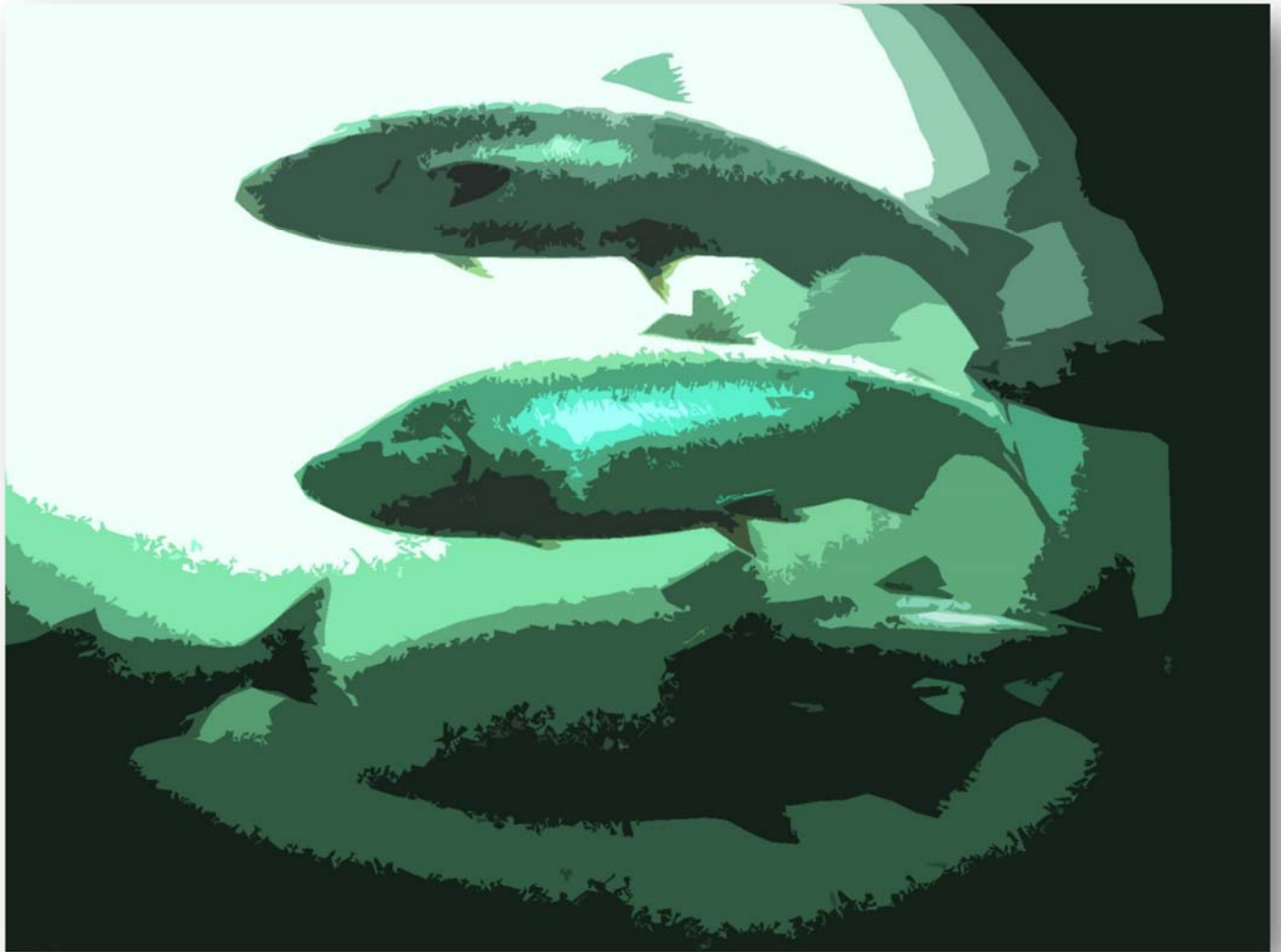




US Army Corps
of Engineers®
Portland District
Walla Walla District

Annual Fish Passage Report 2016



Columbia and Snake River Projects

2016

**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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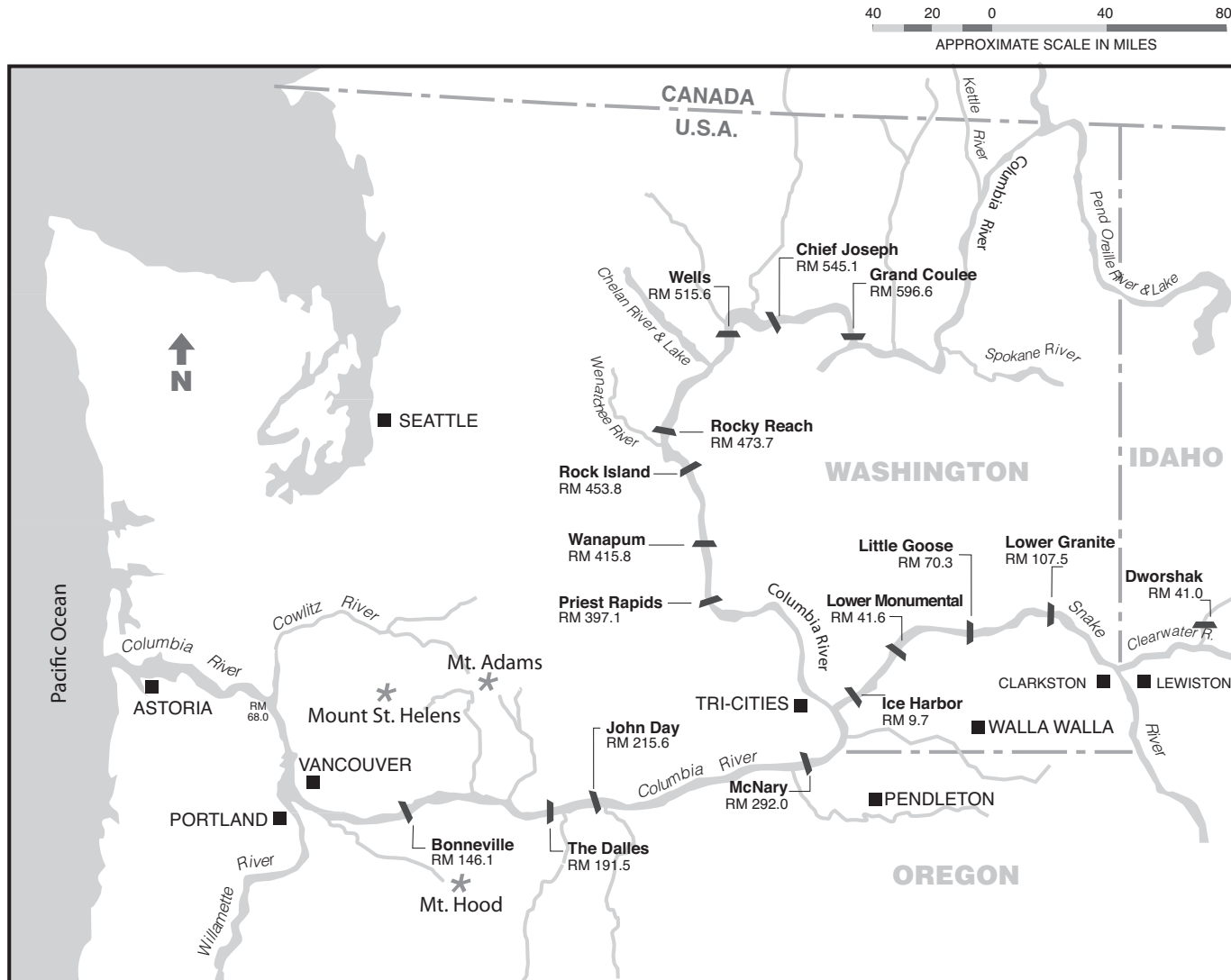


TABLE 1

FISH ESCAPEMENT AT MAIN STEM DAMS ON THE COLUMBIA AND SNAKE RIVERS: 2012-2016

SPECIES	BONNEVILLE	THE DALLES	JOHN DAY	M McNARY	ICE HARBOR	LOWER MONUMENTAL	LITTLE GOOSE	LOWER GRANITE
2012								
CHINOOK*	733,762	537,804	444,136	403,809	150,625	144,661	142,119	141,449
Spring*	165,666	124,244	114,410	107,550	74,862	71,499	71,696	69,891
Summer*	93,898	79,614	71,229	69,532	15,663	16,761	16,361	14,880
Fall*	474,198	333,946	258,497	226,727	60,100	56,401	54,062	56,678
Jacks	143,941	125,599	108,693	63,146	25,940	27,385	24,281	27,232
STEELHEAD	233,002	197,839	162,083	146,753	105,269	101,523	98,278	110,675
SOCKEYE	515,673	410,099	394,166	364,147	453	486	453	470
COHO*	59,921	33,898	33,859	18,201	2,985	2,501	2,662	2,635
Adults	54,882	31,037	30,216	16,776	2,653	2,216	2,402	2,433
Jacks	5,039	2,861	3,643	1,425	332	285	260	202
SHAD	2,432,394	**	**	675,421	175,936	**	**	7,413
LAMPREY	29,223	6,241	4,587	970	484	135	88	48
2013								
CHINOOK*	1,300,360	898,418	707,545	674,356	151,836	151,421	149,442	149,926
Spring*	117,118	101,507	85,948	74,449	56,620	55,523	54,515	54,971
Summer*	119,283	106,389	94,962	90,549	18,233	19,493	17,752	15,995
Fall*	1,063,959	690,522	526,635	509,358	76,983	76,405	77,175	78,960
Jacks	171,020	141,021	137,790	91,454	44,065	49,787	49,060	49,531
STEELHEAD	232,660	190,671	150,955	144,130	109,293	106,649	95,871	107,805
SOCKEYE	185,505	161,896	155,498	134,202	895	1,014	996	757
COHO*	66,336	26,682	17,528	13,880	2,405	2,325	2,136	2,454
Adults	59,239	24,110	16,163	12,127	2,026	2,005	1,727	2,096
Jacks	7,097	2,572	1,365	1,753	379	320	409	358
SHAD	3,751,375	**	**	1,246,494	193,525	**	**	1,892
LAMPREY	23,968	8,737	6,673	1,570	328	108	33	19
2014								
CHINOOK*	1,339,262	905,449	766,191	715,072	192,966	193,042	185,367	195,166
Spring*	214,171	164,222	142,300	123,180	91,726	93,962	91,615	92,899
Summer*	135,076	115,659	103,688	104,996	21,907	24,200	24,535	21,774
Fall*	990,015	625,568	520,203	486,896	79,333	74,880	69,217	80,493
Jacks	186,947	133,342	116,443	109,165	34,846	45,828	37,789	40,645
STEELHEAD	323,169	255,691	200,838	209,772	151,468	155,613	144,980	162,256
SOCKEYE	614,177	586,188	557,531	546,012	2,392	2,804	2,811	2,786
COHO*	291,849	157,646	115,840	112,587	16,077	19,411	21,468	18,648
Adults	277,078	146,803	107,853	98,553	15,330	16,599	17,917	18,095
Jacks	14,771	10,843	7,987	14,034	747	2,812	3,551	553
SHAD	2,603,269	**	**	937,826	90,790	**	**	1,206
LAMPREY	31,952	11,662	8,577	1,783	721	221	115	82
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	68,959.0	67,530
Summer*	130,425	104,564	97,974	90,395	15,518	14,804	14,399.0	14,223
Fall*	495,130	365,023	307,193	264,661	49,779	48,128	45,130.0	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

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.

TABLE 2
FISH ESCAPEMENT AT MID COLUMBIA RIVER DAMS: 2012 - 2016

SPECIES	PRIEST RAPIDS	ROCK ISLAND	ROCKY REACH	WELLS
2012				
CHINOOK*	138,487	92,074	68,059	52,846
Spring*	20,510	21,889	7,011	6,011
Summer*	52,661	57,485	50,748	41,859
Fall*	65,316	12,700	10,300	4,976
Jacks	13,500	9,661	7,457	5,388
STEELHEAD	17,230	15,454	13,100	9,778
SOCKEYE	408,257	410,620	363,314	326,107
COHO*	9,957	8,277	2,440	2,042
Adults	8,380	8,115	2,397	2,035
Jacks	1,577	162	43	7
SHAD	1,939	**	**	**
LAMPREY	4,025	1,048	805	3
2013				
CHINOOK*	371,726	158,253	129,190	82,762
Spring*	15,023	22,010	10,717	10,113
Summer*	74,257	75,613	67,639	53,715
Fall*	282,446	60,630	50,834	18,934
Jacks	22,994	19,138	14,254	8,824
STEELHEAD	15,011	11,501	9,204	7,222
SOCKEYE	163,078	159,219	131,660	129,993
COHO*	4,021	2,613	534	577
Adults	3,543	2,361	486	568
Jacks	478	252	48	9
SHAD	21,586	**	**	**
LAMPREY	5,968	2,157	1,626	21
2014				
CHINOOK*	242,755	145,104	103,168	83,506
Spring*	26,391	33,493	17,343	17,921
Summer*	83,323	82,283	65,140	55,244
Fall*	133,041	29,328	20,685	10,341
Jacks	19,897	16,681	12,865	11,054
STEELHEAD	19,843	15,037	10,587	7,735
SOCKEYE	608,142	581,121	492,892	490,804
COHO*	36,685	47,587	13,170	9,149
Adults	34,532	47,345	13,101	9,073
Jacks	2,153	242	69	76
SHAD	8,179	**	**	**
LAMPREY	7,586	2,451	3,799	7
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

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 1953-2016

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 - 2016

BY RUN-YEAR (JUNE 1 - MAY 31)

RUN-YEAR	THE DALLES	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
Total	10,809,095	8,485,912	8,417,462	5,658,140	4,902,313	3,757,132	4,628,421
10-Year Average	278,438	256,606	225,092	168,815	170,259	156,875	171,340

*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, 2012-16.

