	82,963	0	142,975
1994	32,892	6,706	12,385	0	51,983
1995	30,548	4,358	9,186	3	44,095
1996	27,325	8,324	29,422	5	65,076
1997	33,036	8,948	45,412	26	87,422
1998	29,415	5,837	10,769	18	46,039
1999	57,054	8,277	16,432	55	81,818
2000	91,223	11,331	89,547	378	192,479
2001	139,929	30,090	111,326	11,189	292,534
2002	161,510	15,895	47,883	1,555	226,843
2003	160,433	17,652	36,551	5,216	219,852
2004	134,620	18,727	124,943	5,624	283,914
2005	109,429	12,472	74,563	1,260	197,724
2006	87,086	10,408	26,710	3,813	128,017
2007	65,962	15,183	24,645	12,310	118,100
2008	104,001	16,725	196,835	6,022	323,583
2009	114,137	40,093	153,466	11,293	318,989
2010	123,576	26,476	357,058	2,655	509,765
2011	116,914	20,757	145,070	23,392	306,133
2012	138,487	17,230	408,257	9,957	573,931
2013	371,726	15,011	163,078	4,020	553,835
2014	242,755	19,843	608,142	36,685	907,425
2015	206,103	14,316	301,272	5,036	526,727
2016	147,777	6,498	311,072	1,987	467,334
2017	96,655	5,804	66,670	8,719	177,848
2018	70,814	4,918	189,884	5,186	270,802
2019	78,798	15,253	33,901	8,672	136,624
Totals	3,544,022	579,215	4,455,745	168,125	8,747,107
10-Year Average	159,361	14,611	258,440	10,631	443,042

*Jacks included

TABLE 160

MONTHLY COUNT OF STEELHEAD
PRIEST RAPIDS DAM: 1960 - 2019

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1960				159	651	25	318	2,255	3,190	1,229			7,827
1961				52	208	43	381	1,480	4,650	1,753			8,567
1962				133	530	74	329	2,027	4,925	1,306			9,324
1963				183	564	109	336	2,922	3,344	1,816			9,274
1964				85	196	44	261	1,986	2,649	770			5,991
1965				129	298	91	649	2,498	3,868	1,508			9,041
1966				189	252	296	1,194	2,775	5,549	2,751			13,006
1967				213	381	62	411	1,686	2,109	2,492			7,354
1968				530	1,112	24	185	1,954	4,950	1,769			10,524
1969				120	670	105	566	1,598	2,544	1,047			6,650
1970				85	195	27	197	1,129	3,053	872			5,558
1971				46	440	61	185	2,043	6,241	2,086			11,102
1972				163	552	42	318	1,992	2,190	1,172			6,429
1973				132	160	56	788	1,738	3,254	871			6,999
1974				45	129	229	504	845	945	392			3,089
1975				3	37	99	214	670	1,187	252			2,462
1976				3	133	246	531	1,873	5,462	1,000			9,248
1977				178	200	209	1,029	1,963	4,519	1,706			9,804
1978				72	134	214	532	1,143	1,869	581			4,545
1979				13	127	30	585	3,082	3,174	1,398			8,409
1980				232	203	17	179	1,815	4,721	1,263	94		8,524
1981				75	144	105	445	2,414	4,127	1,545	133	24	9,012
1982	5	32	70	136	86	46	331	3,126	5,345	1,805	163	15	11,160
1983	5	9	52	40	11	12	599	8,660	18,272	3,534	602	13	31,809
1984	28	4	92	142	145	224	2,534	8,840	11,907	2,030	256	11	26,213
1985	2	11	74	351	326	856	5,319	11,063	14,693	1,659	235		34,589
1986				82	100	262	3,637	10,584	5,647	1,856	233		22,401
1987				42	71	124	1,954	5,741	4,311	1,495	273		14,011
1988				48	108	239	1,234	3,119	4,016	1,176	268		10,208
1989				36	50	133	1,361	3,499	4,581	872	198		10,730
1990				24	52	130	1,282	2,616	3,060	551	115		7,830
1991				31	73	66	1,406	4,041	6,301	1,768	253		13,939
1992				60	152	313	2,328	3,261	6,265	1,227	127		13,733
1993				34	41	125	993	1,733	2,013	471	40		5,450
1994				7	13	78	902	1,286	3,087	1,269	64		6,706
1995				4	20	30	540	1,316	2,062	363	23		4,358
1996				9	14	35	546	3,234	3,810	627	49		8,324
1997				5	17	39	574	2,822	4,176	1,224	91		8,948
1998				7	9	40	806	935	2,976	1,005	59		5,837
1999				6	19	72	588	3,361	3,543	633	55		8,277
2000				2	13	155	1,895	3,786	4,825	598	57		11,331
2001				14	11	326	4,426	10,368	12,136	2,607	202		30,090
2002				22	15	134	3,225	7,442	4,101	874	82		15,895
2003				7	2	95	2,924	5,198	8,009	1,362	55		17,652
2004				7	79	516	3,438	2,687	10,905	1,042	53		18,727
2005				7	7	150	1,691	2,986	5,715	1,805	111		12,472
2006				18	26	87	983	2,934	5,583	723	54		10,408
2007				10	41	51	1,217	5,201	6,581	1,960	122		15,183
2008				25	100	452	3,572	5,409	6,004	1,038	125		16,725
2009				24	34	78	2,330	13,537	19,965	4,034	91		40,093
2010				63	23	229	6,634	9,933	8,150	1,333	111		26,476
2011				14	27	29	1,089	10,012	7,780	1,740	66		20,757
2012				64	26	149	1,879	6,586	7,024	1,364	138		17,230
2013				24	28	124	1,219	4,678	6,834	1,993	111		15,011
2014				63	50	160	2,623	5,112	9,741	1,917	177		19,843
2015				24	12	305	1,564	4,735	6,206	1,376	94		14,316
2016				11	12	354	1,334	1,212	2,905	630	40		6,498
2017				14	18	103	310	794	3,462	1,067	36		5,804
2018				17	15	78	791	671	2,750	517	79		4,918
2019				10	13	11,352	618	800	1,775	650	35		15,253
TOTAL	40	56	288	4,344	9,175	19,959	80,833	225,206	325,036	81,774	5,170	63	751,944
10-Year Average				30	22	1,288	1,806	4,453	5,663	1,259	89		14,611

ROCK ISLAND DAM

Fish Counting Schedule

Jan 1 – Apr 13	No video recording or fish counting during this period.
Apr 14 – Nov 15	Video recording 24 hours per day/7 days a week. Video counting daily from 0700 to 1530 hours Pacific Standard Time.
Nov 16 – Dec 31	Video recording 24 hours per day/7 days a week to monitor bull trout passage.

Fish Ladder Operating Schedule

Left Bank Ladder

Jan 1 – Jan 6	Fishway in service.
Jan 7 – Jan 25	Fishway out of service for 2018/2019 annual maintenance period.
Jan 26 – Dec 8	Fishway in service.
Dec 9 – Dec 31	Fishway out of service for 2019/2020 annual maintenance period.

Middle Ladder

Jan 1 – Jan 27	Fishway in service.
Jan 28 – Mar 14	Fishway out of service for 2018/2019 annual maintenance period.
Mar 15 – Dec 31	Fishway in service.

Right Bank Ladder

Jan 1 – Feb 24	Fishway out of service for 2018/2019 annual maintenance period.
Feb 25 – Dec 31	Fishway in service.

Fish Facility Activities

The bypass trap at the 2nd powerhouse was operated by Chelan County PUD Natural Resource Department employees from 1 April through 31 August 2019. Juvenile fish were sampled daily during that time period. The annual bypass (biological) evaluation included the collection of species composition and fish condition data.

The adult fish PIT tag system was operational throughout the 2019 adult fish migration. In February, a new PIT tag system, consisting of four overflow antennas and four orifice antennas, was installed by Biomark, Inc. in the lower right bank ladder for the purpose of improving PIT tag detection efficiency within the ladder and across the entire project. PIT tag detections from all three fishways were uploaded daily to PTAGIS.

TABLE 161

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER ROCK ISLAND DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				7	5,794	17,556	25,066	5,328	7,398	4,069	649		65,867
STEELHEAD				50	28	24	507	967	1,877	788	65		4,306
SOCKEYE						8,884	48,660	993	17	8			58,562
COHO									1,651	11,276	627		13,554
PINK													0
TOTAL				57	5,822	26,464	74,233	7,288	10,943	16,141	1,341		142,289
LAMPREY						2	177	524	361	3			1,067
BULL TROUT					8	14	2						24

TABLE 162

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Apr 1												65.0	0.0	41.3
Apr 2												65.6	0.0	41.4
Apr 3												55.9	0.0	41.6
Apr 4												71.3	0.0	42.0
Apr 5												58.5	2.3	42.2
Apr 6												56.7	0.1	42.1
Apr 7												56.6	0.3	42.2
Apr 8												74.5	0.0	42.2
Apr 9												62.7	0.1	42.2
Apr 10												65.8	0.0	42.5
Apr 11												66.0	0.0	42.4
Apr 12												60.0	0.0	42.6
Apr 13												62.9	0.0	42.8
Apr 14	0							9	4			56.1	0.0	42.6
Apr 15	0							4	3			77.1	0.0	42.5
Apr 16	0							4	1			89.4	0.0	42.5
Apr 17	0							2	1			86.8	9.3	42.7
Apr 18	0							1	0			96.3	9.1	43.0
Apr 19	0							2	1			72.3	7.2	43.2
Apr 20	0							3	3			70.7	7.2	43.4
Apr 21	0							3	2			57.8	7.2	43.7
Apr 22	0							2	0			104.6	7.2	44.0
Apr 23	0							2	2			111.4	7.2	43.6
Apr 24	0							2	1			112.8	9.7	44.5
Apr 25	2							7	2			133.8	11.6	44.9
Apr 26	0							2	1			119.3	10.0	44.6
Apr 27	0							3	1			104.8	10.0	44.6
Apr 28	0							1	1			105.1	10.0	44.5
Apr 29	1							1	0			129.2	10.0	44.5
Apr 30	4							2	0			128.6	12.3	44.9
TOTAL	7							50	23			82.6	4.4	43.0
AVG.	0							3	1			82.6	4.4	43.0