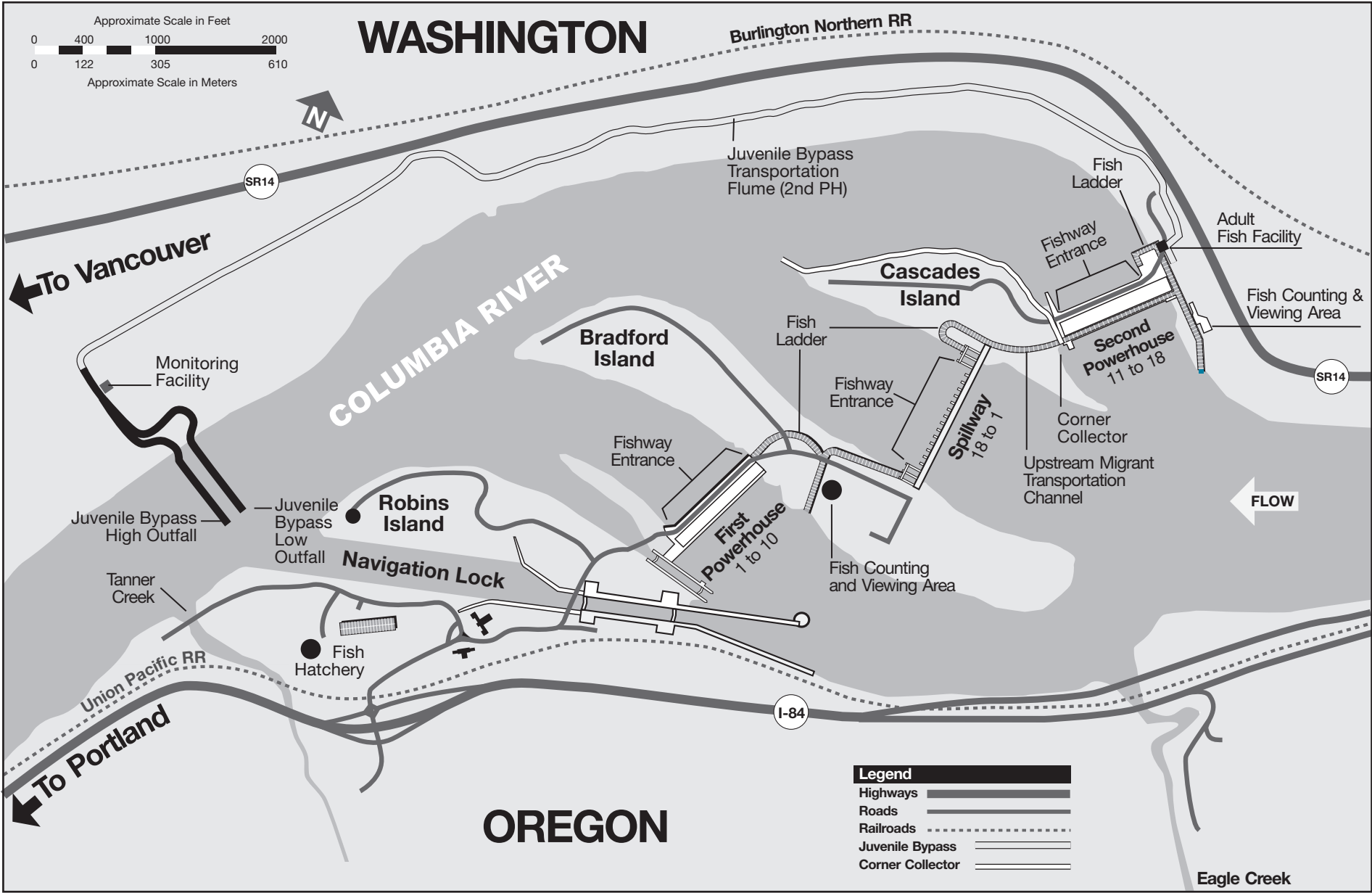
TABLE 4

STEELHEAD OVER MID COLUMBIA RIVER DAMS 1959 - 2016
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
Total	719,504	507,484	373,415	321,992
10-Year Average	19,602	17,399	13,856	10,833

*Partial year

Plate 2 Bonneville Lock and Dam



BONNEVILLE DAM

FISH COUNTING SCHEDULE

Jan 1 – Mar 31	Video 0400-2000 hours (PST)
Apr 1 – Nov 30	Visual 0500-2100 hours (DST)
May 15 – Sep 30	Night video 2100-0500 hours (DST)
Dec 1 – Dec 31	Video 0400-2000 hours (PST)

1. In 2015, daylight saving time (DST) is in effect from March 08–November 01 and hours are adjusted forward one hour from Pacific Standard Time (PST). DST = PST+1.

FISH FACILITIES OPERATION SCHEDULE

Fish Facility	OOS Date 2015	In Service Date 2016	OOS Date 2016	Reason for Outage
BI Lamprey Passage Structure	29 Oct 15	05 Apr 16	27 Oct 16	Winter maintenance
CI Lamprey Passage Structure	30 Sep 15	08 Apr 16	27 Oct 16	Winter maintenance
WS Lamprey Passage Structure	29 Oct 15	05 Apr 16	27 Oct 16	Winter maintenance
NDE Lamprey Flume System	31 Aug 15	N/A	N/A	OOS for LFS hatch and air turbulence repairs
Bradford Island Ladder	08 Dec 15	25 Feb 16	N/A	Winter maintenance
A-branch Ladder	08 Dec 15	26 Feb 16	N/A	Winter maintenance
B-branch Ladder	08 Dec 15	27 Feb 16	N/A	Winter maintenance
Cascades Island ladder	N/A	N/A	N/A	Winter maintenance
UMT	N/A	N/A	28 Nov 16	Winter maintenance
WA Shore Ladder	N/A	N/A	28 Nov 16	Winter maintenance
DSM	23 Dec 15	14 Jan 16	TBD	Pipe inspection, maintenance.
B2CC	01 Sep 15	05 Mar 16	01 Sep 16	Opens with spill
AFF	03 Dec 15	06 Apr 16	01 Nov 16	Winter maintenance
SMF	30 Oct 15	01 Mar 16	31 Oct 16	Winter maintenance

FISHWAY ACTIVITIES

The following are fishway modifications for the 2015/16 passage year:

- Modified Bradford crowder station to reduce lamprey mortality due to crowder run-over and those dying in area behind crowder. Perf plate in count slot, skirt in bottom of crowder, plating on sides of crowder.
 - LFS repairs. Divers replaced missing hatch, hydraulic air entrainment ‘dampener’ installed.
-

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, outside agency personnel, and other project personnel follow procedures outlined in the FPP and detailed in the Fish Salvage Plan to minimize impacts on fish. Adult fish recovered are typically released into the forebay above the new navlock with the exception of sturgeon which are usually released below the dam at Hamilton Island. Juvenile salmonids are also released below the dam at Hamilton Island. 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.

Bradford Island fishways (12/8/15): ~19 salmonids, ~135 White Sturgeon, 1 Pacific Lamprey, ~50 resident fish (Cyprinids, Catostomids, Clupeids).

Bradford Island junction pool (12/12/15): 5 Steelhead Trout.

B-branch diffuser pits (1/6/16): 12 Pacific Lamprey, 11 sculpin spp., 4 juvenile salmonids, numerous suckers and peamouth.

A-branch fishway (2/2/16): 1 Steelhead Trout.

Unit 10 tail logs (2/3/16): 1 White Sturgeon.

Unit 5 draft tube (6/7/16): ~20 Pacific Lamprey.

Unit 6 draft tube (6/8/16): ~45 Pacific Lamprey, 1 catfish, 1 sucker.

Unit 14 draft tube (6/14/16): 7 Pacific Lamprey, 1 catfish, 1 juvenile salmonid.

Unit 13 draft tube (7/18/16): 3 White Sturgeon, 3 catfish, 2 Pacific Lamprey

Unit 14 tail logs (7/20/16): ~30 sculpin spp., 4 Smallmouth Bass, 1 Pacific Lamprey

Unit 14 tail logs (8/3/16): 1 Smallmouth Bass

Unit 5 tail logs (8/09/16): ~20 sculpin spp., 12 crawfish

Unit 13 tail logs (8/29/16): 13 sculpin spp., 1 Pacific Lamprey macrophalmia, 1 Smallmouth Bass

Unit 18 draft tube (9/7/16): ~80 White Sturgeon, 6 Pacific Lamprey

Unit 15 draft tube (9/7/16): 1 White Sturgeon, 3 Pacific Lamprey

Unit 15 tail logs (10/25/16): ~15 crayfish, 12 sculpin spp., 1 Smallmouth Bass, 1 bluegill, 1 sucker

AFF (11/01/16): 3 adult salmonids, 2 White Sturgeon, 6 Pacific Lamprey, 1 sculpin spp, ~400 American Shad, ~100 resident fish (pikeminnow, suckers) and bass

Unit 18 tail logs (11/8/16): ~20 sculpin spp., ~6 Smallmouth Bass

WA shore to tailwater (11/28/16): ~20 Steelhead Trout, 4 Chinook Salmon adults, 1 White Sturgeon, ~50 Pacific Lamprey, ~400 suckers and minnows

PH2 South Monolith (11/30/16): ~ 6 sculpin spp.

UMT (11/30/16): ~6 Steelhead Trout, 4 adult salmon, ~300 suckers and minnows

WA shore to tailwater (12/1/16): 1 Pacific Lamprey, ~50 suckers and minnows

TABLE 5

MONTHLY TOTALS OF SALMONID, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER BONNEVILLE DAM.
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*	7	5	230	34,636	113,482	84,051	46,374	141,622	330,003	22,076	1,656	30	774,172
STEELHEAD	314	892	1,569	922	1,565	9,751	47,117	50,639	62,868	11,182	1,029	298	188,146
SOCKEYE	1				451	283,893	57,186	955	9	2	1	0	342,498
COHO*								2,807	30,250	13,491	952	9	47,509
CHUM								1	1	5	40		47
PINK							1	1	1	0			3
TOTAL	322	897	1,799	35,558	115,498	377,695	150,678	196,025	423,132	46,756	3,678	337	1,352,375
SHAD					53,855	1,541,004	169,585	5,859					1,770,303
LAMPREY	-1			10	3,429	8,808	26,671	12,130	1,162	111	4	0	52,324
STURGEON							3	9	8	9	1		30
BULL TROUT													0

*Jacks included

note: Counts were taken from 0400-2000 PST Jan 1 - Dec 31. Visual counting occurred Apr 1 - Nov 30.

Video counting occurred Jan 1 - Mar 31 and Dec 1-31.

TABLE 6

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

BONNEVILLE PROJECT - FISH COUNTS

JANUARY 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped			SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD				PINK	CHUM	KCFS	KCFS
Jan 1	2			1			0	18	8			0	149.0	0.5	5.0	41.0
Jan 2	1			0			0	21	9			0	151.1	0.5	7.0	40.0
Jan 3	0			0			0	6	2			0	150.7	0.5	5.0	40.0
Jan 4	0			0			0	15	7			0	148.2	0.5	7.0	40.0
Jan 5	0			0			0	17	6			0	147.5	0.5	7.0	39.0
Jan 6	-1			0			0	6	1			0	150.3	0.5	7.0	39.0
Jan 7	0			0			0	7	3			0	141.4	0.5	7.0	39.0
Jan 8	1			0			0	14	4			0	147.7	0.5	7.0	39.0
Jan 9	0			0			0	0	1			0	136.3	0.5	7.0	39.0
Jan 10	0			0			0	1	-1			0	136.3	0.5	7.0	38.0
Jan 11	0			0			0	4	1			0	157.4	0.5	7.0	38.0
Jan 12	3			0			0	0	0			0	145.5	0.5	7.0	38.0
Jan 13	0			0			0	2	1			0	150.2	0.5	7.0	38.0
Jan 14	0			0			0	5	2			0	132.2	0.5	7.0	38.0
Jan 15	0			1			0	2	2			0	136.8	0.5	7.0	38.0
Jan 16	0			0			0	13	3			0	162.0	0.5	7.0	38.0
Jan 17	0			-1			0	11	3			0	135.1	0.5	7.0	38.0
Jan 18	0			0			0	11	4			0	126.1	0.5	7.0	38.0
Jan 19	0			0			0	12	2			0	152.3	1.7	7.0	39.0
Jan 20	0			0			0	10	2			0	141.8	0.5	7.0	39.0
Jan 21	0			0			0	13	8			0	151.1	0.5	7.0	39.0
Jan 22	0			0			0	9	6			0	121.2	0.6	6.0	39.0
Jan 23	0			0			0	22	7			0	137.7	0.5	6.0	40.0
Jan 24	0			0			0	21	10			1	151.6	0.5	6.0	40.0
Jan 25	0			0			1	21	10			0	180.6	0.5	7.0	41.0
Jan 26	0			0			0	6	3			0	176.5	0.5	7.0	41.0
Jan 27	0			0			0	3	0			0	156.3	0.5	6.0	41.0
Jan 28	0			0			0	8	6			0	175.3	0.5	7.0	42.0
Jan 29	0			0			0	4	5			-2	178.6	0.5	7.0	41.0
Jan 30	0			0			0	11	6			0	181.8	0.5	7.0	42.0
Jan 31	0			0			0	21	10			0	197.2	0.5	6.0	42.0
TOTAL	6			1			1	314	131			-1				
AVG	0			0			0	10	4				151.8	0.5	6.7	39.5

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

BONNEVILLE PROJECT - FISH COUNTS

FEBRUARY 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO		unclipped					SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL		ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM						SECCHI	DEG F
Feb 1	0						14	6						172.1	0.5	7.0	42.0	
Feb 2	0						11	3						176.9	0.5	7.0	42.0	
Feb 3	0						10	1						166.5	0.5	7.0	42.0	
Feb 4	1						4	2						165.1	0.5	5.5	42.0	
Feb 5	0						10	3						140.5	0.5	7.0	42.0	
Feb 6	0						13	4						117.5	0.6	7.0	42.0	
Feb 7	0						28	13						125.0	0.5	7.0	41.0	
Feb 8	0						9	5						141.1	0.6	7.0	41.0	
Feb 9	0						11	4						150.3	0.5	7.0	41.0	
Feb 10	1						7	1						148.8	0.5	7.0	41.0	
Feb 11	0						5	3						167.1	0.5	7.0	41.0	
Feb 12	1						15	7						177.6	0.5	7.0	41.0	
Feb 13	0						26	9						181.0	0.5	7.0	41.0	
Feb 14	0						28	12						155.4	0.5	6.0	41.0	
Feb 15	0						92	40						166.2	0.6	6.0	41.0	
Feb 16	1						114	48						194.9	0.6	5.0	41.0	
Feb 17	0						51	17						247.8	0.6	5.0	42.0	
Feb 18	0						76	28						217.6	0.6	5.0	41.0	
Feb 19	0						62	32						201.1	0.7	7.0	41.0	
Feb 20	-1						28	12						193.6	0.8	5.0	41.0	
Feb 21	0						38	14						236.8	0.9	4.0	41.0	
Feb 22	1						37	21						213.7	0.1	5.0	41.0	
Feb 23	1						33	13						204.2	0.6	5.0	41.0	
Feb 24	0						18	6						188.9	0.6	6.0	41.0	
Feb 25	0						21	4						201.8	0.8	5.0	41.0	
Feb 26	0						39	16						209.2	1.2	6.0	41.0	
Feb 27	0						27	12						175.3	1.2	5.0	42.0	
Feb 28	0						27	8						166.5	1.1	6.0	42.0	
Feb 29	0						38	14						182.8	1.2	5.0	42.0	
TOTAL	5						892	358										
AVG	0						31	12						178.8	0.7	6.1	41.3	

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 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL					KCFS	KCFS						SECCHI	DEG F		
Mar 1	0			0				58	20						216.0	1.1	5.0	42.0
Mar 2	2			0				64	15						213.1	1.2	4.0	42.0
Mar 3	1			0				86	46						165.0	1.2	4.0	42.0
Mar 4	4			0				67	28						206.9	1.2	5.0	42.0
Mar 5	3			0				54	28						218.9	1.2	5.0	42.0
Mar 6	1			0				62	26						216.4	1.2	6.0	42.0
Mar 7	5			0				77	29						213.3	1.2	5.0	42.0
Mar 8	2			0				30	17						220.3	1.2	6.0	42.0
Mar 9	2			0				36	13						237.8	1.3	6.0	42.0
Mar 10	2			0				56	21						247.3	14.9	4.0	43.0
Mar 11	2			0				49	18						248.9	1.3	5.0	43.0
Mar 12	2			0				39	18						246.1	1.2	5.0	43.0
Mar 13	1			1				35	19						221.3	1.3	5.0	43.0
Mar 14	1			0				91	51						200.4	1.2	5.0	43.0
Mar 15	1			0				22	12						228.3	1.2	5.0	43.0
Mar 16	8			0				49	27						235.4	1.2	5.0	43.0
Mar 17	6			0				44	24						226.5	1.2	5.0	43.0
Mar 18	1			0				52	26						217.6	1.2	5.0	43.0
Mar 19	5			0				41	17						215.0	1.2	4.0	43.0
Mar 20	7			1				45	25						201.4	1.2	4.0	44.0
Mar 21	4			0				29	18						203.4	1.2	4.0	44.0
Mar 22	2			0				34	20						210.6	1.2	4.0	44.0
Mar 23	4			0				30	14						208.7	1.2	5.0	44.0
Mar 24	6			1				71	34						212.1	1.2	5.0	44.0
Mar 25	12			1				60	29						209.6	1.3	5.0	44.0
Mar 26	13			0				51	23						227.1	1.2	5.0	44.0
Mar 27	12			0				56	27						207.8	1.3	5.0	45.0
Mar 28	27			0				49	28						216.5	1.2	5.0	46.0
Mar 29	19			0				35	14						216.4	1.2	5.0	46.0
Mar 30	24			0				47	21						200.5	1.1	5.0	46.0
Mar 31	47			0				50	22						212.3	1.2	5.0	46.0
TOTAL	226			4				1,569	730									
AVG	7			0				51	24						216.8	1.7	4.9	43.4