TABLE 163

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
May 1	1			0				0	0	0		124.0	12.4	44.3
May 2	1			0				2	1	0		113.8	13.0	45.1
May 3	2			0				0	0	0		111.3	11.8	44.7
May 4	3			0				3	1	0		106.4	10.7	45.3
May 5	5			0				1	0	0		98.7	11.3	46.3
May 6	0			0				0	0	0		120.5	12.5	47.3
May 7	2			0				2	1	0		101.8	12.3	48.1
May 8	13			0				2	2	0		114.0	11.4	48.7
May 9	14			0				2	0	0		125.9	14.5	49.0
May 10	23			0				3	2	0		157.6	15.0	49.3
May 11	26			0				3	1	0		148.3	16.5	49.6
May 12	77			0				0	0	0		136.2	13.4	50.0
May 13	141			1				3	3	0		140.6	14.8	50.0
May 14	263			0				1	1	0		154.1	15.7	49.9
May 15	234			1				0	0	0		169.2	22.7	50.3
May 16	290			2				1	0	0		179.1	35.9	50.1
May 17	304			3				0	0	0		157.7	18.4	49.6
May 18	469			8				0	0	0		179.6	26.6	50.0
May 19	394			9				1	1	0		178.4	29.3	50.6
May 20	335			19				1	0	1		168.0	23.1	51.1
May 21	368			17				0	0	0		174.6	34.4	51.0
May 22	294			25				0	0	0		153.7	17.0	50.2
May 23	319			28				0	0	1		148.7	16.5	51.7
May 24	261			37				1	1	0		137.1	14.4	51.9
May 25	316			48				0	0	0		141.6	14.2	52.6
May 26	276			26				1	1	0		152.2	13.9	52.4
May 27	186			35				0	0	0		157.5	16.6	52.4
May 28	266			47				0	0	1		150.8	15.5	52.9
May 29	215			33				1	1	2		151.4	15.4	53.2
May 30	181			44				0	0	3		175.4	20.0	53.9
May 31	99			33				0	0	0		177.2	25.4	54.7
TOTAL	5,378			416				28	16	8				
AVG.	173			13				1	1	0		145.3	17.6	49.9
RUN YEAR		CHINOOK ADULT	CHINOOK JACK					SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT			
TOTALS TO DATE														
SPRING		5,385	416					0	78	39	8			

TABLE 164

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jun 1	165			55			0	0	0	2	0	139.1	14.9	55.1
Jun 2	100			19			0	0	0	1	0	137.9	26.8	55.5
Jun 3	127			24			0	0	0	2	0	124.8	26.6	56.2
Jun 4	185			15			0	2	0	0	0	130.0	26.1	56.6
Jun 5	120			21			0	1	0	0	0	131.4	25.4	56.8
Jun 6	199			28			0	1	1	0	0	144.9	25.4	56.4
Jun 7	224			48			0	1	1	0	0	105.4	22.0	55.8
Jun 8	111			27			0	1	1	1	0	114.2	24.5	55.5
Jun 9	151			10			0	0	0	1	0	120.0	20.0	55.5
Jun 10	118			14			2	0	0	0	0	135.0	20.3	55.5
Jun 11	158			8			2	1	1	0	0	139.5	31.6	56.1
Jun 12	152			15			6	0	0	1	0	139.2	28.3	56.5
Jun 13	196			19			5	0	0	0	0	134.1	27.3	57.2
Jun 14	321			15			9	0	0	0	0	111.1	23.5	57.5
Jun 15	300			21			8	2	2	0	0	110.1	24.3	58.0
Jun 16	483			12			31	0	0	1	0	79.7	20.5	58.7
Jun 17	293			16			37	0	0	0	0	95.5	23.5	59.6
Jun 18	623			10			67	0	0	2	1	101.3	23.5	59.8
Jun 19	780			16			146	0	0	0	0	115.5	22.1	60.1
Jun 20	967			20			215	0	0	0	1	136.2	22.5	59.8
Jun 21	1,187			25			201	2	1	0	0	124.4	20.7	58.8
Jun 22	1,036			31			282	2	2	0	0	81.2	19.5	58.5
Jun 23	695			16			334	2	2	0	0	73.5	15.4	58.3
Jun 24		881		12			429	2	2	0	0	112.8	16.8	58.6
Jun 25		852		11			651	0	0	1	0	116.5	23.4	58.9
Jun 26		1,016		16			675	0	0	1	0	120.1	22.9	58.8
Jun 27		1,795		21			1,164	2	2	0	0	106.6	22.1	58.7
Jun 28		851		20			1,156	0	0	0	0	114.4	22.2	58.5
Jun 29		1,133		27			1,315	4	4	0	0	102.3	18.0	58.6
Jun 30		1,721		24			2,149	1	1	1	0	103.7	18.2	59.0
TOTAL	8,691	8,249		616			8,884	24	20	14	2			
AVG.	378	1,178		21			296	1	1	0	0	116.7	22.6	57.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	14,076	901
SUMMER	8,249	131
TOTALS	22,325	1,032

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
8,884	102	59	22	2

TABLE 165

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jul 1		792		11			1,921	4	2	0	0	112.2	19.6	59.7
Jul 2		1,385		21			2,535	0	0	0	3	97.0	21.9	60.5
Jul 3		814		12			2,497	5	5	0	3	94.9	19.9	60.8
Jul 4		1,327		13			2,740	4	4	0	1	83.8	14.9	61.1
Jul 5		769		32			2,927	9	7	0	6	83.3	15.8	61.6
Jul 6		1,077		35			3,023	9	8	0	8	77.9	14.4	62.1
Jul 7		1,488		30			2,146	3	2	0	6	80.0	14.6	62.0
Jul 8		1,238		33			4,070	16	9	0	5	86.9	18.3	62.2
Jul 9		1,228		19			3,396	11	9	0	4	89.9	17.8	62.8
Jul 10		738		26			3,163	10	8	0	2	88.4	17.8	62.6
Jul 11		1,074		46			2,871	15	12	0	6	92.4	19.4	62.8
Jul 12		1,047		46			2,299	9	8	1	6	110.1	17.5	62.4
Jul 13		993		52			2,245	16	14	1	1	85.4	16.0	62.3
Jul 14		806		49			1,491	20	18	0	4	77.0	13.8	62.5
Jul 15		927		79			1,718	26	18	0	1	85.5	21.4	62.6
Jul 16		622		24			1,543	9	8	0	2	102.1	19.2	63.2
Jul 17		847		34			1,203	13	10	0	5	110.8	19.8	63.8
Jul 18		633		38			1,181	20	14	0	9	103.9	18.7	63.7
Jul 19		731		55			1,040	14	12	0	9	104.2	18.9	63.7
Jul 20		551		43			806	20	17	0	6	89.6	17.9	63.7
Jul 21		509		41			619	13	5	0	5	78.9	15.3	63.7
Jul 22		420		53			402	16	13	0	5	102.4	21.7	63.6
Jul 23		552		19			566	21	14	0	11	107.8	20.2	64.1
Jul 24		491		24			469	24	15	0	8	95.3	20.3	64.3
Jul 25		523		43			374	13	10	0	4	96.3	20.1	64.4
Jul 26		482		40			314	28	17	0	8	100.7	19.6	64.3
Jul 27		428		35			311	48	32	0	7	79.3	19.1	64.4
Jul 28		343		32			239	33	27	0	12	87.6	19.3	64.7
Jul 29		311		15			219	23	17	0	9	104.1	24.4	65.1
Jul 30		402		24			164	25	17	0	13	118.3	25.3	65.6
Jul 31		460		34			168	30	17	0	8	126.3	24.5	65.5
TOTAL		24,008		1,058			48,660	507	369	2	177			

AVG.		774		34			1,570	16	12	0	6	95.2	18.9	63.1
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	14,076	901
SUMMER	32,257	1,189
TOTALS	46,333	2,090

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
57,544	609	428	24	179

TABLE 166

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT		FALL	CHINOOK	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F
	SPRING	SUMMER		JACK	ADULT								
Aug 1		427		29		135	40	26		9	126.9	22.2	65.6
Aug 2		361		42		129	33	18		7	101.9	20.2	65.5
Aug 3		212		53		85	25	18		2	108.3	22.1	65.2
Aug 4		305		43		78	45	29		10	86.6	15.3	65.7
Aug 5		206		25		74	22	13		11	104.4	23.5	66.2
Aug 6		314		12		113	27	17		12	110.6	23.6	66.3
Aug 7		226		21		56	41	25		12	114.5	19.4	66.7
Aug 8		202		8		53	40	29		27	99.3	20.1	67.1
Aug 9		184		22		38	37	26		18	88.9	19.7	66.9
Aug 10		161		37		32	32	22		6	77.8	17.5	66.7
Aug 11		137		34		21	21	11		26	85.2	17.7	66.3
Aug 12		148		11		33	24	17		22	94.3	20.6	66.5
Aug 13		150		11		20	27	17		11	103.7	18.5	66.6
Aug 14		134		9		22	47	18		10	101.9	22.7	66.8
Aug 15		112		20		14	41	26		7	97.6	17.5	66.8
Aug 16		153		9		15	35	23		29	74.2	15.9	66.5
Aug 17		113		12		13	20	8		9	69.9	15.2	66.6
Aug 18		70		5		3	32	22		14	78.2	15.6	66.6
Aug 19		89		4		10	16	13		16	103.2	20.7	66.5
Aug 20		108		9		10	24	15		15	110.6	3.9	67.1
Aug 21		91		11		7	35	27		35	94.5	0.0	67.4
Aug 22		64		11		7	21	14		31	90.8	3.2	67.2
Aug 23		87		11		5	28	22		18	91.3	0.0	67.0
Aug 24		130		8		2	24	11		8	65.2	0.0	66.8
Aug 25		123		16		3	35	25		11	74.6	0.0	66.4
Aug 26		102		4		2	40	24		6	80.3	0.0	66.2
Aug 27		67		2		3	25	10		11	97.9	0.0	66.9
Aug 28		87		11		3	28	15		26	109.2	0.0	67.1
Aug 29		80		8		3	39	26		39	109.0	0.0	66.9
Aug 30		67		9		2	29	19		36	98.0	0.0	67.0
Aug 31		100		11		2	34	22		30	72.1	0.0	67.0
TOTAL		4,810		518		993	967	608		524			