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 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	STEELHEAD								SECCHI	DEG F
Apr 1	54			1				50	20				0		227.0	1.2	5.0	46.0
Apr 2	75			0				54	16				0		200.5	1.2	5.0	48.0
Apr 3	90			2				54	17				0		179.4	1.4	6.0	47.0
Apr 4	96			0				22	13				0		186.5	1.4	6.0	48.0
Apr 5	154			0				34	15				0		218.2	6.7	6.0	48.0
Apr 6	118			0				49	21				0		229.7	1.4	6.0	48.0
Apr 7	100			0				36	11				0		250.3	15.6	4.0	48.0
Apr 8	253			0				60	29				0		264.5	25.4	5.0	49.0
Apr 9	285			0				46	16				0		238.6	2.5	4.0	50.0
Apr 10	251			1				14	6				0		241.6	99.8	4.0	51.0
Apr 11	469			1				34	14				0		256.3	98.8	4.5	51.0
Apr 12	333			0				35	17				0		258.8	106.7	4.0	51.0
Apr 13	495			-1				29	11				0		272.6	100.3	4.0	51.0
Apr 14	447			0				24	16				0		301.6	121.4	4.0	51.0
Apr 15	466			0				34	16				0		316.5	132.2	3.5	51.0
Apr 16	373			2				29	17				0		339.0	149.2	3.0	51.0
Apr 17	279			2				29	15				0		327.6	127.0	3.5	51.0
Apr 18	588			4				21	2			2			327.4	132.9	4.0	52.0
Apr 19	550			10				26	11				0		310.8	120.8	3.5	52.0
Apr 20	784			5				23	6				0		307.8	118.6	4.0	53.0
Apr 21	2,704			18				36	17				0		295.0	106.6	3.5	53.0
Apr 22	3,236			9				20	10				1		331.3	144.8	5.0	53.0
Apr 23	1,510			13				13	2				1		350.3	163.2	4.0	53.0
Apr 24	1,030			9				27	10				2		347.4	159.7	4.0	53.0
Apr 25	1,157			15				18	7				1		350.8	164.5	3.5	53.0
Apr 26	849			8				9	1				0		336.9	150.7	4.0	53.0
Apr 27	1,050			10				23	1				1		306.6	120.0	3.5	53.0
Apr 28	3,084			30				13	4				0		304.9	119.9	4.0	53.0
Apr 29	6,695			73				22	8				2		303.4	118.6	4.5	53.0
Apr 30	6,728			121				38	6				0		296.1	111.3	5.0	53.0
TOTAL	34,303			333				922	355				10					
AVG	1,143			11				31	12						282.6	90.8	4.3	50.9
RUN YEAR		CHINOOK ADULT	CHINOOK JACK					unclipped STEELHEAD	unclipped STEELHEAD				LAMPREY					
TOTALS TO DATE																		
SPRING		34,501	336					1,687	736				10					

TABLE 10

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

BONNEVILLE PROJECT - FISH COUNTS

MAY 2016

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
May 1	10,155			302			0	36	9			0	4		285.3	100.4	5.0	54.0
May 2	13,907			422			0	40	11			5	2		273.0	100.3	5.0	54.0
May 3	10,860			436			0	31	4			23	7		254.8	100.1	5.0	54.0
May 4	7,461			444			0	49	7			19	12		260.4	101.0	5.0	56.0
May 5	4,079			275			0	27	9			43	0		249.3	101.1	5.0	56.0
May 6	4,250			384			0	50	9			25	-1		284.8	100.2	5.0	56.0
May 7	4,456			606			0	39	3			47	88		278.6	100.0	5.0	56.0
May 8	4,058			628			0	42	12			191	83		298.4	104.2	5.0	57.0
May 9	1,793			248			0	34	5			128	49		283.3	106.2	4.0	57.0
May 10	1,452			349			0	30	12			158	234		309.2	125.6	4.0	57.0
May 11	2,482			544			0	39	5			154	60		299.7	107.3	4.0	57.0
May 12	3,409			884			0	43	7			522	56		290.0	100.7	5.0	58.0
May 13	2,644			602			0	44	16			2,622	103		272.2	99.9	3.5	59.0
May 14	2,068			351			0	37	7			750	55		261.2	100.0	4.0	59.0
May 15	2,036			339			0	48	14			1,230	70		252.1	100.8	3.0	59.0
May 16	1,855			360			0	62	19			1,270	69		264.7	100.1	5.0	59.0
May 17	3,166			537			0	57	12			921	24		276.9	99.7	5.0	58.0
May 18	2,963			588			0	62	13			1,741	105		241.3	99.6	4.5	59.0
May 19	2,295			349			0	58	10			2,347	213		237.1	99.7	5.0	59.0
May 20	2,265			342			0	62	13			1,653	203		265.7	99.9	5.0	60.0
May 21	1,148			153			2	71	14			553	105		252.7	99.5	5.0	59.0
May 22	1,239			160			5	88	20			881	53		208.9	100.0	5.0	59.0
May 23	1,344			188			1	78	24			2,986	61		207.8	100.6	5.0	59.0
May 24	1,506			173			10	37	10			3,153	84		229.1	99.7	6.0	59.0
May 25	1,518			214			10	42	10			3,196	62		232.6	100.2	5.0	59.0
May 26	1,606			195			26	43	15			1,964	621		217.8	100.5	5.5	59.0
May 27	1,529			181			17	47	18			4,961	205		228.2	101.3	5.5	59.0
May 28	1,146			113			18	50	20			2,025	233		208.3	100.9	6.0	59.0
May 29	1,151			116			40	64	25			3,162	194		201.6	100.8	6.0	59.0
May 30	1,427			162			120	72	20			6,626	155		213.6	100.1	5.0	59.0
May 31	1,407			162			202	83	28			10,499	220		224.4	99.7	6.0	59.0
TOTAL	102,675			10,807			451	1,565	401			53,855	3,429					
AVG	3,312			349			15	50	13			1,737	111		253.6	101.6	4.9	57.8
RUN YEAR		CHINOOK	CHINOOK							unclipped								
TOTALS TO DATE		ADULT	JACK				SOCKEYE	STEELHEAD	STEELHEAD			SHAD	LAMPREY					
SPRING		137,176	11,143				451	3,252	1,137			53,855	3,439					

TABLE 11

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

BONNEVILLE PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped					SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM			KCFS	KCFS	SECCHI	DEG F		
Jun 1		2,089		208			280	110	39				45,523	250		194.5	98.9	7.0	61.0
Jun 2		1,692		156			361	117	40				33,412	300		204.5	98.9	6.0	61.0
Jun 3		2,010		207			565	153	47				44,791	219		220.3	99.8	5.0	61.0
Jun 4		1,961		190			807	197	69				50,625	235		210.8	99.9	4.0	61.0
Jun 5		1,775		151			944	157	53				80,068	363		223.3	100.3	5.0	63.0
Jun 6		1,815		139			1,008	137	46				71,753	344		236.4	100.2	6.0	63.0
Jun 7		2,605		193			1,969	199	69				98,565	366		236.4	99.8	6.0	64.0
Jun 8		2,372		158			1,648	194	59				75,489	169		220.7	100.1	5.0	65.0
Jun 9		2,270		141			2,112	178	50				34,020	170		217.5	100.7	5.0	63.0
Jun 10		2,608		225			3,411	228	74				21,885	180		204.0	99.2	5.0	64.0
Jun 11		2,638		180			4,515	232	90				20,558	173		212.3	99.3	7.0	63.0
Jun 12		2,659		222			6,660	242	93				42,922	163		200.3	99.6	7.0	63.0
Jun 13		2,339		209			8,764	196	69				60,440	229		180.0	99.6	6.0	64.0
Jun 14		2,500		174			7,233	182	84				32,514	131		194.6	100.3	6.0	64.0
Jun 15		4,066		321			10,477	315	115				49,912	192		187.4	100.8	7.0	64.0
Jun 16		3,545		395			12,243	320	128				54,892	128		192.6	96.5	7.0	64.0
Jun 17		2,770		298			14,064	300	127				91,502	486		197.5	73.1	5.5	64.0
Jun 18		2,003		300			12,899	263	100				73,972	461		186.1	95.7	7.0	64.0
Jun 19		2,949		282			22,142	335	106				38,073	344		175.0	95.1	7.0	63.0
Jun 20		2,274		275			20,300	308	124				55,841	348		178.9	94.9	7.0	64.0
Jun 21		2,288		230			18,783	382	154				52,555	326		201.6	95.4	7.0	64.0
Jun 22		3,392		201			17,352	529	244				83,666	195		188.5	95.2	7.0	64.0
Jun 23		3,208		202			23,518	480	218				53,310	186		187.0	95.5	6.0	64.0
Jun 24		3,412		257			21,412	430	199				39,376	188		175.7	95.3	6.0	64.0
Jun 25		2,909		291			16,466	514	248				45,102	132		186.6	95.6	7.0	64.0
Jun 26		2,717		192			12,114	495	232				52,410	239		194.3	91.0	7.0	64.0
Jun 27		2,585		237			12,999	552	255				45,970	490		198.6	95.9	7.0	64.0
Jun 28		2,216		186			10,373	456	187				39,498	700		196.1	97.3	7.0	65.0
Jun 29		3,042		214			10,620	741	350				31,774	413		192.8	94.7	6.0	66.0
Jun 30		2,756		152			7,854	809	397				20,586	688		174.8	90.9	7.0	66.0
TOTAL		77,465		6,586			283,893	9,751	4,066				1,541,004	8,808					
AVG		2,582		220			9,463	325	136				51,367	294		199.0	96.6	6.3	63.6

RUN YEAR	CHINOOK	CHINOOK	unclipped			SHAD	LAMPREY
TOTALS TO DATE	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD		
SPRING	137,176	11,143	284,344	13,003	5,203	1,594,859	12,247
SUMMER	77,465	6,586					
TOTAL	214,641	17,729					

TABLE 12

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

BONNEVILLE PROJECT - FISH COUNTS

JULY 2016

DATE	CHINOOK ADULT		CHINOOK COHO		unclipped						DISCH			SPILL		TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Jul 1		2,374		203			9,160	747	310	0		20,311	498	0	184.0	95.1	0.0	67.0
Jul 2		1,813		152			7,328	660	305	0		25,492	569	0	184.4	99.7	7.0	67.0
Jul 3		2,474		224			7,151	864	385	0		15,334	518	0	162.5	95.2	6.0	67.0
Jul 4		2,186		201			4,458	879	401	0		9,564	477	0	165.0	90.2	7.0	67.0
Jul 5		1,959		160			3,223	910	422	0		9,240	706	0	171.5	92.6	7.0	67.0
Jul 6		1,857		157			2,521	1,014	452	0		11,028	501	0	166.1	94.9	7.0	67.0
Jul 7		1,713		150			2,507	1,032	471	0		22,730	1,490	0	171.5	79.9	7.0	67.0
Jul 8		1,884		156			2,690	1,234	561	0		7,261	1,266	0	168.0	95.3	7.0	67.0
Jul 9		1,648		143			2,288	1,003	427	0		8,224	718	1	165.6	93.8	7.0	67.0
Jul 10		1,398		114			1,807	1,038	402	0		7,398	658	0	139.3	93.9	7.0	67.0
Jul 11		1,571		91			1,837	1,111	482	0		2,835	390	0	139.1	94.3	7.0	69.0
Jul 12		1,432		186			1,758	1,129	481	0		984	630	1	144.5	94.0	7.0	68.0
Jul 13		1,549		197			1,256	1,155	476	0		2,098	710	0	151.6	94.0	7.0	68.0
Jul 14		1,187		210			1,668	1,061	416	0		1,931	999	0	157.0	94.3	7.0	68.0
Jul 15		1,137		154			896	1,271	493	0		2,742	1,054	0	153.7	95.3	7.0	69.0
Jul 16		1,385		173			756	1,888	789	0		3,233	554	0	158.7	95.0	7.0	69.0
Jul 17		1,212		141			749	2,072	782	0		2,811	599	0	159.1	94.9	7.0	69.0
Jul 18		1,149		94			637	1,772	663	0		3,558	576	0	159.0	94.9	7.0	68.0
Jul 19		912		114			613	1,272	485	0		2,405	439	0	165.9	94.8	7.0	68.0
Jul 20		1,302		124			387	1,686	604	0		1,693	421	0	145.3	94.6	7.0	69.0
Jul 21		1,129		120			455	1,801	644	0		1,439	847	0	159.9	94.5	7.0	69.0
Jul 22		1,125		115			350	1,854	710	0		1,372	1,081	0	140.7	94.4	7.0	69.0
Jul 23		1,135		107			437	1,834	700	0		534	645	0	137.9	93.8	7.0	69.0
Jul 24		888		103			360	1,898	682	0		490	814	1	138.0	93.8	7.0	69.0
Jul 25		810		111			298	1,631	606	0		658	1,061	0	140.4	93.4	7.0	69.0
Jul 26		1,030		128			404	2,344	958	0		503	1,125	0	146.0	93.7	7.0	70.0
Jul 27		1,045		109			358	2,825	998	0		456	1,755	0	154.3	93.5	7.0	70.0
Jul 28		798		96			251	2,750	883	0		557	1,705	0	153.8	93.8	7.0	71.0
Jul 29		690		78			222	2,213	700	0		639	1,485	0	157.1	94.5	7.0	71.0
Jul 30		647		76			205	2,296	671	1		913	1,245	0	139.2	94.5	6.0	71.0
Jul 31		687		61			156	1,873	601	0		1,152	1,135	0	152.2	94.9	7.0	71.0
TOTAL		42,126		4,248			57,186	47,117	17,960	1		169,585	26,671	3				
AVG		1,359		137			1,845	1,520	579	0		5,470	860	0	155.8	93.9	6.7	68.5

RUN YEAR	CHINOOK		unclipped						SHAD LAMPREY STURGEON		
	TOTALS TO DATE	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD	LAMPREY	STURGEON	
SPRING	137,176	11,143		341,530	60,120	23,163	1	1,764,444	38,918	3	
SUMMER	119,591	10,834									
TOTAL	256,767	21,977									