AVG.	155	17	32	31	20	17	94.2	12.1	66.6
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	14,076	901
SUMMER	37,067	1,707
TOTALS	51,143	2,608

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
58,537	1,576	1,036	24	703

TABLE 167

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Sep 1		124		5	0	0	3	32	19		11	62.9	0.0	67.0
Sep 2			90	10	0	0	3	34	22		11	81.4	0.0	67.0
Sep 3			104	7	2	0	0	42	16		16	61.8	0.0	67.1
Sep 4			165	6	0	0	2	35	20		9	68.5	0.0	67.5
Sep 5			202	11	0	0	0	61	33		14	57.7	0.0	67.8
Sep 6			195	8	1	0	0	53	41		19	69.0	0.0	68.1
Sep 7			179	12	0	0	0	47	29		17	55.5	0.0	68.1
Sep 8			269	10	4	0	0	59	34		12	42.3	0.0	68.2
Sep 9			240	3	4	0	0	67	37		40	52.9	0.2	68.1
Sep 10			266	8	3	0	0	78	43		18	58.8	0.0	67.9
Sep 11			228	11	6	0	2	70	45		15	48.8	0.0	67.6
Sep 12			193	11	11	1	2	57	41		24	63.4	0.0	67.5
Sep 13			179	26	6	0	0	45	25		42	55.7	0.0	67.2
Sep 14			138	18	4	0	0	48	29		31	66.0	0.0	66.7
Sep 15			139	6	3	2	0	54	39		30	55.5	0.0	66.5
Sep 16			75	5	9	3	0	33	20		12	70.9	0.0	65.9
Sep 17			161	7	7	3	0	20	11		10	27.6	0.0	65.8
Sep 18			134	5	12	5	0	43	26		5	50.9	0.3	65.4
Sep 19			188	12	18	1	0	52	30		4	43.4	0.0	65.5
Sep 20			171	3	20	3	0	44	25		4	44.9	0.0	65.3
Sep 21			318	21	35	7	0	85	49		1	41.3	0.0	65.1
Sep 22			419	19	57	6	0	82	50		3	53.4	0.1	65.2
Sep 23			315	17	37	5	0	63	30		1	52.7	0.0	64.9
Sep 24			299	18	30	6	0	57	38		3	34.6	0.2	64.8
Sep 25			511	26	37	4	1	97	53		1	69.2	0.1	64.5
Sep 26			326	18	104	3	0	103	49		3	49.1	0.0	64.7
Sep 27			414	12	97	9	1	71	32		1	38.9	0.0	64.4
Sep 28			375	32	197	10	1	123	71		3	47.7	0.0	63.7
Sep 29			335	29	372	11	1	124	63		0	49.3	0.0	63.1
Sep 30			251	19	478	18	1	98	56		1	70.7	3.1	62.5
TOTAL		124	6,879	395	1,554	97	17	1,877	1,076		361			
AVG.			237	13	52	3	1	63	36		12	54.8	0.1	66.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	14,076	901
SUMMER	37,191	1,712
FALL	6,879	390
TOTALS	58,146	3,003

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
1,554	97	58,554	3,453	2,112	24	1,064

TABLE 168

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT									JACK
Oct 1			300	23	624	8	1	91	35		0	63.9	1.7	62.5
Oct 2			191	12	491	16	0	76	37		1	64.0	4.3	62.3
Oct 3			170	17	425	13	2	53	23		0	55.2	0.0	62.2
Oct 4			117	10	546	9	0	42	11		0	49.5	0.0	62.1
Oct 5			193	25	548	15	0	60	33		2	39.3	0.0	61.8
Oct 6			133	22	568	60	0	37	15		0	53.7	0.0	61.8
Oct 7			127	15	423	31	0	36	19		0	55.7	0.0	62.1
Oct 8			142	4	436	4	0	34	15		0	42.7	0.0	62.0
Oct 9			169	7	546	8	1	33	19		0	56.0	0.0	61.3
Oct 10			131	22	347	45	0	28	16		0	67.3	0.0	61.1
Oct 11			86	10	499	16	0	28	18		0	68.3	0.0	60.9
Oct 12			155	16	572	16	2	24	9		0	57.4	0.0	60.7
Oct 13			116	19	480	37	0	25	13		0	44.3	0.0	60.6
Oct 14			89	23	249	27	0	12	9		0	60.5	0.0	60.3
Oct 15			74	12	264	2	0	9	3		0	78.0	0.0	60.5
Oct 16			103	15	329	8	0	14	7		0	78.4	0.0	60.5
Oct 17			82	13	308	2	0	19	8		0	53.2	0.0	60.5
Oct 18			60	14	342	38	1	17	11		0	56.3	0.0	60.1
Oct 19			68	9	394	36	0	20	10		0	71.5	0.0	59.7
Oct 20			92	6	265	19	0	15	5		0	51.4	0.0	59.5
Oct 21			100	13	378	12	0	12	9		0	53.0	0.0	59.2
Oct 22			76	3	175	8	0	12	3		0	36.2	0.0	59.1
Oct 23			119	4	173	3	0	20	9		0	58.4	0.0	58.4
Oct 24			56	10	193	4	0	13	5		0	63.3	0.0	58.4
Oct 25			97	10	146	14	0	8	4		0	61.6	0.0	58.6
Oct 26			103	6	147	5	1	10	5		0	64.5	0.0	58.4
Oct 27			124	14	206	22	0	12	5		0	53.9	0.0	58.2
Oct 28			102	2	162	24	0	12	7		0	71.1	0.0	57.9
Oct 29			130	7	166	9	0	6	4		0	67.6	0.0	57.5
Oct 30			110	10	187	3	0	4	2		0	66.2	0.0	57.1
Oct 31			80	1	171	2	0	6	4		0	63.8	0.0	56.4
TOTAL			3,695	374	10,760	516	8	788	373		3			

AVG.			119	12	347	17	0	25	12		0	58.9	0.2	60.1
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
TOTALS TO DATE									
SPRING	14,076	901	12,314	613	58,562	4,241	2,485	24	1,067
SUMMER	37,191	1,712							
FALL	10,574	764							
TOTALS	61,841	3,377							

TABLE 169

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

NOVEMBER 2019

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER											
Nov 1			49	0	144	1		3	1		63.2	0.0	56.0
Nov 2			49	7	73	18		5	2		51.1	0.0	55.8
Nov 3			51	1	60	10		3	2		77.5	0.1	55.6
Nov 4			29	0	57	8		4	2		105.9	0.5	55.4
Nov 5			50	1	59	4		3	2		88.2	0.0	55.4
Nov 6			87	5	48	7		3	1		95.9	0.0	55.3
Nov 7			54	4	39	5		5	1		102.5	0.4	55.2
Nov 8			35	5	22	2		3	2		121.3	5.9	55.4
Nov 9			54	3	8	4		10	5		119.6	2.0	55.2
Nov 10			39	1	11	0		8	2		102.4	1.1	55.2
Nov 11			28	0	8	1		3	2		103.7	0.0	55.2
Nov 12			17	0	10	3		4	1		101.5	0.0	54.9
Nov 13			19	0	10	3		3	2		99.9	0.0	54.6
Nov 14			33	0	5	2		4	2		92.2	6.8	54.5
Nov 15			27	1	4	1		4	1		85.9	0.2	54.4
Nov 16											92.7	0.0	54.3
Nov 17											83.5	0.0	54.1
Nov 18											91.5	0.8	53.7
Nov 19											83.4	0.6	53.7
Nov 20											86.2	7.6	53.3
Nov 21											102.4	9.3	53.0
Nov 22											112.7	0.0	52.6
Nov 23											118.0	9.0	52.2
Nov 24											94.3	0.0	51.6
Nov 25											98.4	0.0	51.2
Nov 26											122.5	7.8	50.8
Nov 27											102.3	0.0	50.0
Nov 28											113.6	0.0	49.7
Nov 29											111.1	0.0	49.2
Nov 30											120.3	0.2	48.6
TOTAL			621	28	558	69		65	28				
AVG.			41	2	37	5		4	2		98.1	1.7	53.5

RUN YEAR	CHINOOK		COHO		SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
	ADULT	JACK	ADULT	JACK					
TOTALS TO DATE									
SPRING	14,076	901			58,562	4,306	2,513	24	1,067
SUMMER	37,191	1,712							
FALL	11,195	792							
TOTALS	62,462	3,405							

TABLE 170

**MONTHLY COUNT OF STEELHEAD
ROCK ISLAND DAM 1981 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1981						30	282	1,886	2,338	2,493	347		7,376
1982				118	113	8	157	2,246	4,260	2,785	192		9,879
1983				53	36	18	579	5,811	16,942	5,619	608		29,666
1984				88	220	180	1,962	7,925	10,507	3,687	527		25,096
1985				106	393	729	4,886	6,588	16,089	2,889	319		31,999
1986				145	168	192	3,383	10,036	5,883	2,731	347		22,885
1987				100	94	112	1,242	4,900	4,095	1,842	347		12,732
1988				193	156	173	737	2,813	3,446	1,523	200		9,241
1989				135	73	66	847	2,685	3,999	1,355	191		9,351
1990				55	46	99	953	2,385	2,577	736	93		6,944
1991				30	51	45	916	3,322	4,194	2,165	204		10,927
1992				86	193	315	1,603	2,821	5,714	1,599	145		12,476
1993				97	88	87	1,427	546	1,930	597	57		4,829
1994				29	16	50	631	1,151	2,181	1,437	125		5,620
1995				23	35	44	421	951	2,153	510	38		4,175
1996				17	34	27	303	2,224	3,701	920	79		7,305
1997				19	22	7	300	2,343	3,461	1,466	108		7,726
1998				20	13	29	449	726	2,486	1,141	98		4,962
1999				17	22	37	377	2,429	2,900	540	40		6,362
2000				18	5	74	1,356	3,299	4,974	727	63		10,516
2001				49	23	185	3,094	9,380	12,129	3,461	292		28,613
2002				53	20	85	2,327	6,374	5,144	1,200	79		15,282
2003				17	17	51	1,664	4,233	9,339	2,061	127		17,509
2004				50	108	363	2,518	2,983	11,794	1,658	73		19,547
2005				30	29	135	1,423	3,362	5,925	1,422	83		12,409
2006				44	19	23	693	2,332	5,175	1,032	64		9,382
2007				27	25	33	830	4,378	5,943	1,888	172		13,296
2008				163	109	292	2,749	5,868	5,819	1,206	82		16,288
2009				62	41	47	1,502	10,229	22,154	3,565	200		37,800
2010				103	21	100	3,994	8,946	7,472	1,441	102		22,179
2011				42	32	11	849	8,146	8,153	1,711	80		19,024
2012				98	75	108	1,410	6,186	5,959	1,464	154		15,454
2013				49	57	79	703	3,764	4,817	1,891	141		11,501
2014				195	81	98	1,193	3,777	7,092	2,389	212		15,037
2015				76	56	79	1,004	4,443	6,539	1,663	191		14,051
2016				24	19	114	981	1,458	3,376	1,120	74		7,166
2017				34	25	33	236	803	2,845	1,212	77		5,265
2018				48	15	60	586	881	2,659	841	139		5,229
2019				50	28	24	507	967	1,877	788	65		4,306
Total				2,563	2,578	4,242	51,074	155,597	238,041	68,775	6,535		529,405
10-Year Average				72	41	71	1,146	3,937	5,079	1,452	124		11,921

ROCKY REACH DAM

Fish Counting Schedule

Jan 1 - Apr 13	No video recording or fish counting during this period.
Apr 14 - Nov 15	Video recording 24 hours per day/7 days a week. Video counting daily from 0700 to 1530 hours Pacific Standard Time.
Nov 16 - Dec 31	Video recording 24 hours per day/7 days a week to monitor bull trout passage.