TABLE 13

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

BONNEVILLE PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped							DISCH	SPILL	TURBIDITY	DEG F		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	KCFS		KCFS	SECCHI
Aug 1			510	60	0	0	106	1,478	404	1	0	750	821	0	164.4	94.7	7.0	71.0
Aug 2			624	76	0	0	98	1,433	416	0	0	417	776	0	146.9	94.5	7.0	71.0
Aug 3			723	68	0	0	107	1,352	400	0	0	208	469	2	133.0	89.2	7.0	70.0
Aug 4			820	65	1	0	88	1,506	434	0	0	389	635	0	129.4	85.5	7.0	70.0
Aug 5			892	93	0	0	74	1,621	517	0	0	390	716	1	137.8	89.9	7.0	70.0
Aug 6			876	110	2	1	78	1,796	546	0	0	324	521	-1	133.1	89.7	7.0	70.0
Aug 7			1,050	103	0	2	74	2,088	613	0	0	366	277	0	138.6	94.3	7.0	72.0
Aug 8			920	95	3	0	47	2,029	568	0	0	123	218	3	136.8	92.4	7.0	72.0
Aug 9			652	69	1	0	35	1,686	504	0	0	166	355	0	130.7	87.5	7.0	71.0
Aug 10			867	101	1	0	32	1,472	460	0	0	324	293	0	131.4	88.0	7.0	71.0
Aug 11			1,659	210	4	0	42	1,478	439	0	0	318	470	0	141.8	93.9	7.0	71.0
Aug 12			2,093	222	14	0	25	1,804	484	0	0	392	506	0	146.4	94.3	7.0	71.0
Aug 13			1,983	250	18	5	27	2,534	674	0	0	287	412	1	144.6	94.5	7.0	71.0
Aug 14			1,998	216	18	2	21	2,490	587	0	0	124	351	1	125.7	81.4	7.0	72.0
Aug 15			1,524	225	20	6	18	2,056	499	0	0	147	525	0	118.9	75.6	7.0	72.0
Aug 16			887	195	7	11	13	1,424	323	0	0	94	320	0	114.2	70.7	7.0	71.0
Aug 17			1,990	331	21	14	15	948	235	0	0	141	286	1	123.7	79.4	5.0	71.0
Aug 18			4,911	528	32	14	2	1,397	400	0	0	118	239	0	127.3	83.5	7.0	71.0
Aug 19			6,264	638	50	13	14	2,182	564	0	0	118	338	0	149.0	94.0	7.0	71.0
Aug 20			3,461	507	75	21	7	2,407	493	0	0	84	275	0	145.6	94.7	7.0	72.0
Aug 21			5,252	596	94	27	7	2,402	509	0	1	74	235	0	126.0	79.3	7.0	72.0
Aug 22			4,273	638	50	19	8	2,113	411	0	0	38	203	0	126.4	82.2	7.0	72.0
Aug 23			1,738	230	18	8	7	1,330	293	0	0	29	260	0	122.9	78.6	7.0	72.0
Aug 24			4,092	561	68	19	1	1,268	313	0	0	53	187	0	122.7	78.4	7.0	72.0
Aug 25			10,886	1,470	239	27	2	1,586	319	0	0	63	283	0	120.8	76.6	7.0	72.0
Aug 26			13,926	1,560	342	64	1	1,456	288	0	0	28	430	0	124.6	80.0	7.0	72.0
Aug 27			12,433	1,444	371	73	1	1,515	267	0	0	84	517	0	107.9	64.0	7.0	72.0
Aug 28			11,146	1,295	274	59	1	1,590	345	0	0	26	608	1	112.1	68.0	7.0	72.0
Aug 29			3,853	569	119	40	2	793	152	0	0	126	223	0	125.3	81.3	7.0	72.0
Aug 30			2,758	452	46	34	1	432	100	0	0	36	218	0	124.2	79.6	7.0	72.0
Aug 31			21,169	2,415	368	92	1	973	256	0	0	22	163	0	102.8	58.8	7.0	72.0
TOTAL			126,230	15,392	2,256	551	955	50,639	12,813	1	1	5,859	12,130	9				
AVG			4,072	497	73	18	31	1,634	413			189	391	0	130.2	83.7	6.9	71.4

RUN YEAR	CHINOOK		COHO	COHO	unclipped							SHAD	LAMPREY	STURGEON
	TOTALS TO DATE	ADULT	JACK	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM			
SPRING	137,176	11,143	2,256	551	342,485	110,759	35,976	2	1	1,770,303	51,048	12		
SUMMER	119,591	10,834												
FALL	126,230	15,392												
TOTAL	382,997	37,369												

TABLE 14

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

SEPTEMBER 2016

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
Sep 1			17,782	2,396	457	96	1	2,006	449	0	0		171	0	98.7	1.5	7.0	72.0
Sep 2			11,503	1,488	475	78	3	1,396	298	0	0		184	0	94.2	1.3	7.0	71.0
Sep 3			13,395	1,739	1,039	99	0	1,731	367	0	0		39	1	94.4	1.3	7.0	71.0
Sep 4			14,408	1,919	1,647	149	1	2,224	451	0	0		82	0	91.0	1.3	6.0	70.0
Sep 5			11,577	1,486	1,882	202	0	1,538	316	0	0		70	0	89.6	1.3	7.0	71.0
Sep 6			32,446	2,991	3,120	340	0	4,084	709	0	0		55	0	90.1	1.3	7.0	70.0
Sep 7			17,615	1,556	2,564	273	0	1,965	310	0	0		68	0	94.0	1.3	7.0	69.0
Sep 8			11,858	1,149	1,538	190	0	1,459	227	0	0		59	0	84.8	1.5	7.0	68.0
Sep 9			14,505	1,460	1,451	165	0	2,039	340	0	0		16	0	76.7	1.7	7.0	68.0
Sep 10			10,585	983	1,219	238	0	1,548	252	0	0		36	1	96.6	1.4	7.0	68.0
Sep 11			18,675	1,704	1,964	221	0	2,478	444	0	0		72	0	86.0	1.4	7.0	68.0
Sep 12			11,058	1,217	1,117	104	0	2,076	373	0	0		27	0	98.4	1.4	7.0	68.0
Sep 13			10,232	1,115	951	114	1	2,367	400	0	0		23	0	77.6	1.3	7.0	68.0
Sep 14			9,630	1,147	876	118	1	2,277	384	0	0		18	0	96.1	1.4	7.0	67.0
Sep 15			16,718	2,118	855	118	0	4,201	785	0	0		18	0	104.8	1.3	7.0	67.0
Sep 16			12,885	1,265	580	93	0	2,918	570	0	0		2	0	104.6	1.3	7.0	67.0
Sep 17			8,016	929	426	51	1	2,644	479	0	1		11	0	88.6	1.3	7.0	67.0
Sep 18			10,466	1,224	656	59	0	2,798	540	0	0		16	0	79.2	1.2	7.0	67.0
Sep 19			4,928	808	326	57	0	2,112	431	1	0		7	0	100.7	1.4	7.0	67.0
Sep 20			3,877	744	313	37	1	1,567	306	0	0		9	0	111.0	1.6	7.0	67.0
Sep 21			6,151	958	432	64	0	2,208	413	0	0		29	0	107.3	1.3	7.0	67.0
Sep 22			4,051	861	305	72	0	1,837	384	0	0		13	0	92.6	1.2	7.0	67.0
Sep 23			3,991	751	476	55	0	2,490	474	0	0		8	1	84.2	1.3	7.0	66.0
Sep 24			3,507	698	445	101	0	1,503	325	0	0		1	1	85.1	1.3	7.0	65.0
Sep 25			1,676	468	220	68	0	1,359	286	0	0		20	0	92.9	1.2	7.0	65.0
Sep 26			3,112	577	310	77	0	2,105	476	0	0		9	1	114.2	1.2	7.0	65.0
Sep 27			3,565	482	344	192	0	1,918	431	0	0		35	0	108.0	1.2	7.0	65.0
Sep 28			2,061	418	238	60	0	1,325	270	0	0		20	0	101.7	1.2	7.0	66.0
Sep 29			2,378	415	217	61	0	1,339	287	0	0		30	2	92.2	1.2	7.0	66.0
Sep 30			1,960	326	209	46	0	1,356	292	0	0		14	1	83.6	1.3	7.0	66.0
TOTAL			294,611	35,392	26,652	3,598	9	62,868	12,069	1	1		1,162	8				
AVG			9,820	1,180	888	120	0	2,096	402	0	0		39	0	94.0	1.3	7.0	67.6
RUN YEAR			CHINOOK	CHINOOK		COHO	COHO		unclipped									
TOTALS TO DATE			ADULT	JACK		ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON			
SPRING			137,176	11,143		28,908	4,149	342,494	173,627	48,045	3	2	1,770,303	52,210	20			
SUMMER			119,591	10,834														
FALL			420,841	50,784														
TOTAL			677,608	72,761														

TABLE 15

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

BONNEVILLE PROJECT - FISH COUNTS

OCTOBER 2016

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			1,609	303	183	31	0	1,114	252		0		8	1	88.5	1.3	7.0	66.0
Oct 2			927	163	154	36	0	613	141		0		8	1	78.4	1.3	7.0	65.0
Oct 3			1,743	342	214	38	0	1,147	282		0		4	1	85.1	1.2	7.0	64.0
Oct 4			923	130	370	71	0	1,063	266		0		-1	0	89.0	1.3	7.0	64.0
Oct 5			1,295	214	295	41	0	814	214		0		10	0	107.6	1.2	7.0	64.0
Oct 6			1,481	234	774	74	0	648	161		0		3	0	103.5	1.3	7.0	64.0
Oct 7			901	175	722	73	1	674	160		0		7	1	95.4	1.2	7.0	63.0
Oct 8			1,509	229	983	87	0	623	143		0		7	1	89.6	1.1	7.0	63.0
Oct 9			704	143	455	62	0	444	114		0		5	0	91.8	1.1	7.0	63.0
Oct 10			909	187	607	57	0	368	102		0		2	1	118.5	1.2	7.0	63.0
Oct 11			497	126	376	51	0	235	59		0		2	0	111.3	1.2	7.0	63.0
Oct 12			533	120	542	58	0	369	114		0		3	0	124.9	1.2	7.0	62.0
Oct 13			323	93	210	31	0	261	75		0		5	0	113.2	1.1	7.0	61.0
Oct 14			600	164	1,695	169	0	495	157		0		3	1	114.3	1.1	0.0	61.0
Oct 15			354	92	532	42	0	324	85		0		7	0	137.7	1.1	7.0	61.0
Oct 16			317	79	830	65	1	259	80		0		-9	1	132.5	1.1	7.0	60.0
Oct 17			207	48	447	42	0	142	36		0		33	1	126.0	1.1	5.0	60.0
Oct 18			466	45	504	32	0	219	60		0		11	0	119.2	1.1	7.0	60.0
Oct 19			243	36	425	40	0	126	35		0		2	0	125.5	1.1	7.0	59.0
Oct 20			228	17	186	19	0	95	29		0		-1	0	113.9	1.1	7.0	60.0
Oct 21			477	32	271	31	0	69	26		0		0	0	124.3	1.1	7.0	60.0
Oct 22			258	20	167	12	0	100	30		0		1	0	107.7	1.1	7.0	60.0
Oct 23			176	13	119	16	0	110	30		0		0	0	127.2	1.1	7.0	59.0
Oct 24			216	16	118	9	0	136	41		0		0	0	135.6	1.1	6.0	59.0
Oct 25			276	43	186	21	0	196	59		1		1	0	120.8	1.1	7.0	59.0
Oct 26			228	24	115	10	0	124	34		0		1	0	134.7	0.9	7.0	59.0
Oct 27			393	37	182	21	0	105	26		2		0	0	136.6	1.1	7.0	59.0
Oct 28			397	66	262	17	0	115	33		2		0	0	143.2	1.1	7.0	59.0
Oct 29			206	22	107	9	0	67	19		1		0	0	150.1	1.1	7.0	58.0
Oct 30			198	33	87	4	0	69	22		0		-1	0	149.5	1.0	7.0	57.0
Oct 31			215	21	101	3	0	58	15		-1		0	0	150.6	1.1	7.0	57.0
TOTAL			18,809	3,267	12,219	1,272	2	11,182	2,900		5		111	9				

AVG			607	105	394	41	0	361	94		0		4	0	117.6	1.1	6.7	61.0
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RUN YEAR	CHINOOK		COHO		unclipped					DISCH		SPILL		TURBIDITY			
	TOTALS TO DATE	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
SPRING	137,176	11,143							3	7	1,770,303	52,321	29				
SUMMER	119,591	10,834															
FALL	439,650	54,051															
TOTAL	696,417	76,028															

TABLE 16

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

BONNEVILLE PROJECT - FISH COUNTS

NOVEMBER 2016

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
Nov 1			212	15	172	6	0	82	18		1		0	0	148.3	8.7	0.0	57.0
Nov 2			160	15	198	10	0	100	25		6		0	0	154.2	11.5	7.0	57.0
Nov 3			98	10	69	6	0	79	32		4		0	0	158.5	13.7	7.0	57.0
Nov 4			115	10	43	5	0	69	27		1		0	1	156.9	13.7	7.0	56.0
Nov 5			110	18	43	2	0	44	22		0		0	0	152.0	9.8	7.0	56.0
Nov 6			123	19	45	8	0	62	24		1		0	0	142.2	2.2	7.0	56.0
Nov 7			115	9	47	2	1	60	14		3		1	0	147.2	5.5	7.0	56.0
Nov 8			118	19	49	2	0	37	11		6		0	0	146.1	3.9	7.0	56.0
Nov 9			61	9	21	6	0	35	8		7		0	0	138.4	1.0	7.0	56.0
Nov 10			54	1	16	2	0	38	9		1		0	0	140.4	1.0	7.0	56.0
Nov 11			31	1	14	1	0	27	7		1		0	0	144.2	1.0	7.0	56.0
Nov 12			41	5	9	0	0	28	10		1		0	0	135.5	1.0	7.0	56.0
Nov 13			36	0	6	1	0	18	7		1		0	0	145.4	1.0	7.0	56.0
Nov 14			5	3	6	4	0	21	10		0		0	0	139.8	27.9	7.0	56.0
Nov 15			16	0	17	0	0	11	7		2		1	0	139.5	42.3	7.0	56.0
Nov 16			24	0	31	2	0	29	9		0		0	0	144.0	29.3	7.0	55.0
Nov 17			23	6	42	5	0	28	13		1		1	0	148.0	8.8	7.0	55.0
Nov 18			26	2	12	3	0	41	17		1		0	0	155.4	9.4	7.0	55.0
Nov 19			23	4	4	0	0	45	14		2		0	0	156.2	8.5	7.0	54.0
Nov 20			8	5	5	2	0	24	6		0		0	0	156.9	38.7	7.0	54.0
Nov 21			8	2	-3	0	0	15	6		0		0	0	155.0	57.1	7.0	54.0
Nov 22			21	1	9	1	0	26	14		0		0	0	148.2	50.7	7.0	54.0
Nov 23			19	4	0	0	0	25	6		0		1	0	153.8	11.6	7.0	53.0
Nov 24			20	0	6	0	0	18	8		0		0	0	153.8	10.4	7.0	53.0
Nov 25			9	2	8	0	0	9	2		1		0	0	139.9	4.3	7.0	53.0
Nov 26			16	0	8	0	0	16	9		0		0	0	141.5	4.6	7.0	53.0
Nov 27			0	0	3	1	0	11	3		0		0	0	141.5	4.4	7.0	52.0
Nov 28			1	0	1	-1	0	7	4		0		0	0	143.1	4.7	0.0	52.0
Nov 29			0	-1	1	1	0	12	7		0		0	0	148.2	5.0	7.0	51.0
Nov 30			4	0	0	1	0	12	2		0		0	0	147.9	5.3	7.0	51.0
TOTAL			1,497	159	882	70	1	1,029	351		40		4	1				
AVG			50	5	29	2		34	12		1		0	0	147.4	13.2	6.5	54.7

RUN YEAR	CHINOOK		COHO	COHO	unclipped								
	TOTALS TO DATE	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	SHAD	LAMPREY	STURGEON
SPRING	137,176	11,143		41,882	5,476	342,497	185,520	51,176	3	47	1,770,303	52,323	30
SUMMER	119,591	10,834											
FALL	440,945	54,185											
TOTAL	697,712	76,162											

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 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD						STEELHEAD	KCFS	KCFS	SECCHI
Dec 1			3	0	0	1		9	4						152.8	4.4	7.0	51.0
Dec 2			3	0	2	-1		11	7						151.3	2.0	7.0	50.0
Dec 3			3	1	2	0		12	5						142.5	1.0	7.0	50.0
Dec 4			0	0	-1	0		10	4						130.6	1.0	7.0	50.0
Dec 5			2	0	1	0		24	12						140.9	1.6	7.0	50.0
Dec 6			6	0	0	0		14	5						155.8	9.9	7.0	49.0
Dec 7			0	0	0	0		5	1						164.2	17.5	7.0	48.0
Dec 8			1	0	0	0		12	5						169.8	15.0	6.0	47.0
Dec 9			1	0	1	0		11	4						167.6	10.7	6.0	45.0
Dec 10			0	0	0	0		7	5						144.3	6.2	7.0	44.0
Dec 11			0	0	0	0		19	9						138.7	4.5	7.0	44.0
Dec 12			3	0	0	0		11	7						136.1	5.2	7.0	44.0
Dec 13			0	0	0	-1		19	10						141.0	2.5	7.0	45.0
Dec 14			0	0	-1	0		13	5						154.1	4.1	7.0	44.0
Dec 15			2	0	0	0		11	7						150.5	4.5	7.0	43.0
Dec 16			0	0	0	0		6	3						146.6	6.7	7.0	43.0
Dec 17			0	0	0	0		8	3						150.0	5.6	7.0	43.0
Dec 18			0	0	0	0		5	1						165.8	10.0	7.0	42.0
Dec 19			0	0	0	0		2	-1						163.0	9.1	7.0	41.0
Dec 20			0	1	1	0		10	2						157.5	7.4	7.0	41.0
Dec 21			2	0	3	0		13	6						151.6	2.5	7.0	41.0
Dec 22			0	0	1	0		10	4						175.7	1.0	7.0	41.0
Dec 23			1	0	0	0		5	2						190.3	1.0	7.0	40.0
Dec 24			0	0	1	0		7	2						147.9	1.0	7.0	40.0
Dec 25			0	0	0	0		10	4						162.3	1.0	7.0	40.0
Dec 26			1	0	1	0		8	2						166.2	1.0	7.0	40.0
Dec 27			0	0	0	-1		3	2						180.5	1.0	7.0	39.0
Dec 28			0	0	0	0		7	4						160.3	1.0	7.0	39.0
Dec 29			0	0	0	0		9	3						148.1	1.1	7.0	39.0
Dec 30			0	0	0	0		5	0						160.1	1.0	7.0	39.0
Dec 31			0	0	0	0		2	-1						145.6	1.0	7.0	39.0
TOTAL			28	2	11	-2		298	126									
AVG			1	0	0	0		10	4						155.2	4.6	6.9	43.6