Fish Ladder Operating Schedule

Jan 1	Fishway in service.
Jan 2 - Feb 14	Fishway out of service for 2018/2019 annual maintenance period.
Feb 15 - Dec 15	Fishway in service.
Dec 16 – Dec 31	Fishway out of service for 2019/2020 annual maintenance period.

Fish Facility Activities

The adult fish PIT tag system was operational throughout the 2019 adult fish migration. In January, Biomark, Inc. upgraded the system to integrate the newest PIT tag technology. PIT tag detections from the fishway were uploaded daily to PTAGIS.

The juvenile fish bypass system was operated for fish passage from 1 April through 31 August 2019. Juvenile fish were sampled daily by Chelan County PUD Natural Resource Department employees during the same time frame. The annual bypass (biological) evaluation included the collection of species composition and fish condition data.

TABLE 171

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER ROCKY REACH DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				2	4,136	12,382	24,982	5,748	5,158	2,665	496		55,569
STEELHEAD				73	58	7	248	703	1,306	785	75		3,255
SOCKEYE						5,270	43,923	1,221	34	14	2		50,464
COHO								489		5,781	491		6,761
PINK													0
TOTAL				75	4,194	17,659	69,153	7,672	6,987	9,245	1,064		116,049
LAMPREY							151	416	337	2			906
BULL TROUT					18	36	7						61

TABLE 172

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

APRIL 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Apr 1												61.8	0.0	40.7
Apr 2												60.4	0.2	40.9
Apr 3												52.9	0.0	41.1
Apr 4												65.9	0.0	41.3
Apr 5												55.8	5.5	41.5
Apr 6												52.5	0.0	41.5
Apr 7												53.2	4.3	41.6
Apr 8												72.4	0.9	41.6
Apr 9												58.6	6.9	41.7
Apr 10												60.8	0.0	41.8
Apr 11												60.4	0.1	41.7
Apr 12												56.3	0.5	42.1
Apr 13												57.7	0.0	42.1
Apr 14	0							4	2			52.8	0.0	42.1
Apr 15	0							6	1			71.9	0.0	42.0
Apr 16	0							11	5			82.9	0.0	41.9
Apr 17	0							9	4			82.9	0.0	42.2
Apr 18	0							1	1			88.0	0.0	42.4
Apr 19	0							3	1			68.0	1.3	42.5
Apr 20	0							3	2			63.7	0.0	42.4
Apr 21	0							5	1			51.4	0.0	42.9
Apr 22	0							3	2			92.8	2.4	43.4
Apr 23	0							1	0			101.2	0.0	43.7
Apr 24	0							5	3			102.8	0.0	44.2
Apr 25	0							7	3			121.9	0.0	44.3
Apr 26	0							4	1			106.8	0.7	44.0
Apr 27	2							3	2			93.5	0.0	44.0
Apr 28	0							3	2			96.1	0.0	44.1
Apr 29	0							3	1			119.8	0.0	44.3
Apr 30	0							2	0			121.8	3.5	44.4
TOTAL	2							73	31					
AVG.	0							4	2			76.2	0.9	42.5

TABLE 173

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
May 1	0			0				0	0	0		113.8	1.8	44.3
May 2	1			0				1	0	0		105.2	0.0	44.7
May 3	0			0				2	0	0		102.2	0.0	44.6
May 4	1			0				1	0	0		98.4	0.3	45.0
May 5	2			0				7	3	0		91.1	3.2	46.1
May 6	6			0				5	1	0		111.8	0.0	46.9
May 7	3			0				6	2	0		93.3	0.0	47.7
May 8	1			0				4	2	0		103.0	0.0	48.2
May 9	5			0				4	1	0		115.5	9.1	48.4
May 10	9			0				5	3	0		146.6	18.9	49.1
May 11	17			0				4	3	1		129.8	3.9	49.2
May 12	15			0				2	1	0		119.3	2.3	49.5
May 13	53			1				1	1	2		124.7	1.3	49.5
May 14	88			0				2	2	0		139.8	0.8	50.1
May 15	170			0				1	1	0		158.6	18.5	50.1
May 16	164			1				0	0	0		168.4	34.5	49.7
May 17	189			0				1	0	0		141.9	27.3	49.4
May 18	280			4				1	0	0		169.4	31.5	49.9
May 19	347			1				3	1	0		166.3	24.6	50.5
May 20	285			1				3	2	2		154.9	17.3	51.0
May 21	245			10				1	0	1		165.1	22.2	50.8
May 22	228			11				1	0	1		142.6	3.8	50.6
May 23	235			12				1	1	0		136.3	2.7	52.0
May 24	226			28				0	0	1		124.9	0.0	52.5
May 25	265			16				1	1	0		127.7	0.0	52.5
May 26	207			20				0	0	2		137.9	3.1	52.4
May 27	171			17				0	0	2		144.1	4.0	52.1
May 28	201			14				0	0	1		136.1	0.0	52.5
May 29	249			35				1	1	3		138.6	0.0	52.9
May 30	117			28				0	0	2		163.2	19.0	53.8
May 31	126			31				0	0	0		166.3	21.3	54.5
TOTAL	3,906			230				58	26	18				
AVG.	126			7				2	1	1		133.4	8.8	49.7
RUN YEAR														
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	WILD STEELHEAD	BULL TROUT				
SPRING		3,908	230					131	57	18				

TABLE 174

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jun 1	63			6			0	2	0	1		124.3	2.5	54.8
Jun 2	125			23			0	0	0	3		124.8	12.2	55.3
Jun 3	98			12			0	2	1	1		114.2	12.7	56.2
Jun 4	107			8			0	0	0	3		117.6	12.2	56.5
Jun 5	89			16			0	0	0	1		123.4	11.7	56.6
Jun 6	88			17			0	0	0	3		134.8	9.2	56.0
Jun 7	85			14			0	0	0	4		98.7	9.0	55.4
Jun 8	131			17			0	0	0	0		108.7	9.2	55.2
Jun 9	76			13			0	1	0	2		112.6	9.2	55.1
Jun 10	49			2			0	0	0	0		128.6	12.9	55.2
Jun 11	54			3			0	0	0	0		131.2	12.3	55.8
Jun 12	83			2			2	0	0	1		132.4	12.2	56.0
Jun 13	69			9			2	0	0	2		126.7	12.8	56.4
Jun 14	113			3			1	0	0	2		104.0	10.8	57.0
Jun 15	169			1			10	0	0	1		103.9	10.8	57.7
Jun 16	202			5			11	0	0	0		74.4	9.1	58.6
Jun 17	390			1			29	0	0	1		94.1	10.7	59.3
Jun 18	200			1			29	0	0	3		96.1	9.7	59.5
Jun 19	434			4			49	0	0	2		108.5	9.2	59.9
Jun 20	472			3			89	0	0	1		130.5	9.6	59.0
Jun 21	773			8			128	0	0	2		118.2	8.7	58.2
Jun 22	916			3			136	0	0	0		77.0	9.2	57.8
Jun 23	1,085			15			242	0	0	0		71.2	6.4	58.2
Jun 24		756		10			313	2	2	0		109.3	6.4	58.2
Jun 25		709		5			293	0	0	0		114.1	11.3	58.5
Jun 26		832		6			419	0	0	1		114.2	9.7	58.4
Jun 27		903		9			659	0	0	1		101.4	9.6	58.3
Jun 28		1,145		9			801	0	0	0		109.8	9.6	58.1
Jun 29		876		4			801	0	0	0		97.6	8.4	58.5
Jun 30		1,042		19			1,256	0	0	1		100.0	8.4	59.0
TOTAL	5,871	6,263		248			5,270	7	3	36				
AVG.	255	895		8			176	0	0	1		110.1	9.9	57.3

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	9,779	416
SUMMER	6,263	62
TOTALS	16,042	478