RUN YEAR	CHINOOK		COHO		SOCKEYE	STEELHEAD	unclipped		PINK	CHUM	SHAD	LAMPREY	STURGEON	
	TOTALS TO DATE	ADULT	JACK	ADULT			JACK	STEELHEAD						STEELHEAD
SPRING	137,176	11,143			41,882	5,476	342,497	185,520	51,176	3	47	1,770,303	52,323	30
SUMMER	119,591	10,834												
FALL	440,945	54,185												
TOTAL	697,712	76,162												

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-16

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	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	66			13			0	3	1			204
May 16	29			14			0	7	1			-73
May 17	146			29			0	1	0			-193
May 18	30			3			0	3	1			-57
May 19	28			7			0	4	0			24
May 20	15			6			0	3	0			-180
May 21	14			1			0	9	1			85
May 22	23			1			0	1	0			765
May 23	41			1			2	2	0			-145
May 24	3			2			1	1	0			-127
May 25	15			1			0	4	1			-96
May 26	14			1			2	1	1			-131
May 27	2			0			0	6	2			-122
May 28	11			1			0	4	0			138
May 29	16			4			1	5	0			417
May 30	6			1			5	3	1			442
May 31	20			4			2	3	0			-315
TOTAL	459			85			11	57	9			951
AVG	29			5			1	4	1			59

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

Jun-16

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT						
Jun 1		14				1	6	3			-947
Jun 2		34				7	15	7			-365
Jun 3		20				29	6	4			340
Jun 4		20				44	10	4			92
Jun 5		52				50	9	1			-728
Jun 6		39				40	9	6			-529
Jun 7		27				79	6	0			-764
Jun 8		35				38	10	3			-49
Jun 9		8				82	1	1			380
Jun 10		6				114	14	1			308
Jun 11		63				205	11	4			519
Jun 12		51				166	19	4			196
Jun 13		17				350	18	5			-557
Jun 14		52				264	12	4			228
Jun 15		27				254	14	2			171
Jun 16		38				468	9	1			106
Jun 17		42				354	15	7			-38
Jun 18		111				838	29	16			-1,301
Jun 19		51				1,008	15	5			-20
Jun 20		44				763	11	3			-339
Jun 21		68				582	11	2			-119
Jun 22		46				604	16	9			-79
Jun 23		26				653	12	2			398
Jun 24		44				962	13	3			59
Jun 25		33				488	11	2			1
Jun 26		76				656	24	7			365
Jun 27		75				600	11	6			-129
Jun 28		85				575	12	6			-130
Jun 29		46				459	17	7			76
Jun 30		51				466	16	6			389
TOTAL		1,301				11,199	382	131			-2,466
AVG		43				373	13	4			-82

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

Jul-16

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD			
Jul 1	38			1			553	15	6			25
Jul 2	53			2			505	22	7			791
Jul 3	40			1			405	36	7			99
Jul 4	42			0			322	15	5			175
Jul 5	38			2			151	10	5			545
Jul 6	30			2			129	19	7			215
Jul 7	4			0			163	10	9			837
Jul 8	28			0			143	18	10			609
Jul 9	37			0			149	18	5			447
Jul 10	40			1			204	17	8			-276
Jul 11	63			2			164	24	12			152
Jul 12	46			1			139	43	20			410
Jul 13	31			2			152	23	14			475
Jul 14	18			2			124	25	12			-299
Jul 15	14			6			103	12	8			982
Jul 16	28			2			80	15	6			171
Jul 17	18			1			36	11	5			184
Jul 18	8			1			79	36	15			199
Jul 19	16			1			50	19	7			374
Jul 20	27			4			38	41	20			-477
Jul 21	16			1			49	19	14			631
Jul 22	11			1			53	43	12			-462
Jul 23	24			1			43	44	15			-398
Jul 24	22			1			49	57	29			-477
Jul 25	26			0			37	88	41			-13
Jul 26	16			0			24	140	46			305
Jul 27	19			-1			16	55	14			-833
Jul 28	30			0			34	67	33			1,371
Jul 29	10			0			13	47	26			1,281
Jul 30	14			0			20	111	60			218
Jul 31	13			1			20	33	21			-445
TOTAL	820			35			4,047	1,133	499			6,816
AVG	26			1			131	37	16			220

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

Aug-16

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD			
Aug 1		4	-2	0	0	13	93	42			1,470
Aug 2		10	0	0	0	15	16	9			355
Aug 3		4	1	0	0	3	27	10			636
Aug 4		11	-1	0	0	10	32	7			808
Aug 5		25	0	0	0	13	46	12			650
Aug 6		29	1	0	0	11	34	10			1,117
Aug 7		12	0	0	0	8	55	28			-379
Aug 8		32	1	0	0	9	86	42			-454
Aug 9		11	2	0	0	3	26	16			-275
Aug 10		11	2	0	0	2	18	11			40
Aug 11		32	4	0	0	-1	22	12			506
Aug 12		7	2	0	0	6	2	2			890
Aug 13		50	-3	0	0	5	54	15			602
Aug 14		17	1	0	0	1	27	8			-235
Aug 15		21	-1	0	0	0	26	12			-553
Aug 16		13	6	0	0	4	11	5			-711
Aug 17		41	6	0	0	1	38	17			-36
Aug 18		72	12	0	0	0	64	21			62
Aug 19		54	8	1	0	2	73	18			133
Aug 20		32	13	0	0	0	50	11			29
Aug 21		167	27	1	0	0	126	25			-697
Aug 22		24	3	0	0	0	25	8			404
Aug 23		44	2	0	0	1	35	7			263
Aug 24		264	38	6	0	0	38	17			839
Aug 25		639	129	0	0	-1	50	6			194
Aug 26		498	86	1	1	1	70	22			270
Aug 27		331	61	19	-1	1	76	24			110
Aug 28		164	16	2	3	0	49	12			555
Aug 29		121	40	0	0	0	25	10			-107
Aug 30		1,355	364	2	0	0	66	15			-48
Aug 31		290	136	0	0	0	86	35			-210
TOTAL		4,385	954	32	3	107	1,446	489			6,228
AVG		141	31	1	0	3	47	16			201

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

Sep-16

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	unclipped			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD			
Sep 1			482	176	5	0	0	73	26		302
Sep 2			1,438	117	6	5	0	172	53		102
Sep 3			712	58	18	4	1	206	70		-118
Sep 4			554	48	15	5	0	110	33		4
Sep 5			1,370	251	79	2	0	110	34		-136
Sep 6			2,922	288	140	0	0	279	62		-61
Sep 7			203	44	17	2	0	25	3		-162
Sep 8			214	67	32	3	0	56	5		40
Sep 9			291	21	21	10	0	43	6		-190
Sep 10			1,847	151	49	23	0	198	62		98
Sep 11			448	97	31	6	0	70	20		56
Sep 12			198	61	19	6	0	74	21		-5
Sep 13			271	12	8	1	0	98	22		-3
Sep 14			605	61	14	4	0	176	44		4
Sep 15			131	6	10	3	0	57	10		-12
Sep 16			332	59	18	6	0	91	17		-31
Sep 17			171	17	10	2	0	212	37		44
Sep 18			93	21	8	2	0	94	13		-11
Sep 19			121	37	11	5	0	152	27		-20
Sep 20			55	10	17	12	0	78	19		-8
Sep 21			120	54	11	5	0	84	20		-56
Sep 22			166	18	17	6	0	142	36		34
Sep 23			43	10	0	0	0	31	4		31
Sep 24			53	6	2	2	0	117	37		44
Sep 25			100	13	4	0	0	74	14		-18
Sep 26			70	11	1	9	0	121	35		49
Sep 27			150	17	1	1	0	108	39		50
Sep 28			29	11	4	0	0	48	18		57
Sep 29			74	5	2	5	0	47	10		39
Sep 30			35	3	6	0	0	54	8		-10
TOTAL			13,298	1,750	576	129	1	3,200	805		113
AVG			443	58	19	4	0	107	27		4

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

TABLE 23a

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM

1938 - 2016

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

TABLE 23a
(continued)

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM
1981 - 2016

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
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
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
Total	36,688,171	16,899,501	8,885,513	4,146,331	40,973	7,523	66,668,012
10-Year Average	913,385	335,897	326,079	128,159	108	459	1,704,086

*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 2013-16 include nighttime video counts.

TABLE 23b

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM -- DAYTIME COUNTS
1938 - 2016

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

TABLE 23b
(continued)

YEARLY TOTALS OF SALMONIDS COUNTED OVER BONNEVILLE DAM -- DAYTIME COUNTS
1938 - 2016

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	CHUM	PINK	TOTAL SALMONID
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
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
Total	36,413,678	16,735,929	8,763,364	4,112,889	40,973	7,511	66,074,344
10-Year Average	901,121	332,646	315,669	127,007	108	458	1,677,009

*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													SPRING	SUMMER	FALL	
BONNEVILLE DAM - 1938 - 2016													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	TOTAL*			
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

TABLE 24

(Continued)

MONTHLY COUNT OF CHINOOK SALMON												BONNEVILLE DAM - 1938-2016			SPRING	SUMMER	FALL
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	Jan 1-	Jun 1-	Aug 1-	
														May 31	Jul 31	Dec 31	
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	
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	7	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	
TOTAL	136	435	103,990	4,581,207	4,071,551	3,001,846	2,002,782	4,345,475	17,292,269	1,102,487	61,359	1,997	36,565,534	8,757,319	5,004,628	22,803,587	
10-Year Average			382	57,330	118,470	81,028	39,162	119,710	439,253	43,900	1,833		901,121	176,187	120,190	604,745	

*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.

2015-2016 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 - 2016

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	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

TABLE 25

(Continued)

MONTHLY COUNT OF SOCKEYE SALMON

BONNEVILLE DAM 1938 - 2016

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
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
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		0	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
TOTAL	3	1	76	545	9,558	4,634,810	4,083,870	49,579	2,791	142	37	1	8,781,413
10-Year Average					128	218,862	96,140	525	14				315,669

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.

2015-2016 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 - 2016**

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

TABLE 26

(Continued)

**MONTHLY COUNT OF COHO SALMON
BONNEVILLE DAM 1938 - 2016**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*	JACKS
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
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
TOTAL	22	31	6	1	0	179	5,544	353,622	2,795,921	889,789	88,411	1,286	4,134,812	718,311
10 Year Average							3	9,885	71,959	41,346	3,728		127,007	13,959

*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.

2015-2016 visual 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 -2016**

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

TABLE 27

(Continued)

MONTHLY COUNT OF STEELHEAD
BONNEVILLE DAM 1938 - 2016

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	Jan 1-	Aug 26-
														Aug 25	Dec 31
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
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
TOTAL	11,728	12,196	86,023	203,370	188,083	580,058	4,782,732	6,170,293	4,290,951	452,165	70,099	19,298	16,866,996	10,948,718	5,921,330
10-Year Average			1,541	1,336	1,784	9,760	87,862	143,755	72,815	10,789	1,475		332,646	225,901	106,745

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.

2015-2016 visual fish counting extended to November 30. Video counts between 0400-2000 PST January 1 through March 31.

TABLE 28

MONTHLY COUNT OF SHAD at
BONNEVILLE DAM 1938 - 2016

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

TABLE 28
(Continued)
MONTHLY COUNT OF SHAD at
BONNEVILLE DAM 1938 - 2016

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
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
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
TOTAL				14	457	8,673,495	67,389,541	8,756,369	162,680	4,136	593	36	84,987,321
10 Year - Average					225,695	1,706,447	110,853	2,665					2,045,665

TABLE 29
MONTHLY COUNT OF LAMPREY at
BONNEVILLE DAM 1939¹ - 1969, 1997 - 2016

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.