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
5,270	138	60	54	0

TABLE 175

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jul 1		1,480		11			1,585	0	0	1	0	105.8	8.8	59.8
Jul 2		730		11			1,869	1	1	0	0	94.5	9.6	60.2
Jul 3		1,038		6			2,054	0	0	0	0	91.4	8.5	60.4
Jul 4		1,023		9			2,267	0	0	0	0	80.6	6.5	60.9
Jul 5		1,058		12			2,379	1	1	0	2	79.2	7.2	61.6
Jul 6		795		13			2,104	5	4	1	1	76.8	6.5	61.5
Jul 7		1,148		7			2,274	1	1	1	2	78.3	6.4	61.8
Jul 8		1,010		6			1,897	1	1	0	3	83.3	7.2	62.1
Jul 9		1,268		4			3,356	2	2	0	3	85.2	7.2	62.2
Jul 10		1,066		21			3,247	2	2	1	2	87.0	7.8	62.2
Jul 11		784		22			2,702	3	3	0	4	91.3	8.5	62.2
Jul 12		893		20			2,525	1	1	0	1	107.1	7.9	61.8
Jul 13		1,063		47			2,118	3	1	0	2	82.6	7.3	62.0
Jul 14		1,048		41			1,927	8	8	0	4	73.9	6.4	62.1
Jul 15		844		44			1,428	9	9	0	2	93.8	9.6	62.5
Jul 16		947		33			1,588	10	7	0	7	97.8	8.4	63.3
Jul 17		711		23			1,274	7	7	0	7	106.6	8.9	63.4
Jul 18		773		6			1,135	10	8	0	7	102.2	8.5	63.6
Jul 19		686		43			1,045	8	4	0	6	100.4	8.6	63.4
Jul 20		675		27			923	2	2	1	6	88.0	8.4	62.8
Jul 21		600		28			737	6	3	2	2	78.3	6.9	63.0
Jul 22		575		37			614	14	11	0	4	100.9	9.7	63.2
Jul 23		548		25			417	11	6	0	7	102.6	8.6	63.9
Jul 24		587		24			537	22	14	0	8	92.2	8.7	64.0
Jul 25		410		29			422	10	7	0	8	93.2	8.5	63.8
Jul 26		460		44			378	11	7	0	10	99.2	8.9	63.9
Jul 27		574		18			263	14	8	0	14	79.4	8.4	64.3
Jul 28		403		35			246	27	16	0	8	86.7	8.6	64.6
Jul 29		375		15			233	30	20	0	9	104.1	10.8	65.0
Jul 30		380		0			212	14	11	0	12	116.1	11.4	65.2
Jul 31		352		17			167	15	10	0	10	122.1	10.7	65.1
TOTALS		24,304		678			43,923	248	175	7	151			
AVG.		784		22			1,417	8	6	0	5	92.9	8.4	62.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	9,779	416
SUMMER	30,567	740
TOTAL	40,346	1,156

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
49,193	386	235	61	151

TABLE 176

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO COHO		SOCKEYE	WILD STEELHEAD		BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL		ADULT	JACK		STEELHEAD	STEELHEAD					
Aug 1		419		19			190	21	15		12	122.7	9.8	65.1
Aug 2		525		42			145	27	15		11	100.4	8.8	64.9
Aug 3		330		33			116	21	11		19	105.4	9.2	65.1
Aug 4		255		29			94	19	15		19	83.5	9.2	65.8
Aug 5		298		24			123	37	29		15	103.9	10.0	65.9
Aug 6		240		15			82	13	7		14	108.8	10.2	66.1
Aug 7		333		33			100	31	19		16	110.6	7.5	66.6
Aug 8		209		13			60	19	9		8	96.6	8.5	66.7
Aug 9		182		15			48	31	18		12	86.6	8.3	66.4
Aug 10		105		14			35	35	23		11	78.2	7.2	66.0
Aug 11		207		22			18	21	16		15	84.3	7.5	66.0
Aug 12		227		20			32	28	25		12	94.1	8.5	66.2
Aug 13		185		16			32	18	14		16	100.4	0.1	66.3
Aug 14		140		13			12	29	12		16	100.0	0.1	66.6
Aug 15		140		10			25	17	5		18	94.9	0.0	66.4
Aug 16		123		12			15	27	12		15	71.9	0.0	66.3
Aug 17		104		13			10	26	18		7	70.8	0.0	66.2
Aug 18		125		16			10	15	10		18	76.3	0.0	66.0
Aug 19		130		14			15	22	15		16	102.1	0.0	66.5
Aug 20		108		4			11	18	13		9	105.8	0.0	67.1
Aug 21		91		7			6	21	13		12	91.3	0.0	67.0
Aug 22		89		12			5	28	19		13	88.4	0.0	66.8
Aug 23		78		7			5	25	16		13	87.8	0.0	66.5
Aug 24		89		13			3	13	5		11	64.2	0.0	66.3
Aug 25		82		4			6	17	10		10	70.8	0.0	66.1
Aug 26		88		20			3	14	8		8	77.7	0.0	66.5
Aug 27		92		9			6	22	11		12	93.7	0.0	66.8
Aug 28		83		6			4	25	13		11	103.1	0.0	66.7
Aug 29		55		2			2	21	15		5	102.4	0.0	66.7
Aug 30		91		10			4	27	16		17	90.5	0.0	66.5
Aug 31		54		4			4	15	11		25	68.6	0.0	66.5
TOTAL		5,277		471			1,221	703	438		416			

AVG.	170	15	39	23	14	13	91.5	3.4	66.3
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE	9,779	416
SPRING	35,844	1,211
TOTALS	45,623	1,627

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
50,414	1,089	673	61	567

TABLE 177

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Sep 1		93		3	0	0	4	20	14	0	38	60.1	0.0	66.7
Sep 2			103	16	0	0	3	25	18	0	13	77.9	0.3	66.8
Sep 3			118	5	0	0	2	23	12	0	10	58.5	0.0	67.2
Sep 4			58	2	0	0	2	21	4	0	12	65.4	0.0	67.5
Sep 5			135	9	2	0	0	29	17	0	23	55.1	0.0	67.9
Sep 6			71	4	0	0	2	34	20	0	15	67.0	0.0	67.8
Sep 7			147	13	0	0	3	45	24	0	14	51.6	0.0	68.0
Sep 8			200	7	0	0	1	28	20	0	14	40.2	0.0	68.0
Sep 9			138	4	0	0	0	27	12	0	23	51.3	0.1	67.9
Sep 10			253	8	1	1	2	58	29	0	22	56.1	0.0	67.6
Sep 11			150	4	2	1	3	55	31	0	14	48.4	0.0	67.3
Sep 12			220	3	0	2	1	53	33	0	19	61.5	0.0	67.1
Sep 13			214	15	5	2	1	50	20	1	34	54.4	0.0	66.8
Sep 14			98	8	3	3	0	39	20	0	19	63.6	0.0	66.6
Sep 15			24	1	0	2	0	29	19	0	11	53.8	0.0	66.2
Sep 16			53	8	0	1	2	33	15	0	7	65.2	0.1	65.9
Sep 17			22	3	3	0	2	12	8	0	5	28.1	0.0	65.7
Sep 18			88	4	5	1	0	34	20	0	2	48.5	0.0	65.4
Sep 19			122	6	7	2	1	34	18	0	5	41.4	0.0	65.2
Sep 20			107	7	18	7	2	21	12	0	1	43.7	0.0	65.3
Sep 21			115	1	8	2	0	30	16	0	11	40.3	0.0	65.3
Sep 22			259	11	12	2	0	55	33	0	4	51.9	0.3	65.2
Sep 23			292	11	25	0	0	63	39	0	4	50.6	0.0	65.0
Sep 24			255	11	31	1	0	56	34	0	7	34.4	0.0	64.8
Sep 25			137	13	8	2	0	29	15	0	4	65.4	0.0	64.7
Sep 26			211	21	24	6	0	90	50	0	1	47.9	0.0	64.6
Sep 27			317	9	49	2	2	64	24	0	2	37.9	0.0	64.5
Sep 28			205	7	12	4	0	43	23	0	3	46.7	0.0	64.0
Sep 29			403	17	87	8	1	85	44	0	0	46.3	0.0	63.2
Sep 30			288	31	133	8	0	121	59	0	0	68.5	0.0	62.8
TOTAL		93	4,803	262	435	54	34	1,306	703	1	337			
AVG.			166	9	15	2	1	44	23	0	11	52.7	0.0	66.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	9,779	416
SUMMER	35,937	1,214
FALL	4,803	259
TOTALS	50,519	1,889

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
435	54	50,448	2,395	1,376	62	904

TABLE 178

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD					TROUT
Oct 1			126	10	232	1	3	85	47	0	0	59.9	0.0	62.7
Oct 2			181	10	163	5	0	60	32	0	0	60.7	0.0	62.4
Oct 3			82	13	268	11	1	61	27	0	0	53.0	0.0	62.3
Oct 4			36	4	184	7	0	32	7	0	0	47.7	0.0	62.2
Oct 5			85	6	186	5	1	23	3	0	0	38.1	0.0	62.4
Oct 6			109	12	201	2	0	45	29	0	1	50.9	0.0	62.5
Oct 7			116	17	273	19	1	37	20	0	0	53.4	0.0	62.4
Oct 8			122	13	322	3	1	42	12	0	1	42.9	0.0	62.2
Oct 9			117	11	180	9	0	47	27	0	0	52.8	0.0	61.8
Oct 10			97	8	189	5	1	32	16	0	0	62.9	0.0	61.5
Oct 11			56	6	213	7	0	24	13	0	0	64.6	0.0	61.4
Oct 12			45	4	195	9	0	27	16	0	0	53.6	0.0	61.1
Oct 13			67	18	264	7	0	21	10	0	0	42.4	0.0	60.9
Oct 14			67	14	251	17	0	15	7	0	0	57.2	0.0	60.9
Oct 15			43	6	171	5	0	9	3	0	0	74.5	2.9	61.0
Oct 16			92	5	192	6	0	15	6	0	0	72.6	0.0	60.7
Oct 17			55	10	164	19	1	18	9	0	0	49.8	0.0	60.5
Oct 18			29	7	137	10	1	12	3	0	0	54.6	0.0	60.2
Oct 19			70	11	167	16	0	18	12	0	0	64.5	0.0	60.2
Oct 20			43	5	211	19	0	17	11	0	0	48.4	0.0	60.0
Oct 21			54	3	135	12	1	17	6	0	0	49.2	0.0	59.6
Oct 22			120	6	249	9	0	13	5	0	0	33.1	0.0	59.4
Oct 23			76	3	92	5	1	14	6	0	0	52.2	0.2	59.3
Oct 24			58	1	109	9	0	27	16	0	0	57.2	0.0	59.3
Oct 25			68	5	90	9	0	10	4	2	0	55.1	0.0	59.2
Oct 26			69	2	118	13	0	14	6	0	0	57.4	0.0	59.1
Oct 27			66	7	77	14	1	18	8	0	0	49.0	0.0	58.9
Oct 28			90	1	117	22	1	9	5	0	0	64.0	0.0	58.7
Oct 29			61	2	109	8	0	10	4	0	0	63.0	0.0	58.3
Oct 30			79	2	115	4	0	10	5	1	0	58.9	0.0	57.4
Oct 31			61	3	117	3	0	3	2	0	0	58.5	0.0	56.8
TOTAL			2,440	225	5,491	290	14	785	377	3	2			