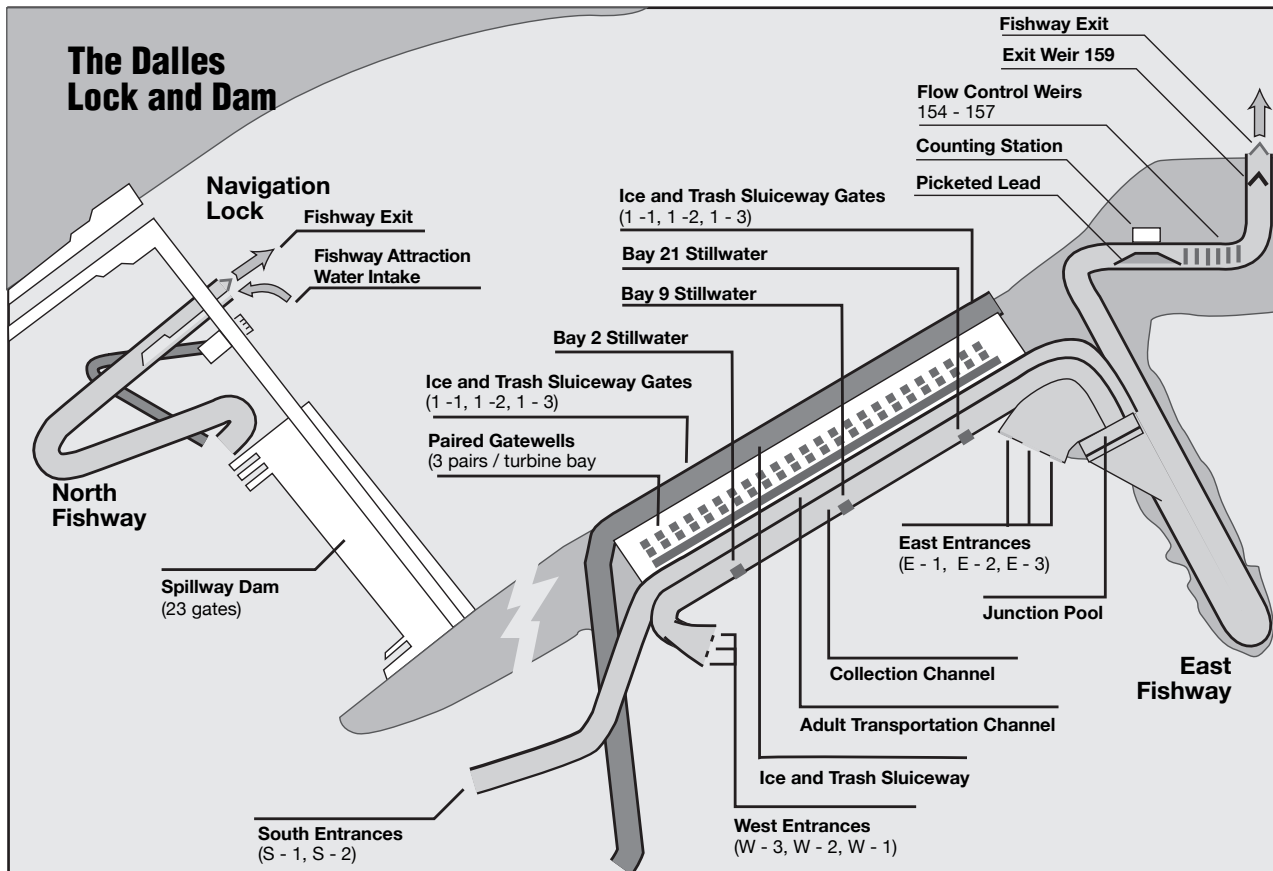
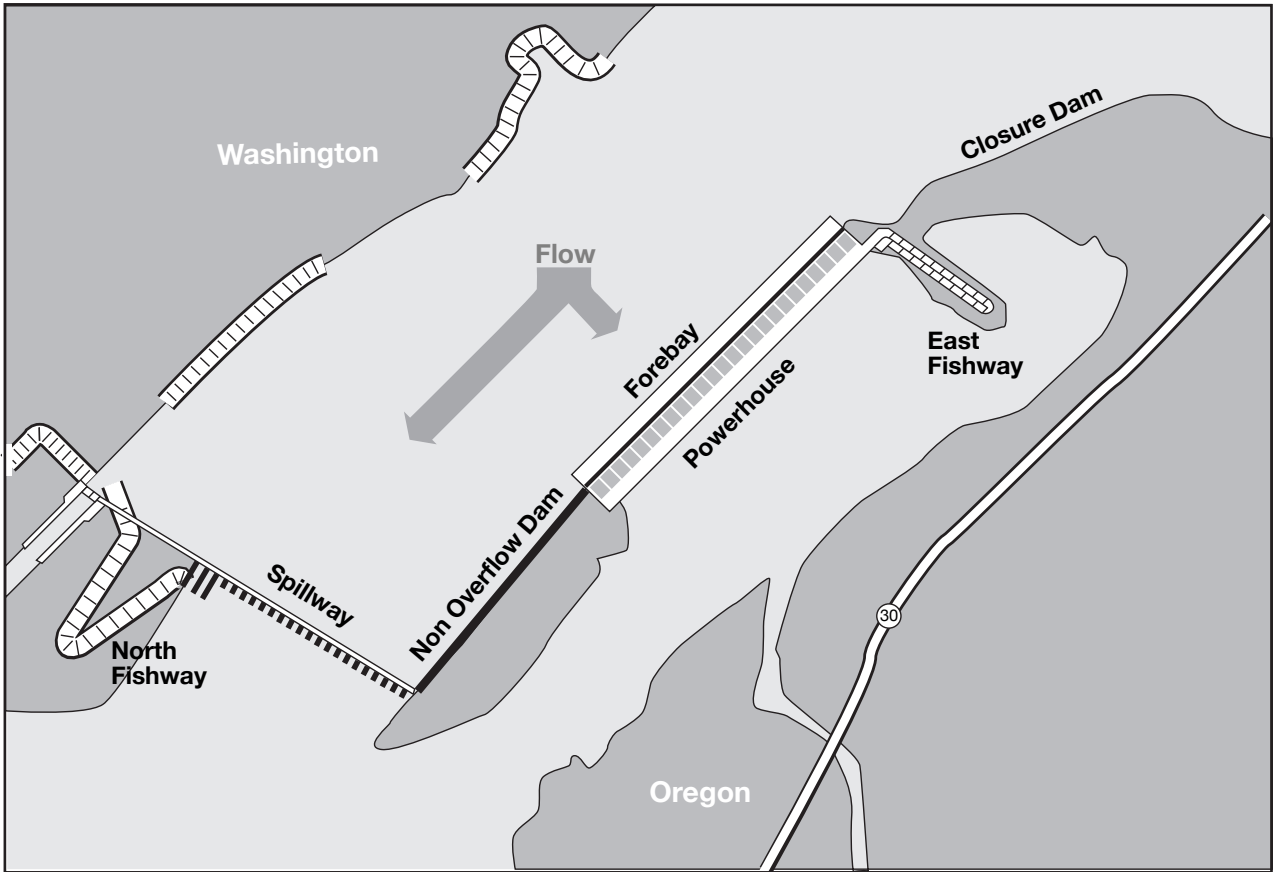
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1939				732	9,027	95,814	103,726	14,403	3,349	71	0		227,122
1940				338	24,551	40,642	67,760	20,554	2,217	40	0		156,102
1941				1,428	7,449	6,960	34,952	12,801	1,305	57	2		64,954
1942				13	1,302	3,457	28,641	16,270	2,619	40	19		52,361
1943				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
TOTAL			3	4,117	175,880	816,595	1,866,584	916,785	153,045	12,654	1,422		3,947,114
10-Year Average			4	1,125	5,421	11,520	5,130	1,044	64				24,323

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.

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.
July 15 – Sept 30	Nighttime video counts 2000-0400 hours Pacific Standard Time.

FISHWAY OPERATING SCHEDULE

The following information includes fishway operation for calendar year 2016. Total length of time for annual fishway outages can be determined by referring to previous years' annual reports.

East Adult Fishway

Jan 1 – Jan 4	In full operation with attraction water
Jan 5 – Jan 28	Dewatered for winter maintenance
Mar 22 – Mar 23	FU2 off for maintenance
Mar 1 – Nov 31	In full operation with attraction water
Aug 4	Attraction water off half day for required ROV grating inspection
Dec 1 - Dec 31	Dewatered for winter maintenance

North Adult Fishway

Dec 3	Dewatered 1 hour for winter maintenance. Cancelled due to high fish numbers.
Jan 1 – Dec 31	In full operation with attraction water
Aug 4	Attraction water off half day for required ROV grating inspection

Ice/Trash Sluiceway (Juvenile)

Jan 1- Mar 1	End gate closed
Mar 2 – Mar 31	In service with 4 sluice gates open
Apr 1 – Dec 2	In service with 6 sluice gates open
Dec 3 – Dec 15	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	Spill 40%, 24/7 for juvenile passage
Sept 1 – Dec 31	Closed, all gates on seal

FISHWAY ACTIVITIES

FISHWAY DEWATERING PROCEDURES

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.

THE DALLES DAM FISH LADDER 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=ls

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts
1/5/16	E. upper	2j	35j	0	0	1	0	0	0	none	1j steelhead
1/7/16	E. lower	0	5j, 2a	0	0	150	0	9	1smb, 4sp	none	4 lamprey
1/13/16	E. Lower	0	0	0	0	11	0	0	0	0	0
12/1/16	E. Upper	0	0	0	0	1	75	0	2wf, 1 lss	0	0
12/2/16	E. Lower	0	0	0	0	26	0	2	0	0	1 lamprey
12/3/16	E. Lower	0	1a, 1j	0	0	41	0	7a, 3j	1 rs	0	0
12/5/16	E. Lower	0	1j	0	0	13	0	0	0	0	2 a, 1j steelhead

Lamprey estimate due to large #'s and timely release to river. Two adult and 1 juvenile steelhead swam through a gap in the set barrier. Anchors were improved. North ladder dewatering was cut short due to a large sturgeon in an upper section on the ladder, unable to remove therefore the ladder was immediately re-watered.

TURBINE DEWATERING PROCEDURES

Turbines are dewatered for routine overall maintenance or occasional forced outages. These usually entrap low numbers of fish, due in part to unit operational guidelines, which include running unit at full load and immediate tail log installation after unit shut down. If a turbine unit fails, dewatering guidelines cannot always be followed, which can result in higher numbers of fish entrapment. Fish removal from these areas has a greater fish stress risk due to handling. Procedures are continually analyzed to determine the best method for preventing fish stress or loss. Fish are removed from scroll case (sc) and draft tubes (dt) by fish bags. If numbers of fish require more than three bags, transport tanks are placed in the draft tube gallery for transport by crane. Fish are released to tailwater as soon as possible.

No turbines were dewatered this year, therefore no fish salvage numbers.

Navigation lock Dewatering Procedures

The navigation lock (navlock) is occasionally dewatered for maintenance. As water levels recede, fish are removed from pools remaining on the navlock floor and fill conduits if there is potential of stranding. Many of the pools are too large to effectively remove fish. The area is monitored throughout the dewatering process.

THE DALLES DAM NAVLOCK 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, redds=rs, large scale sucker=lss

Date	Event	Chinook	Steelhead	Sockeye	Coho	Lamprey	Shad	Sturgeon	Other	Comments	Morts
3/9/16	T.V. 4-2	0	1a	3j	0	0	0	0	1 smb	none	0
12/19/16	T.V. 1-2	0	0	0	0	0	0	2	0	none	0

Water Velocity

Fishway channel water velocities were measured four times weekly during Adult Fish Passage Season (Mar1 – Dec 1). Wood floats were timed through all fishway channels that are supplemented by auxiliary water and results were provided in the project weekly fishway status report. Criteria velocities of 1.5 to 4 fps were maintained throughout the fish passage season. Velocities were not always taken at unit 22 due to turbulence preventing float tracking. Velocity is generally slower from junction pool to unit 21. Past University of Idaho analysis did not reveal passage problems in this area. All velocities were within 1.5 - 4 fps, with the exception of one occurrence of exceeding 4 fps in the east fishway south rock channel.

Water Quality

Water clarity was read by secchi dish at the count stations. Water clarity data is not included in this report due to its questionable accuracy. This data was collected per regional request to maintain historical data base. Temperature monitoring with data loggers in each fishway is provided biweekly in the fishway status reports. Generally temps were ~2F higher than average April through June, but followed normal trends the remainder of the season. Efforts will be made to increase data collection to show upper and lower fishladder temperature comparisons in 2017.

Pikeminnow Abatement

Washington Dept Fish and Wildlife gained access to The Dalles Dam and the Boat Restricted Zone (BRZ) for the purpose of hook and line dam-angling in support of the on-going BPA funded Columbia River Predator Control Program Dam angling occurred from May through October, in conjunction with ODFW and PSMFC. Anglers caught a total of 3,064 northern pikeminnow.

Zebra/Quagga Mussel Monitoring

One Zebra mussel veliger sample was taken in August via plankton tow. Sample sent to Portland State University's Center for Lakes and Reservoirs for analysis. No mussels found to date. The program will continue in 2017.

RESEARCH

The following are a list of fish related research and contract personnel that were on site during the 2016 passage season.

Confederated Tribes of the Umatilla Indian Reservation – 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. CTUIR captured 208 lamprey through Aug 22.

Normandeau Environmental Consultants – Continued to perform fish counting 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 mid Aug via pyrotechnics during juvenile passage season. Season was delayed 2 weeks due to approval delays.

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

TABLE 30

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

2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				11,830	98,780	67,404	40,341	57,734	283,586	25,415			585,090
STEELHEAD				288	71	3,496	17,437	13,969	87,341	22,425			145,027
SOCKEYE					113	230,899	56,414	887	83	5			288,401
COHO*								458	18,494	3,957			22,909
CHUM													0
PINK								1					1
TOTAL				12,118	98,964	301,799	114,192	73,049	389,504	51,802			1,041,428
LAMPREY					24	2,110	5,060	3,433	910	20			11,557
STURGEON					2	22	15	13	1	2			55
BULL TROUT													0

*Jacks included
Shad no longer counted at The Dalles Dam.

TABLE 31

DISCHARGE AND WATER QUALITY DATA

THE DALLES PROJECT 2016

JANUARY

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	DEG F
Jan 1	136.0	0.0	44.1	4.0
Jan 2	139.0	0.0	43.6	4.0
Jan 3	143.6	0.0	40.9	5.0
Jan 4	149.7	0.0	40.6	5.0
Jan 5	141.9	0.0	40.3	5.0
Jan 6	142.8	0.0	40.0	5.0
Jan 7	134.9	0.0	39.6	5.0
Jan 8	140.3	0.0	39.2	5.0
Jan 9	135.8	0.0	38.9	5.0
Jan 10	121.2	0.0	38.7	5.0
Jan 11	155.4	0.0	38.7	5.0
Jan 12	137.9	0.0	38.7	4.0
Jan 13	135.7	0.0	38.7	4.0
Jan 14	134.2	0.0	38.8	5.0
Jan 15	126.6	0.0	39.1	5.0
Jan 16	147.6	0.0	39.3	4.0
Jan 17	123.8	0.0	39.4	4.0
Jan 18	105.7	0.0	39.6	5.0
Jan 19	130.0	0.0	39.8	4.0
Jan 20	120.3	0.0	39.8	5.0
Jan 21	124.8	0.0	40.1	3.0
Jan 22	89.3	0.0	40.3	5.0
Jan 23	122.9	0.0	40.6	5.0
Jan 24	129.3	0.0	40.7	5.0
Jan 25	159.5	0.0	40.6	5.0
Jan 26	155.7	0.0	40.7	5.0
Jan 27	141.3	0.0	40.9	5.0
Jan 28	160.3	0.0	41.2	5.0
Jan 29	149.1	0.0	41.4	5.0
Jan 30	164.5	0.0	41.5	5.0
Jan 31	173.7	0.0	41.3	5.0
AVG.	137.8	0.0	40.2	4.7

FEBRUARY

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	*DEG F
Feb 1	156.1	0.0	41.1	5.0
Feb 2	153.4	0.0	41.0	5.0
Feb 3	155.1	0.0	40.9	5.0
Feb 4	150.7	0.0	40.8	5.0
Feb 5	118.4	0.0	40.9	4.0
Feb 6	109.3	0.0	40.8	5.0
Feb 7	105.0	0.0	40.9	5.0
Feb 8	133.7	0.0	40.9	4.0
Feb 9	124.0	0.0	40.8	5.0
Feb 10	145.4	0.0	40.8	5.0
Feb 11	156.0	0.0	40.8	4.0
Feb 12	160.3	0.0	40.9	5.0
Feb 13	158.5	0.0	40.9	5.0
Feb 14	137.9	0.0	41.0	5.0
Feb 15	145.7	0.0	41.6	5.0
Feb 16	177.2	0.0	41.8	5.0
Feb 17	220.0	0.0	41.9	3.0
Feb 18	186.3	0.0	41.9	5.0
Feb 19	186.4	0.0	41.8	4.5
Feb 20	172.6	0.0	41.8	4.0
Feb 21	209.7	0.0	41.8	4.0
Feb 22	204.1	0.0	41.9	3.0
Feb 23	170.9	0.0	42.1	4.0
Feb 24	181.5	0.0	42.4	3.0
Feb 25	185.8	0.0	42.6	4.0
Feb 26	187.6	0.0	42.6	4.0
Feb 27	154.3	0.0	42.7	4.0
Feb 28	152.2	0.0	42.9	3.0
Feb 29	168.5	0.0	42.9	4.0
AVG.	160.9	0.0	41.6	4.4

MARCH

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	DEG F
Mar 1	187.3	0.0	42.8	3.0
Mar 2	189.1	0.0	42.7	3.0
Mar 3	158.5	0.0	42.9	3.0
Mar 4	183.4	0.0	43.1	3.0
Mar 5	202.6	0.0	43.3	4.5
Mar 6	192.9	0.0	43.5	4.0
Mar 7	179.4	0.0	43.6	4.5
Mar 8	201.8	8.3	43.7	4.5
Mar 9	229.2	0.0	43.9	4.0
Mar 10	213.7	0.0	44.1	4.5
Mar 11	227.3	0.0	44.1	4.0
Mar 12	223.9	0.0	44.2	4.0
Mar 13	192.0	0.0	44.2	4.0
Mar 14	188.5	0.0	44.3	5.0
Mar 15	206.3	0.0	44.4	4.5
Mar 16	195.5	0.0	44.7	5.0
Mar 17	202.7	0.0	44.7	3.0
Mar 18	201.0	0.0	44.5	3.0
Mar 19	196.2	0.0	44.5	3.5
Mar 20	187.8	0.0	44.7	3.0
Mar 21	190.5	0.0	44.5	3.0
Mar 22	184.9	0.0	44.7	4.0
Mar 23	197.3	0.0	45.1	4.0
Mar 24	189.6	0.0	45.3	4.0
Mar 25	205.1	0.0	45.7	4.0
Mar 26	200.6	0.0	45.9	5.0
Mar 27	186.5	0.0	46.2	4.0
Mar 28	199.8	0.0	46.3	5.0
Mar 29	199.4	0.0	46.6	4.5
Mar 30	181.1	0.0	47.0	4.0
Mar 31	197.0	0.0	47.3	4.0
AVG.	196.5	0.3	44.6	4.0