AVG.	79	7	177	9	0	25	12	0	0	54.9	0.1	60.5
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	9,779	416
SUMMER	35,937	1,214
FALL	7,243	484
TOTALS	52,959	2,114

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
5,926	344	50,462	3,180	1,753	65	906

TABLE 179

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

NOVEMBER 2019

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER											
Nov 1			66	4	91	2	0	4	0	0	59.0	0.0	56.5
Nov 2			42	0	73	8	0	7	2	0	47.9	0.0	56.3
Nov 3			65	3	47	12	0	5	2	0	73.6	0.0	55.8
Nov 4			23	1	45	5	0	4	3	0	99.2	0.0	55.8
Nov 5			36	0	53	0	0	1	0	0	80.1	0.0	55.7
Nov 6			37	0	31	1	1	3	0	0	90.5	0.0	55.5
Nov 7			42	3	30	8	1	5	4	0	97.9	11.3	55.6
Nov 8			33	3	21	6	0	4	1	0	116.1	29.3	55.7
Nov 9			13	0	16	0	0	1	1	0	115.9	29.4	55.5
Nov 10			20	0	5	2	0	11	8	1	97.8	16.5	55.6
Nov 11			34	1	9	2	0	6	1	0	98.1	13.1	55.2
Nov 12			27	0	3	0	0	4	2	1	97.0	11.1	55.1
Nov 13			8	0	2	1	0	4	2	0	93.8	11.3	54.9
Nov 14			8	0	9	6	0	10	4	0	88.7	9.9	54.6
Nov 15			27	0	3	0	0	6	2	1	81.1	6.4	54.6
Nov 16											88.6	6.8	54.4
Nov 17											77.5	2.9	54.1
Nov 18											88.8	1.6	54.0
Nov 19											77.6	0.0	53.8
Nov 20											82.2	0.0	53.6
Nov 21											96.8	1.2	53.2
Nov 22											106.3	7.0	52.8
Nov 23											112.6	13.9	52.3
Nov 24											86.0	0.0	51.8
Nov 25											96.0	3.9	51.4
Nov 26											117.8	12.2	50.8
Nov 27											94.2	0.0	50.3
Nov 28											102.8	0.0	49.9
Nov 29											104.7	0.0	49.3
Nov 30											111.7	0.0	48.8
TOTAL			481	15	438	53	2	75	32	3			
AVG.			32	1	29	4	0	5	2	0	92.7	6.3	53.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	9,779	416
SUMMER	35,937	1,214
FALL	7,724	499
TOTALS	53,440	2,129

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
6,364	397	50,464	3,255	1,785	68	906

TABLE 180

**MONTHLY COUNT OF STEELHEAD
ROCKY REACH DAM: 1981 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1981						14	173	1,309	1,827	1,691	300		5,314
1982				137	116	5	73	1,192	2,863	1,735	120		6,241
1983				31	18	2	334	3,525	11,329	4,048	411		19,698
1984				41	174	127	1,032	5,564	7,263	2,589	438		17,228
1985				63	273	523	3,547	4,152	11,133	2,646	381		22,718
1986				61	178	160	2,003	6,072	4,225	2,222	236		15,157
1987				67	75	80	567	2,574	2,361	1,210	244		7,178
1988				99	108	108	493	1,498	2,439	820	112		5,677
1989				62	41	30	458	1,442	2,721	1,134	151		6,039
1990				24	31	33	534	1,809	1,889	646	67		5,033
1991				19	26	63	584	2,346	2,996	1,473	138		7,645
1992				50	138	203	1,026	1,861	3,051	1,093	94		7,516
1993				49	52	24	346	869	1,066	379	31		2,816
1994				12	11	30	301	578	1,002	821	63		2,818
1995				18	12	9	147	398	827	315	32		1,758
1996				23	26	12	179	1,585	2,868	969	112		5,774
1997				40	15	1	192	1,789	2,901	1,576	208		6,722
1998				71	18	23	281	671	2,025	1,127	226		4,442
1999				35	16	46	198	1,518	2,361	557	84		4,815
2000				62	22	34	679	2,276	4,289	835	78		8,275
2001				83	33	83	1,861	6,843	9,827	3,025	290		22,045
2002				152	33	49	1,441	4,631	4,103	1,332	112		11,853
2003				46	4	40	1,154	3,393	6,649	2,211	153		13,650
2004				177	142	244	1,847	2,571	7,748	1,650	201		14,580
2005				278	85	60	762	2,430	4,589	1,423	83		9,710
2006				117	34	14	401	1,774	4,557	1,028	199		8,124
2007				93	75	46	507	2,777	4,247	2,227	174		10,146
2008				308	201	303	1,882	4,429	4,776	1,406	566		13,871
2009				302	134	49	967	7,355	17,011	3,509	220		29,547
2010				285	85	49	2,318	7,265	6,024	1,511	334		17,871
2011				327	263	25	516	5,368	6,566	2,105	110		15,280
2012				525	203	104	908	4,731	4,846	1,554	229		13,100
2013				94	63	32	448	2,758	3,719	1,932	158		9,204
2014				174	75	39	532	2,263	5,427	1,943	134		10,587
2015				74	38	29	550	3,314	5,172	1,541	176		10,894
2016				61	28	48	614	1,153	2,666	1,079	79		5,728
2017				90	33	23	85	478	2,069	1,152	58		3,988
2018				64	22	24	341	725	2,106	803	153		4,238
2019				73	58	7	248	703	1,306	785	75		3,255
Total				4,287	2,959	2,795	30,529	107,989	174,844	60,102	7,030		390,535
10-Year Average				177	87	38	656	2,876	3,990	1,441	151		9,415

WELLS DAM

FISH COUNTING SCHEDULE

The adult counting schedule at Wells Dam is from May 1 through November 15, though passage data is recorded each day of the year, and that data is available from Douglas PUD upon request. Fish are counted by reviewing digital-video files from previous days. From 1967 through 1997, counts were reported for a 16-hour period (0500-2100 PST). Since 1998, 24-hour counts (0000-2400) have been reported. Chinook are arbitrarily separated into three populations based upon date of passage through the ladders: Spring Chinook – May 1 through June 28, summer Chinook – June 29 through August 28, and fall Chinook – August 29 through November 15. Substantial overlap in spring, and summer Chinook passage occurs in June and early July, such that reported dam-passage counts over-represent actual spring Chinook numbers and under-represent actual summer Chinook numbers.

FISH LADDER OPERATING SCHEDULE

Other than during routine wintertime inspection and maintenance (performed on only one fishway at a time), the two fishways at Wells Dam operated continuously during 2019.

East Ladder Maintenance

January 7, 2019, to February 5, 2019, outage for inspection and maintenance.

West Ladder Maintenance

February 12, 2019 through May 1, 2019, outage for inspection and major maintenance.

JUVENILE PASSAGE FACILITIES

The juvenile bypass system at Wells Dam capitalizes on the hydrocombine design of the dam by using flow to the turbines to attract fish to bypass spillways located between turbine silos and above turbine intakes. During the juvenile salmonid outmigration, bypass baffles and barriers are installed in spillway intake slots to partially constrict the five even-numbered spillways, providing a strong flow net to the constricted intakes. This configuration provides for high bypass efficiency (92% to 96%) with no more than 10,200 cfs of total bypass flow, and any involuntary spill through the six unmodified, odd-numbered spillways provides additional non-turbine passage opportunity.

During periods when plant discharge exceeds the combined turbine and bypass capacity, excess water is passed through non-bypass spillways and bypass spillways as necessary for complying with Federal Energy Regulatory Commission (FERC) requirements for maintaining minimum automatic-gate-opening capacity under the *Wells Project Emergency Action Plan* and Washington Department of Ecology requirements for compliance with total dissolved gas (TDG) standards as directed by the FERC-approved *Total Dissolved Gas Abatement Plan* for the Wells

Project. When necessary, gates on non-bypass spillways are opened and bypass barriers and baffles on bypass spillways are removed sequentially with increasing flow in a prescribed order that concentrates involuntary spill in the center of the project over the discharge from active turbine units to minimize TDG. As discharge declines, bypass barriers are reinstalled and non-bypass spill gates closed in the reverse order in which they were removed and opened.

Douglas PUD operated the Wells bypass system in 2019 as guided by the Wells Habitat Conservation Plan (HCP) Coordinating Committee-approved *2019 Bypass Operating Plan*. Flow volumes during the 2019 freshet never reached the levels necessary to remove barriers either to maintain compliance with the EAP or to set up spill configurations to manage TDG.

The *2019 Bypass Operating Plan* was intended to provide non-turbine passage during no less than 95 percent of the juvenile HCP Plan Species migration passing Wells Dam. Bypass operations were initiated on April 9 at 00:00 hours, and operated continuously until terminated at 24:00 hours on August 19, for a total of 133 days. Douglas PUD achieved the HCP requirement to provide bypass operations during at least 95 percent of the juvenile salmon and steelhead migration passing Wells Dam, providing bypass passage during 100 percent of the yearling and subyearling Chinook, steelhead, and sockeye migrations, and 99.99 percent of the coho migration passing Wells Dam in 2019.

TABLE 181

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER WELLS DAM
2019

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*					3,049	6,688	19,807	4,570	2,526	1,401	210		38,251
STEELHEAD					113	11	146	591	988	883	96		2,828
SOCKEYE						2,935	45,378	1,464	71	14			49,862
COHO									156	3,439	493		4,088
TOTAL					3,162	9,634	65,331	6,625	3,741	5,737	799		95,029
LAMPREY							8	5	1				14
BULL TROUT					6	16	5						27

*Jacks included

TABLE 182

MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

MAY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
May 1	0			0				5	3	0		112.7	8.3	43.3
May 2	0			0				4	2	0		110.2	7.5	43.5
May 3	0			0				5	4	0		111.3	8.8	44.4
May 4	1			0				4	3	0		104.1	8.6	46.2
May 5	3			0				7	6	0		91.4	7.4	46.2
May 6	0			0				3	3	0		116.5	9.2	47.1
May 7	2			0				5	3	0		96.7	7.8	47.7
May 8	2			0				9	8	0		103.0	9.0	47.7
May 9	2			0				7	4	0		128.3	21.8	47.8
May 10	2			0				6	3	0		147.7	19.2	48.2
May 11	3			0				6	1	0		128.7	10.4	48.0
May 12	4			0				7	3	0		124.9	10.0	49.3
May 13	5			0				4	3	0		129.8	9.7	50.0
May 14	7			0				1	0	0		140.7	10.0	49.1
May 15	25			1				2	1	0		163.3	28.5	48.6
May 16	83			0				9	6	0		170.7	42.1	48.9
May 17	97			0				5	4	1		142.4	29.3	49.6
May 18	130			0				4	2	0		169.2	43.0	49.8
May 19	153			0				1	1	0		166.5	42.6	50.2
May 20	213			3				6	2	1		157.2	33.0	50.4
May 21	310			6				0	0	0		159.4	36.4	51.4
May 22	284			10				3	0	0		145.3	18.0	51.6
May 23	216			9				2	1	0		137.5	9.6	52.0
May 24	202			15				3	2	0		128.7	9.6	51.8
May 25	204			6				1	1	0		128.0	10.5	51.3
May 26	236			21				1	0	1		140.9	15.7	51.4
May 27	149			18				2	2	1		144.0	10.5	51.6
May 28	165			11				1	1	0		138.7	9.5	52.0
May 29	106			26				0	0	2		143.4	9.5	53.2
May 30	94			26				0	0	0		166.1	10.0	53.8
May 31	166			33				0	0	0		166.5	10.0	53.6
TOTAL	2,864			185				113	69	6				
AVG.	92			6				4	2	0		135.9	16.6	49.3
RUN YEAR														
TOTALS TO DATE														
SPRING				2,864				113	69	6				0

TABLE 183

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

JUNE 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jun 1	153			35			0	0	0	0		124.8	9.6	54.5
Jun 2	137			37			0	0	0	1		120.5	8.7	55.8
Jun 3	78			32			0	0	0	1		118.7	8.3	55.8
Jun 4	94			27			0	0	0	0		116.7	8.1	55.8
Jun 5	91			28			0	1	1	2		129.2	9.2	54.3
Jun 6	116			30			0	0	0	1		136.1	9.7	54.7
Jun 7	96			30			0	0	0	0		99.4	7.5	54.3
Jun 8	86			23			0	0	0	1		114.8	8.5	53.6
Jun 9	43			20			0	1	1	0		115.5	10.1	55.0
Jun 10	42			18			0	1	1	0		135.8	10.0	54.3
Jun 11	50			11			0	0	0	0		134.2	9.9	54.9
Jun 12	22			12			0	2	1	4		136.5	10.0	55.6
Jun 13	67			9			1	1	0	1		130.9	9.6	56.8
Jun 14	67			25			2	2	2	3		105.6	8.2	57.2
Jun 15	75			12			2	1	1	1		102.4	8.3	57.9
Jun 16	70			13			3	0	0	0		69.7	6.4	58.6
Jun 17	84			7			5	0	0	1		106.9	9.1	58.6
Jun 18	100			9			8	0	0	0		98.5	8.5	58.5
Jun 19	126			10			18	0	0	0		113.8	11.5	58.5
Jun 20	115			6			27	0	0	0		138.3	15.0	57.0
Jun 21	260			7			47	0	0	0		114.8	8.8	56.8
Jun 22	346			11			66	0	0	0		78.8	6.7	57.7
Jun 23	583			14			130	1	1	0		75.2	6.2	57.6
Jun 24	397			12			97	0	0	0		113.3	9.9	57.4
Jun 25	415			11			178	0	0	0		119.6	11.3	57.4
Jun 26	518			11			253	0	0	0		116.4	10.0	57.7
Jun 27	394			16			205	1	1	0		102.8	9.5	57.6
Jun 28	570			16			464	0	0	0		112.5	10.0	57.7
Jun 29		416		12			628	0	0	0		102.5	9.8	58.8
Jun 30		561		12			801	0	0	0		101.9	10.0	58.6
TOTAL	5,195	977		516			2,935	11	9	16				
AVG.	186	489		17			98	0	0	1		112.9	9.3	56.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,059	677
SUMMER	977	24
TOTAL	9,036	701

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
2,935	124	78	22	0

TABLE 184

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

JULY 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Jul 1		581		21			702	0	0	1	0	110.5	9.5	59.2
Jul 2		853		28			1,306	0	0	0	0	96.4	8.9	59.8
Jul 3		592		14			1,276	0	0	0	0	92.4	8.5	60.0
Jul 4		587		22			1,938	0	0	0	0	82.2	8.4	60.0
Jul 5		723		14			2,141	1	1	0	0	77.1	8.8	60.5
Jul 6		1,252		27			2,690	0	0	0	0	82.8	8.8	60.9
Jul 7		757		27			2,534	1	1	0	0	78.8	9.1	60.8
Jul 8		815		41			2,313	3	3	1	0	85.7	8.3	61.0
Jul 9		691		34			1,828	2	2	1	0	89.3	8.9	60.6
Jul 10		903		44			2,654	1	1	1	0	86.0	9.0	60.5
Jul 11		877		53			3,006	1	1	0	0	95.6	9.4	60.7
Jul 12		858		64			2,949	2	2	1	0	112.0	9.4	60.7
Jul 13		554		43			2,528	3	3	0	0	81.0	7.4	61.7
Jul 14		968		67			2,962	0	0	0	0	77.3	8.1	62.8
Jul 15		971		30			2,071	4	2	0	0	91.7	10.5	62.5
Jul 16		472		42			1,710	6	6	0	1	102.6	10.1	62.8
Jul 17		407		42			1,604	6	6	0	0	107.9	7.5	62.7
Jul 18		687		50			1,361	6	6	0	0	108.5	11.0	61.7
Jul 19		480		53			1,105	5	5	0	0	100.0	8.0	61.5
Jul 20		563		55			1,167	6	5	0	2	85.6	5.9	62.3
Jul 21		784		49			1,122	9	9	0	0	82.4	8.7	62.8
Jul 22		439		35			851	3	3	0	1	102.1	10.0	62.9
Jul 23		378		29			667	1	1	0	0	103.2	7.8	62.8
Jul 24		388		41			544	9	8	0	0	92.0	7.1	62.9
Jul 25		346		32			467	5	4	0	0	96.9	7.3	62.9
Jul 26		344		52			511	8	6	0	0	105.6	13.9	63.4
Jul 27		165		24			328	8	6	0	0	76.6	5.8	64.0
Jul 28		330		28			305	11	7	0	0	91.8	6.1	64.4
Jul 29		211		25			237	10	6	0	1	111.3	9.9	64.1
Jul 30		422		55			274	13	9	0	1	121.4	10.5	64.2
Jul 31		229		39			227	22	14	0	2	123.4	7.6	63.9
TOTAL		18,627		1,180			45,378	146	117	5	8			
AVG.		601		38			1464	5	4	0	0	95.2	8.7	62.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,059	677
SUMMER	19,604	1,204
TOTAL	27,663	1,881

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
48,313	270	195	27	8

TABLE 185

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

AUGUST 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Aug 1		206		17			156	21	14		0	127.0	8.4	64.2
Aug 2		319		52			222	12	8		0	102.5	8.6	64.7
Aug 3		224		30			152	13	11		0	111.8	9.9	64.9
Aug 4		140		21			112	18	17		0	85.9	8.7	65.1
Aug 5		291		32			101	12	6		1	107.2	10.7	65.5
Aug 6		156		21			119	19	13		0	113.5	11.2	65.7
Aug 7		229		31			84	17	14		0	109.9	8.8	65.3
Aug 8		90		16			55	13	10		0	100.0	8.7	65.2
Aug 9		107		22			71	15	8		1	88.0	6.9	65.4
Aug 10		136		30			66	18	11		1	82.2	6.6	65.4
Aug 11		168		34			52	20	12		0	82.9	6.1	65.6
Aug 12		108		28			36	25	18		0	99.8	8.7	65.7
Aug 13		140		26			26	16	11		0	104.7	10.4	65.4
Aug 14		132		31			20	21	18		1	110.9	13.6	65.2
Aug 15		106		22			21	15	11		0	89.6	8.0	65.1
Aug 16		88		18			25	24	18		0	74.2	7.5	65.5
Aug 17		85		22			24	17	12		0	71.1	7.3	66.0
Aug 18		92		27			19	22	18		0	78.0	8.9	66.6
Aug 19		76		18			16	33	20		0	108.8	16.8	66.5
Aug 20		45		13			7	24	15		0	105.8	0.0	66.2
Aug 21		108		13			9	20	10		0	90.0	0.0	65.8
Aug 22		120		25			9	18	8		0	90.9	0.0	65.4
Aug 23		91		6			8	25	18		0	85.7	0.0	65.8
Aug 24		49		6			6	22	14		0	69.0	0.0	66.3
Aug 25		73		7			5	19	14		0	74.3	0.0	66.3
Aug 26		102		13			3	10	8		0	78.8	0.0	66.0
Aug 27		149		8			4	19	14		0	98.3	0.6	66.0
Aug 28		56		5			4	16	13		0	108.6	4.8	65.9
Aug 29			129	12			10	27	20		0	104.9	3.9	65.7
Aug 30			79	3			11	20	10		1	88.7	0.0	65.7
Aug 31			53	14			11	20	12		0	67.1	0.0	66.3

TOTAL	3,686	261	623			1,464	591	406		5		93.9	6.0	65.6
AVG.	132	87	20			47	19	13		0				

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,059	677
SUMMER	23,290	1,798
FALL	261	29
TOTAL	31,610	2,504