TABLE 32

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

THE DALLES PROJECT - FISH COUNTS														APRIL 2016				
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL					DISCH	SPILL	TURBIDITY				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	unclipped	STEELHEAD			PINK	CHUM	LAMPREY	STURGEON	KCFS
Apr 1	21			1				21	12						209.9	0.0	47.6	4.0
Apr 2	30			0				26	16						185.2	0.0	48.1	4.0
Apr 3	51			1				15	10						172.2	0.0	48.5	4.0
Apr 4	45			0				15	10						170.1	0.0	48.8	4.0
Apr 5	54			0				17	15						205.7	0.0	49.0	4.5
Apr 6	66			0				7	0						219.5	8.2	49.2	4.0
Apr 7	103			0				15	11						234.3	0.0	49.6	4.0
Apr 8	90			1				13	6						246.7	14.5	50.1	4.0
Apr 9	137			0				19	15						210.2	15.9	50.7	4.0
Apr 10	211			8				17	12						227.3	0.0	51.1	4.5
Apr 11	174			4				14	8						222.4	90.3	51.6	5.0
Apr 12	213			10				10	5						238.1	89.4	52.2	4.5
Apr 13	207			0				18	5						253.5	106.1	52.2	4.5
Apr 14	141			4				8	7						289.2	100.9	52.0	3.5
Apr 15	146			1				6	5						311.0	115.7	52.0	3.0
Apr 16	167			6				7	5						315.3	124.2	52.3	3.0
Apr 17	254			11				10	4						300.2	125.9	52.6	3.0
Apr 18	162			4				8	4						310.3	119.9	53.0	4.0
Apr 19	222			2				7	2						284.9	123.6	53.3	3.0
Apr 20	173			1				5	0						275.8	113.8	53.2	4.0
Apr 21	272			7				4	0						286.3	110.5	53.3	4.0
Apr 22	444			5				5	4						322.7	111.8	53.3	3.0
Apr 23	894			26				4	3						315.6	123.3	53.4	4.0
Apr 24	1,571			11				5	1						330.2	112.1	53.5	3.0
Apr 25	854			13				1	0						331.6	116.5	53.2	4.0
Apr 26	760			5				3	1						308.0	128.1	53.2	3.5
Apr 27	1,150			25				5	1						285.8	123.2	53.5	3.5
Apr 28	497			8				1	1						299.1	114.1	53.6	3.5
Apr 29	1,021			17				0	0						280.1	119.3	53.7	3.5
Apr 30	1,492			37				2	0						268.8	111.9	53.8	3.5
TOTAL	11,622			208			288					163						
AVG.	387			7			10					5		263.7 77.3 51.7 3.8				

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 2016

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	DEG F
May 1	5,702			96			0	5	0			0	0	258.5	108.0	54.3	3.5
May 2	6,123			192			0	2	1			0	0	249.0	103.6	54.8	3.5
May 3	7,346			190			0	0	0			0	0	234.7	99.2	55.1	4.0
May 4	9,210			573			0	3	1			0	0	239.3	94.0	55.6	4.5
May 5	7,162			346			0	1	1			0	1	233.6	95.7	56.0	4.5
May 6	5,120			483			0	1	0			0	0	263.3	93.5	56.6	4.0
May 7	3,161			222			0	1	0			0	0	249.4	105.3	56.9	4.0
May 8	4,432			502			0	1	0			0	0	278.7	100.0	56.9	4.0
May 9	3,497			425			0	4	4			0	0	270.3	110.7	56.8	4.0
May 10	3,102			496			0	0	0			0	0	287.0	107.0	57.4	3.5
May 11	1,491			245			0	0	0			0	0	274.6	113.9	57.9	3.5
May 12	1,888			379			0	0	0			0	0	264.9	108.6	58.1	4.5
May 13	2,053			443			0	1	1			0	0	256.7	104.2	58.3	4.5
May 14	2,605			694			0	1	1			1	0	235.1	103.3	58.9	4.0
May 15	1,995			448			0	3	1			0	0	229.2	94.0	58.5	4.0
May 16	1,557			232			0	0	0			0	0	246.7	91.8	58.3	4.5
May 17	1,866			369			0	3	1			0	0	254.0	98.6	58.8	4.5
May 18	2,246			301			0	4	0			2	0	214.0	102.1	59.3	5.0
May 19	2,706			485			0	2	1			0	0	218.2	85.6	59.1	4.5
May 20	2,370			407			0	3	1			0	-1	247.7	87.6	58.9	4.5
May 21	1,769			288			0	4	0			1	1	216.7	99.1	59.0	3.0
May 22	1,700			251			0	3	1			0	0	184.5	86.9	58.6	4.0
May 23	1,281			149			0	6	2			0	0	197.0	73.6	58.8	5.0
May 24	1,267			114			0	1	0			2	0	212.7	78.4	58.9	4.0
May 25	1,173			171			2	2	1			2	1	209.4	84.7	59.3	4.0
May 26	973			137			1	2	1			5	0	202.5	83.4	59.2	4.0
May 27	947			162			2	1	0			1	0	211.2	81.1	58.7	4.5
May 28	1,435			188			17	1	0			0	0	190.7	84.6	58.8	4.5
May 29	1,105			123			15	5	1			4	0	174.9	76.1	59.3	5.0
May 30	1,033			109			23	8	3			1	0	201.6	69.9	59.6	5.0
May 31	1,085			160			53	3	2			5	0	207.2	80.5	60.2	5.0
TOTAL	89,400			9,380			113	71	24			24	2				
AVG.	2,884			303			4	2	1			1	0	232.7	93.7	57.9	4.2
RUN YEAR		CHINOOK	CHINOOK					TOTAL	unclipped								
TOTALS TO DATE		ADULT	JACK				SOCKEYE	STEELHEAD	STEELHEAD			LAMPREY	STURGEON				
SPRING		101,022	9,588				113	359	187			24	2				

TABLE 34

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

THE DALLES PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL				PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD	STEELHEAD							SECCHI	DEG F
Jun 1	1,166			94			111	12	6			13	1	163.9	82.8	60.9	5.0	
Jun 2	1,736			229			210	14	7			22	0	192.4	65.8	61.0	5.0	
Jun 3	1,580			88			307	13	8			24	1	202.7	77.1	61.4	5.0	
Jun 4		1,394		117			329	25	11			15	1	194.2	81.0	63.1	5.0	
Jun 5		1,699		199			629	31	17			50	1	216.9	77.4	63.1	4.0	
Jun 6		1,522		156			676	23	16			82	0	202.6	86.7	63.7	5.0	
Jun 7		1,791		139			848	44	21			60	3	220.5	81.0	63.9	5.0	
Jun 8		2,276		186			1,547	40	19			48	0	201.6	88.2	63.9	5.0	
Jun 9		2,165		150			1,458	36	26			70	2	204.3	80.6	63.8	5.0	
Jun 10		2,111		117			1,578	36	20			68	0	181.9	81.6	63.8	5.0	
Jun 11		1,957		117			2,060	58	31			42	0	193.9	73.0	63.9	6.0	
Jun 12		1,877		92			3,030	31	17			26	0	178.1	77.5	64.3	6.0	
Jun 13		2,834		203			5,933	55	29			162	2	160.2	71.3	64.5	5.0	
Jun 14		2,024		80			5,885	69	47			36	0	182.7	64.1	63.9	6.0	
Jun 15		1,883		152			5,702	78	40			91	0	172.5	73.2	63.8	5.0	
Jun 16		2,827		150			8,179	62	45			68	0	173.3	69.0	63.7	5.0	
Jun 17		2,282		200			8,019	82	40			40	0	184.3	69.3	63.7	5.0	
Jun 18		3,270		361			13,788	122	57			51	1	163.3	74.1	63.8	6.0	
Jun 19		1,961		248			12,146	152	76			33	0	145.8	65.1	63.4	5.0	
Jun 20		1,948		144			14,335	126	60			100	0	180.2	58.7	63.6	6.0	
Jun 21		1,966		120			16,379	125	50			94	0	181.2	72.3	63.8	5.0	
Jun 22		1,706		148			16,629	149	57			65	1	169.8	72.4	63.9	5.0	
Jun 23		2,375		142			16,125	144	58			38	0	177.4	68.2	64.0	5.0	
Jun 24		2,801		169			19,316	312	164			63	2	154.4	70.8	64.0	5.0	
Jun 25		2,440		145			18,691	233	107			72	1	183.6	62.0	64.0	5.0	
Jun 26		2,984		273			16,412	208	122			146	2	180.3	73.2	64.9	5.0	
Jun 27		2,200		148			10,625	287	162			174	1	174.6	71.6	65.6	5.0	
Jun 28		1,860		237			11,153	267	120			127	1	179.5	69.9	65.9	5.0	
Jun 29		1,852		227			9,838	331	143			116	1	170.8	71.8	65.8	5.0	
Jun 30		1,904		182			8,961	331	161			114	1	167.5	68.3	66.1	5.0	
TOTAL	4,482	57,909		5,013			230,899	3,496	1,737			2,110	22					
AVG.	1,494	2145		167			7,697	117	58			70	1	181.8	73.3	63.8	5.1	

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	105,504	9,999
SUMMER	57,909	4,602
TOTAL	163,413	14,601

	TOTAL SOCKEYE	unclipped STEELHEAD
	231,012	3,855
		1,924

	LAMPREY	STURGEON
	2,134	24

TABLE 35

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

THE DALLES PROJECT - FISH COUNTS

JULY 2016

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
Jul 1		2,811		236			7,679	379	168		169	0		178.4	66.9	66.4	5.0
Jul 2		1,950		104			7,833	280	135		84	0		151.0	71.2	67.0	5.0
Jul 3		2,063		142			7,352	398	172		197	0		144.0	60.6	67.2	5.0
Jul 4		2,247		117			6,138	517	247		107	0		154.1	57.8	67.0	5.0
Jul 5		1,937		200			4,081	505	231		136	1		158.6	61.8	67.1	5.0
Jul 6		1,387		129			2,708	498	271		102	1		153.9	63.6	67.3	5.0
Jul 7		1,332		168			2,411	549	285		168	1		153.8	61.6	67.8	5.0
Jul 8		1,461		198			2,192	583	293		127	0		162.3	61.8	68.0	6.0
Jul 9		1,524		144			2,214	581	283		108	0		149.2	65.1	68.3	6.0
Jul 10		1,506		190			1,853	582	276		171	0		113.6	59.7	68.4	5.0
Jul 11		1,287		149			1,554	614	290		208	2		119.9	45.2	68.1	5.0
Jul 12		784		88			1,374	503	228		177	0		127.7	47.7	68.3	5.0
Jul 13		1,137		131			1,213	517	246		158	1		141.2	50.9	68.3	5.0
Jul 14		1,222		211			1,215	688	352		262	2		149.3	56.4	68.6	5.0
Jul 15		1,273		220			1,478	594	282		110	1		141.1	59.6	68.3	6.0
Jul 16		1,067		169			787	614	274		150	0		143.5	56.5	68.0	6.0
Jul 17		1,059		114			577	569	273		165	1		141.0	57.7	68.1	5.0
Jul 18		923		134			444	887	402		155	0		145.8	56.7	68.3	5.0
Jul 19		736		135			310	584	261		171	1		150.8	58.4	68.4	5.0
Jul 20		666		95			483	596	256		122	1		129.8	60.3	68.7	5.0
Jul 21		741		122			308	646	271		99	-1		143.2	52.2	69.2	5.0
Jul 22		808		69			333	554	257		150	1		111.3	57.3	69.5	6.0
Jul 23		1,125		122			261	661	281		190	0		128.8	44.4	69.1	6.0
Jul 24		888		70			263	597	276		109	0		119.3	51.5	69.4	5.0
Jul 25		837		86			234	615	287		178	1		127.7	47.7	70.1	5.0
Jul 26		662		84			222	551	283		289	0		132.9	51.3	70.5	5.0
Jul 27		478		58			227	462	217		256	0		135.1	53.1	70.2	5.0
Jul 28		638		87			167	615	304		153	1		144.8	54.2	70.8	5.0
Jul 29		661		102			186	632	305		220	0		146.8	57.9	71.2	5.0
Jul 30		560		75			176	619	284		166	0		126.6	58.6	71.2	5.0
Jul 31		547		75			141	447	195		203	1		140.4	50.8	70.2	5.0
TOTAL		36,317		4,024			56,414	17,437	8,185		5,060	15					
AVG		1,172		130			1,820	562	264		163	0		140.8	56.7	68.6	5.2

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	105,504	9,999
SUMMER	94,226	8,626
TOTAL	199,730	18,625

TOTAL SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD
287,426	21,292	10,109

LAMPREY	STURGEON
7,194	39

TABLE 36

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

THE DALLES PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL				unclipped			DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON			KCFS	KCFS
Aug 1		590		72	0	0	108	514	194	0		279	0	157.7	56.1	70.9	5.0
Aug 2		509		45	0	0	73	512	206	0		156	0	114.7	63.5	71.4	5.0
Aug 3		439		57	0	0	86	423	175	0		169	0	117.0	46.0	70.9	5.0
Aug 4			597	59	0	0	78	421	168	0		167	0	132.7	47.0	71.5	5.0
Aug 5			473	62	0	0	57	326	126	0		166	0	124.8	53.2	71.9	5.0
Aug 6			570	69	0	0	57	279	113	0		168	0	116.4	49.8	71.2	5.0
Aug 7			638	62	0	0	52	387	177	0		105	1	111.6	46.5	70.5	5.0
Aug 8			625	69	0	0	35	382	159	0		88	0	118.3	44.6	70.4	5.0
Aug 9			713	92	0	0	57	424	187	0		85	1	119.2	47.4	70.3	5.0
Aug 10			672	82	0	0	54	435	158	0		53	0	122.5	47.8	70.0	5.0
Aug 11			584	71	0	0	24	476	180	0		79	1	134.6	48.9	70.4	5.0
Aug 12			956	88	0	0	36	552	223	0		77	1	130.7	53.7	70.9	5.0
Aug 13			1,233	119	5	1	30	613	235	0		70	0	128.2	52.3	71.2	5.0
Aug 14			895	97	1	0	23	455	162	0		44	0	107.4	51.4	71.3	5.0
Aug 15			914	94	1	2	15	409	125	0		56	3	100.1	43.0	71.0	5.0
Aug 16			1,045	138	8	5	22	435	145	0		113	2	105.1	40.1	70.7	5.0
Aug 17			865	129	0	5	18	469	145	1		93	0	117.1	42.0	70.8	5.0
Aug 18			1,396	189	0	1	11	626	204	0		108	1	113.9	46.7	71.1	5.0
Aug 19			2,095	316	8	1	6	585	156	0		78	0	137.5	45.3	71.8	5.0
Aug 20			3,420	347	1	5	3	842	267	0		112	2	135.7	55.1	72.3	5.0
Aug 21			2,332	300	2	6	11	661	194	0		163	0	99.4	54.0	72.6	5.0
Aug 22			922	132	1	1	7	323	73	0		123	1	112.1	39.4	71.8	5.0
Aug 23			2,186	354	2	2	0	327	81	0		64	0	112.3	44.8	71.0	5.0
Aug 24			2,199	341	23	6	5	517	153	0		130	0	108.6	44.9	71.8	5.0
Aug 25			1,222	207	37	4	4	369	95	0		125	0	108.4	43.4	72.1	5.0
Aug 26			2,277	314	27	7	1	313	82	0		74	0	119.3	43.4	72.2	5.0
Aug 27			5,555	551	18	6	5	408	101	0		75	0	96.3	47.7	72.2	4.0
Aug 28			3,619	397	54	14	2	225	68	0		116	0	104.2	38.7	72.0	4.0
Aug 29			4,931	823	69	24	4	441	90	0		113	0	118.2	41.9	71.9	5.0
Aug 30			3,938	856	21	13	2	366	87	0		72	0	105.4	47.2	71.7	5.0
Aug 31			2,157	635	59	18	1	454	92	0		112	0	95.3	38.1	71.0	5.0
TOTAL		1,538	49,029	7,167	337	121	887	13,969	4,621	1		3,433	13				
AVG.		513	1,751	231	11	4	29	451	149	0		111	0	116.9	47.2	71.3	4.9