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
49,777	861	601	27	13

TABLE 186

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

SEPTEMBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD					TROUT
Sep 1			48	10	0	0	6	18	12		1	66.7	0.0	66.9
Sep 2			99	12	0	0	5	17	10		0	78.9	0.0	67.3
Sep 3			67	5	0	0	4	15	11		0	61.1	0.0	67.3
Sep 4			79	14	0	0	2	23	18		0	66.3	0.0	67.2
Sep 5			29	6	0	0	5	21	13		0	60.3	4.1	67.3
Sep 6			101	6	1	0	2	19	7		0	67.7	0.0	67.0
Sep 7			64	9	0	1	5	23	15		0	52.1	0.0	66.9
Sep 8			54	8	0	0	1	34	24		0	42.5	0.0	66.6
Sep 9			104	8	0	2	6	33	14		0	52.4	0.0	66.6
Sep 10			109	2	1	4	1	27	19		0	51.7	2.6	66.3
Sep 11			70	0	1	2	3	32	25		0	49.1	0.0	66.1
Sep 12			107	10	2	1	4	38	19		0	60.4	0.0	66.2
Sep 13			101	2	1	0	4	40	24		0	57.9	0.3	66.3
Sep 14			42	1	2	0	1	41	27		0	64.0	0.6	66.0
Sep 15			77	2	0	2	2	28	17		0	57.3	1.7	65.4
Sep 16			46	9	1	3	1	34	15		0	61.3	0.0	65.4
Sep 17			25	3	2		2	31	19		0	30.5	0.0	65.1
Sep 18			44	7	1	2	0	29	15		0	48.0	0.0	64.9
Sep 19			65	4	2	1	4	36	23		0	43.4	0.0	64.8
Sep 20			52	9	0	1	0	30	18		0	40.9	0.0	64.8
Sep 21			51	4	2	2	4	28	14		0	42.3	2.2	65.2
Sep 22			123	8	6	2	1	42	24		0	43.9	1.0	65.3
Sep 23			86	5	3	1	0	32	17		0	50.7	2.6	65.1
Sep 24			120	5	10	1	1	42	21		0	39.1	0.0	64.8
Sep 25			99	5	15	2	2	46	24		0	61.9	0.0	64.6
Sep 26			44	7	22	0	2	48	23		0	46.0	0.0	64.8
Sep 27			117	13	10	2	0	44	31		0	38.8	0.0	64.6
Sep 28			73	6	7	0	1	44	33		0	49.3	0.0	64.2
Sep 29			163	11	19	1	1	50	26		0	46.1	0.9	63.4
Sep 30			70	6	15	3	1	43	22		0	66.2	0.3	62.8
TOTAL			2,329	197	123	33	71	988	580		1			
AVG.			78	7	4		2	33	19		0	53.2	0.5	65.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,059	677
SUMMER	23,290	1,798
FALL	2,590	226
TOTAL	33,939	2,701

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
123	33	49,848	1,849	1,181	27	14

TABLE 187

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

OCTOBER 2019

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD				
Oct 1			61	12	39	3	0	60	36		54.8	0.0	63.0
Oct 2			111	10	60	2	2	69	34		61.3	0.0	63.2
Oct 3			92	7	120	3	3	76	37		58.0	0.0	63.4
Oct 4			72	3	122	3	1	71	34		46.0	0.0	63.3
Oct 5			35	13	195	7	1	55	21		40.4	0.0	63.1
Oct 6			49	9	130	5	0	49	27		54.0	0.0	62.9
Oct 7			33	7	99	0	1	45	28		49.8	0.0	63.2
Oct 8			22	5	103	1	0	33	19		43.8	0.0	63.2
Oct 9			56	9	127	2	0	42	20		53.2	0.0	62.3
Oct 10			32	8	101	2	1	29	12		66.7	1.6	62.1
Oct 11			33	3	97	3	2	34	22		61.1	1.2	62.0
Oct 12			21	3	99	2	1	28	16		51.8	0.0	61.9
Oct 13			15	7	51	4	0	27	13		45.1	0.0	61.7
Oct 14			21	6	106	0	0	19	10		58.4	0.0	61.4
Oct 15			34	12	107	0	0	17	10		78.4	0.3	61.2
Oct 16			39	5	120	2	0	19	11		68.1	0.0	61.4
Oct 17			13	0	134	4	0	12	6		49.1	0.0	61.4
Oct 18			54	11	185	2	0	17	8		60.0	0.0	61.0
Oct 19			14	4	90	5	2	13	10		60.8	0.0	60.7
Oct 20			18	4	112	0	0	16	6		50.8	0.0	60.5
Oct 21			7	5	141	0	0	19	10		48.2	0.0	60.3
Oct 22			31	7	123	5	0	18	9		38.9	0.0	60.3
Oct 23			36	7	137	3	0	14	6		52.7	0.0	60.2
Oct 24			42	4	170	5	0	17	9		57.2	0.0	60.2
Oct 25			35	2	99	1	0	12	5		55.8	0.0	60.4
Oct 26			74	1	84	4	0	17	12		58.4	0.0	60.0
Oct 27			49	5	91	2	0	26	12		49.1	0.0	59.2
Oct 28			57	1	72	0	0	3	0		65.3	0.5	58.7
Oct 29			28	2	61	2	0	11	7		65.3	0.0	58.4
Oct 30			23	4	113	3	0	6	2		58.7	0.0	57.4
Oct 31			15	3	74	2	0	9	1		55.9	0.0	57.1
TOTAL			1,222	179	3,362	77	14	883	453				

AVG.			39	6	108	2	0	28	15		55.4	0.1	61.1
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	8,059	677
SUMMER	23,290	1,798
FALL	3,812	405
TOTAL	35,161	2,880

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
3,485	110	49,862	2,732	1,634	27	14

TABLE 188

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

NOVEMBER 2019

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Nov 1			12	0	72	3		10	5			58.8	0.0	56.8
Nov 2			40	3	75	3		7	3			48.5	0.0	56.7
Nov 3			35	3	73	4		7	3			82.7	0.0	56.3
Nov 4			25	1	62	1		8	3			97.3	0.0	56.3
Nov 5			5	1	28	2		7	4			82.5	0.0	56.4
Nov 6			5	0	40	2		9	8			92.8	0.0	56.4
Nov 7			6	1	33	1		4	5			102.4	1.0	56.1
Nov 8			12	0	33	0		5	3			115.1	3.2	56.2
Nov 9			12	0	18	0		5	2			114.4	0.0	55.9
Nov 10			11	2	8	1		6	6			96.8	0.0	55.7
Nov 11			11	0	8	1		6	3			94.5	0.0	55.6
Nov 12			9	0	12	2		4	3			98.8	0.0	55.4
Nov 13			5	0	4	0		8	5			91.9	0.0	55.2
Nov 14			7	0	5	1		8	6			88.2	0.0	54.9
Nov 15			4	0	1	0		2	2			85.0	0.4	54.7
Nov 16												83.4	0.0	54.6
Nov 17												81.1	0.0	54.4
Nov 18												88.2	0.0	54.2
Nov 19												69.7	0.0	53.9
Nov 20												86.6	0.0	53.6
Nov 21												101.7	0.0	53.1
Nov 22												110.6	0.0	52.5
Nov 23												111.4	0.6	52.1
Nov 24												85.4	0.0	51.6
Nov 25												98.5	0.0	51.3
Nov 26												116.0	0.0	51.1
Nov 27												96.9	0.0	50.5
Nov 28												90.8	0.0	49.6
Nov 29												106.9	1.7	49.6
Nov 30												115.5	2.3	49.3
TOTALS			199	11	472	21		96	61					
AVG.			13	1	31	1		6	4			93.1	0.3	54.0

RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
	SPRING	8,059	677	3,957	131	49,862	2,828	1,695	27
SUMMER	23,290	1,798							
FALL	4,011	416							
TOTAL	35,360	2,891							

TABLE 189

**MONTHLY COUNT OF STEELHEAD
WELLS DAM: 1976 - 2019**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1976					44	37	56	530	1964	1856	156		4,643
1977					37	22	38	1,034	818	2,849	526		5,324
1978					177	32	12	399	432	528			1,580
1979					72	2	22	1,212	938	1,040	355		3,641
1980					202	24	15	382	1,032	1,358	413		3,426
1981					139	23	107	212	1,702	1,401	513		4,097
1982					149	7	67	814	2,428	3,733	730		7,928
1983					26	2	145	1,891	10,728	5,294	1,327		19,413
1984					153	32	766	5,024	6,545	3,298	778		16,596
1985					220	401	2,675	3,387	9,822	2,821	541		19,867
1986					65	102	1,515	4,994	3,833	2,391	403		13,303
1987					13	29	413	1,897	1,668	1,236	237		5,493
1988					85	103	357	1,273	1,797	785			4,400
1989					43	11	351	1,168	2,223	804			4,600
1990					20	16	283	1,093	1,630	702	104		3,848
1991					14	8	361	2,054	3,078	1,923	313		7,751
1992					86	168	892	1,448	2,946	1,346	181		7,067
1993					48	10	240	706	883	490	23		2,400
1994					7	8	240	442	670	695	121		2,183
1995					5	6	77	160	509	188	**		945
1996					11	7	79	764	2,099	921	246		4,127
1997					38	6	82	868	1,758	1,199	156		4,107
1998					5	3	161	363	1,031	995	110		2,668
1999					13	33	106	903	1,941	446	62		3,504
2000					23	6	309	1,338	3,661	857	86		6,280
2001					30	34	947	5,404	8,326	3,339	403		18,483
2002					66	33	957	3,630	3,388	1,244	157		9,475
2003					21	10	456	2,346	4,618	2,320	192		9,963
2004					74	56	916	1,709	5,039	1,401	122		9,317
2005					63	14	366	1,590	3,287	1,738	145		7,203
2006					28	16	138	922	4,017	1,248	305		6,674
2007					45	18	250	1,605	3,332	2,033	217		7,500
2008					145	167	861	2,792	3,740	1,580	523		9,808
2009					70	37	502	4,777	15,992	3,813	252		25,443
2010					95	34	1,085	4,524	5,235	1,581	375		12,929
2011					123	4	242	3,274	5,873	2,377	176		12,069
2012					101	56	557	3,294	4,001	1,554	215		9,778
2013					64	28	247	2,180	2,767	1,792	144		7,222
2014					122	35	337	1,776	3,390	1,890	185		7,735
2015					37	37	333	2,596	4,243	1,662	235		9,143
2016					59	46	427	883	2,034	1,227	168		4,844
2017					35	30	87	456	1,587	1,445	115		3,755
2018					115	35	228	615	1,830	868	223		3,914
2019					113	11	146	591	988	883	96		2,828
TOTAL					3,101	1,799	18,451	79,320	149,823	73,151	11,629		337,274
10-Year Average					86	32	369	2,019	3,195	1,528	193		7,422

**Wells Dam did not count in November of 1995.