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	105,504	9,999
SUMMER	95,764	8,800
FALL	49,029	6,993
TOTAL	250,297	25,792

COHO ADULTS	COHO JACKS	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK
337	121	288,313	35,261	14,730	1

LAMPREY	STURGEON
10,627	52

TABLE 37

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL unclipped				PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD								
Sep 1			4,543	999	23	10	0	842	182			104	0	84.0	0.0	70.7	5.0
Sep 2			9,249	967	88	32	2	603	165			34	0	86.4	0.0	70.5	5.0
Sep 3			12,655	1,851	117	35	5	1,387	308			45	0	89.4	0.0	70.1	5.0
Sep 4			13,345	1,589	338	110	18	2,833	614			53	0	79.9	0.0	69.5	5.0
Sep 5			15,290	1,975	354	72	1	3,002	643			34	0	81.9	0.0	69.4	5.0
Sep 6			11,270	1,577	635	67	13	3,176	688			62	0	86.8	0.0	69.1	5.0
Sep 7			7,735	1,048	603	17	3	2,741	568			54	0	84.5	0.0	69.2	5.0
Sep 8			17,322	2,836	1,296	67	26	2,746	628			81	0	77.6	0.0	68.9	5.0
Sep 9			12,316	2,220	1,070	105	1	3,099	522			59	-1	68.1	0.0	68.6	5.0
Sep 10			11,686	1,353	941	108	10	3,120	652			43	0	92.9	0.0	68.6	5.0
Sep 11			11,164	1,604	982	101	0	4,156	785			29	0	78.7	0.0	68.6	5.0
Sep 12			15,061	1,832	1,406	148	0	3,845	888			34	1	90.4	0.0	68.1	5.0
Sep 13			11,359	1,726	1,072	51	0	3,706	818			39	0	70.1	0.0	67.7	5.0
Sep 14			6,780	1,444	414	78	0	2,420	508			26	0	92.4	0.0	67.6	5.0
Sep 15			7,259	1,223	748	39	1	3,111	621			8	0	94.3	0.0	67.4	5.0
Sep 16			11,353	2,296	982	104	0	4,140	803			27	0	98.2	0.0	67.2	5.0
Sep 17			11,238	2,145	964	44	0	4,816	903			18	0	79.6	0.0	67.3	5.0
Sep 18			8,081	1,241	545	39	0	3,352	656			13	0	64.9	0.0	67.1	5.0
Sep 19			8,865	1,244	757	35	0	3,638	691			11	0	96.8	0.0	66.5	5.0
Sep 20			5,262	1,118	475	37	0	2,405	467			12	1	107.6	0.0	66.2	5.0
Sep 21			3,883	1,015	227	30	1	2,286	453			6	0	99.3	0.0	66.3	5.0
Sep 22			3,406	931	227	28	0	2,563	486			18	0	81.5	0.0	66.2	5.0
Sep 23			4,386	868	534	43	1	3,487	794			19	0	76.7	0.0	65.6	5.0
Sep 24			3,513	562	451	30	0	3,924	896			5	0	78.7	0.0	65.1	5.0
Sep 25			4,538	815	370	50	0	3,731	952			13	0	88.0	0.0	65.0	5.0
Sep 26			3,056	490	332	8	1	2,681	595			12	0	104.5	0.0	65.3	5.0
Sep 27			2,104	590	284	20	0	2,346	442			19	0	106.4	0.0	65.5	5.0
Sep 28			2,791	579	292	20	0	2,481	556			11	0	89.1	0.0	65.4	5.0
Sep 29			2,376	768	256	19	0	2,607	599			14	0	88.4	0.0	65.2	5.0
Sep 30			2,176	618	149	15	0	2,097	504			7	0	76.3	0.0	64.7	5.0
TOTAL			244,062	39,524	16,932	1,562	83	87,341	18,387			910	1				
AVG.			8,135	1,317	564	52	3	2,911	613			30	0	86.4	0.0	67.4	5.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	105,504	9,999
SUMMER	95,764	8,800
FALL	293,091	46,517
TOTAL	494,359	65,316

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	LAMPREY	STURGEON
17,269	1,683	288,396	122,602	33,117	1	11,537	53

TABLE 38

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

THE DALLES PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped				DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Oct 1			2,179	551	56	8	0	2,575	636			6	0	75.6	0.0	64.1	5.0
Oct 2			1,637	371	113	15	1	1,830	466			2	0	62.1	0.0	63.6	5.0
Oct 3			1,510	446	133	4	0	1,823	448			1	0	77.3	0.0	63.3	5.0
Oct 4			845	186	78	6	0	1,219	304			0	0	87.2	0.0	63.0	5.0
Oct 5			1,157	227	59	5	0	966	252			0	1	101.4	0.0	63.0	5.0
Oct 6			1,170	209	253	4	0	1,414	375			4	0	91.8	0.0	63.2	5.0
Oct 7			1,250	185	659	28	0	1,798	535			0	0	86.4	0.0	63.2	5.0
Oct 8			1,273	331	405	28	0	1,715	522			2	0	88.3	0.0	63.2	5.0
Oct 9			982	150	273	6	1	1,179	331			1	1	85.1	0.0	63.2	5.0
Oct 10			992	247	163	15	0	978	292			1	0	107.8	0.0	63.1	5.0
Oct 11			779	144	555	25	0	827	296			1	0	98.9	0.0	62.7	5.0
Oct 12			740	171	188	12	0	816	273			0	0	121.5	0.0	62.2	5.0
Oct 13			360	81	16	1	0	236	77			1	0	84.1	0.0	61.9	5.0
Oct 14			555	59	32	0	0	342	105			1	0	109.3	24.1	61.8	5.0
Oct 15			359	97	193	24	2	616	216			0	0	107.6	0.0	61.4	5.0
Oct 16			465	64	263	6	0	799	297			0	0	117.6	0.0	61.3	4.0
Oct 17			596	104	104	8	1	643	221			0	0	104.1	0.0	61.3	4.0
Oct 18			413	50	26	6	0	349	97			0	0	103.2	0.0	61.0	5.0
Oct 19			311	65	30	4	0	389	144			-1	0	113.6	0.0	60.6	5.0
Oct 20			242	21	6	0	0	209	64			0	0	93.6	0.0	60.3	4.0
Oct 21			270	45	13	1	0	196	54			0	0	119.8	0.0	60.1	4.0
Oct 22			425	43	15	2	0	194	73			0	0	101.5	0.0	59.7	4.0
Oct 23			425	54	17	1	0	198	66			0	0	112.2	0.0	59.5	5.0
Oct 24			277	30	11	0	0	134	42			0	0	122.3	0.0	59.2	5.0
Oct 25			197	26	8	4	0	108	31			0	0	101.5	0.0	59.0	5.0
Oct 26			281	35	8	1	0	139	37			0	0	124.9	0.0	58.7	5.0
Oct 27			255	30	24	2	0	140	59			0	0	118.7	0.0	58.6	4.0
Oct 28			297	59	16	1	0	192	52			0	0	130.9	0.0	58.3	4.0
Oct 29			418	37	9	0	0	170	56			0	0	139.8	0.0	58.1	4.0
Oct 30			317	87	4	2	0	135	40			1	0	132.3	0.0	57.9	6.0
Oct 31			210	23	8	0	0	96	24			0	0	132.9	0.0	57.5	6.0
TOTAL			21,187	4,228	3,738	219	5	22,425	6,485			20	2				
AVG.			683	136	121	7	0	723	209			1	0	104.9	0.8	61.1	4.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	105,504	9,999
SUMMER	95,764	8,800
FALL	314,278	50,745
TOTAL	515,546	69,544

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	CHUM	LAMPREY	STURGEON
21,007	1,902	288,401	145,027	39,602	1	0	11,557	55

Note: Visual counts ended October 31.

TABLE 39

DISCHARGE AND WATER QUALITY DATA
THE DALLES PROJECT 2016

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCH	DEG F
Nov 1	133.7	0.0	57.2	6.0	Dec 1	136.8	0.0	50.4	5.0
Nov 2	147.7	0.0	57.1	5.0	Dec 2	143.2	0.0	49.8	5.0
Nov 3	140.4	0.0	57.1	5.0	Dec 3	120.3	0.0	49.7	5.0
Nov 4	142.7	0.0	57.1	5.0	Dec 4	117.5	0.0	49.4	5.0
Nov 5	137.6	0.0	56.8	5.0	Dec 5	128.8	0.0	48.8	5.0
Nov 6	127.2	0.0	56.6	5.0	Dec 6	151.3	0.0	48.3	5.0
Nov 7	140.6	0.0	56.5	5.0	Dec 7	158.4	0.0	47.9	5.0
Nov 8	131.8	0.0	56.5	5.0	Dec 8	160.4	0.0	47.1	5.0
Nov 9	134.3	0.0	56.5	5.0	Dec 9	157.4	0.0	46.5	5.0
Nov 10	135.7	0.0	56.4	4.0	Dec 10	136.0	0.0	46.4	5.0
Nov 11	140.6	0.0	56.2	4.0	Dec 11	128.2	0.0	46.0	5.0
Nov 12	113.7	0.0	56.1	4.0	Dec 12	127.9	0.0	45.7	5.0
Nov 13	123.2	0.0	55.9	5.0	Dec 13	132.8	0.0	45.3	5.0
Nov 14	138.7	0.0	55.9	5.0	Dec 14	151.6	0.0	44.6	4.0
Nov 15	118.1	0.0	56.1	5.0	Dec 15	150.3	0.0	43.9	5.0
Nov 16	130.7	0.0	55.9	5.0	Dec 16	137.1	0.0	43.5	5.0
Nov 17	140.2	0.0	55.4	5.0	Dec 17	152.3	0.0	42.9	5.0
Nov 18	135.8	0.0	55.2	5.0	Dec 18	151.4	0.0	42.3	5.0
Nov 19	144.1	0.0	54.9	5.0	Dec 19	157.1	0.0	41.8	5.0
Nov 20	148.7	0.0	54.7	5.0	Dec 20	156.5	0.0	41.8	5.0
Nov 21	137.7	0.0	54.4	5.0	Dec 21	143.3	0.0	41.0	5.0
Nov 22	135.3	0.0	54.0	5.0	Dec 22	163.1	0.0	40.5	5.0
Nov 23	151.0	0.0	53.7	5.0	Dec 23	169.4	0.0	40.2	5.0
Nov 24	131.4	0.0	53.2	5.0	Dec 24	147.5	0.0	40.0	5.0
Nov 25	117.2	0.0	52.9	5.0	Dec 25	156.3	0.0	42.3	5.0
Nov 26	125.6	0.0	52.7	5.0	Dec 26	166.6	0.0	41.8	5.0
Nov 27	133.2	0.0	52.2	5.0	Dec 27	170.4	0.0	41.8	5.0
Nov 28	130.6	0.0	51.6	5.0	Dec 28	136.4	0.0	41.0	5.0
Nov 29	133.2	0.0	51.1	5.0	Dec 29	144.0	0.0	40.5	5.0
Nov 30	132.2	0.0	50.8	5.0	Dec 30	158.1	0.0	40.2	5.0
					Dec 31	141.3	0.0	40.0	5.0
AVG.	134.4	0.0	55.0	4.9	AVG.	146.8	0.0	44.2	5.0

TABLE 40

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

June 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO		TOTAL			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL		ADULT	JACK	SOCKEYE	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		78		11			478	6	4			158
Jun 16		82		3			377	7	4			139
Jun 17		56		1			352	3	1			166
Jun 18		63		0			675	3	3			206
Jun 19		28		3			622	1	1			193
Jun 20		32		1			1,094	2	0			123
Jun 21		60		3			1,323	5	2			180
Jun 22		42		8			894	1	1			337
Jun 23		97		19			883	11	1			358
Jun 24		86		0			884	8	6			341
Jun 25		69		0			1,422	11	5			303
Jun 26		61		0			750	9	4			439
Jun 27		49		1			731	8	1			480
Jun 28		58		1			806	10	4			384
Jun 29		86		2			1,074	22	12			467
Jun 30		58		0			407	9	5			352
TOTAL		1,005		53			12,772	116	54			4,626
AVG.		63		3			798	7	3			289

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 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL			PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD				
Jul 1		49		3			500	26	8			457	
Jul 2		46		2			400	14	9			524	
Jul 3		32		18			538	10	3			510	
Jul 4		48		1			324	9	4			330	
Jul 5		56		6			394	20	6			442	
Jul 6		57		2			232	16	9			357	
Jul 7		35		3			196	13	6			448	
Jul 8		33		0			217	14	7			455	
Jul 9		51		4			282	13	5			525	
Jul 10		37		6			286	23	7			554	
Jul 11		13		1			112	14	6			400	
Jul 12		50		0			151	43	7			467	
Jul 13		22		0			112	24	7			429	
Jul 14		43		1			174	19	6			400	
Jul 15		36		2			157	30	12			589	
Jul 16		38		5			100	31	8			505	
Jul 17		30		1			147	12	7			523	
Jul 18		16		3			46	27	7			533	
Jul 19		28		0			73	31	12			497	
Jul 20		29		0			92	26	15			403	
Jul 21		33		0			103	22	5			493	
Jul 22		30		0			113	18	11			549	
Jul 23		39		8			122	25	4			387	
Jul 24		26		1			56	15	9			593	
Jul 25		24		0			47	27	12			676	
Jul 26		22		0			68	28	16			641	
Jul 27		7		0			38	17	5			502	
Jul 28		14		4			61	22	14			543	
Jul 29		14		1			94	28	2			580	
Jul 30		40		1			72	27	10			543	
Jul 31		14		0			54	11	3			576	
TOTAL		1,012		73			5,361	655	242			15,431	
AVG		33		2			173	21	8			498	

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 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	TOTAL unclipped		PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT		JACK	STEELHEAD			
Aug 1		13		0	0	0	40	19	5		814
Aug 2		16		3	0	0	13	18	9		729
Aug 3		23		2	0	0	15	20	7		538
Aug 4			11	0	0	0	38	19	7		751
Aug 5			19	0	0	0	19	9	4		676
Aug 6			11	2	0	0	12	16	10		436
Aug 7			13	0	0	0	8	17	6		312
Aug 8			31	0	0	0	8	19	7		247
Aug 9			16	0	0	0	5	21	13		474
Aug 10			12	1	0	0	7	18	2		303
Aug 11			9	0	0	0	9	19	7		433
Aug 12			31	1	0	0	6	26	6		369
Aug 13			38	1	0	0	6	16	9		286
Aug 14			40	0	0	0	4	16	6		283
Aug 15			12	0	0	0	3	7	3		265
Aug 16			19	1	0	0	5	26	10		407
Aug 17			25	1	0	0	2	26	5		264
Aug 18			62	12	1	1	3	25	6		482
Aug 19			89	2	2	0	0	44	10		507
Aug 20			178	10	0	0	0	49	14		184
Aug 21			50	3	0	0	2	28	8		360
Aug 22			77	0	0	0	0	8	0		221
Aug 23			48	5	0	0	0	17	7		479
Aug 24			90	11	2	0	0	41	19		419
Aug 25			44	4	0	1	0	27	11		407
Aug 26			164	4	0	0	0	29	6		417
Aug 27			219	28	0	0	1	30	11		325
Aug 28			115	5	0	0	1	21	7		287
Aug 29			89	12	0	0	0	34	4		411
Aug 30			19	6	0	0	0	15	1		221
Aug 31			70	23	0	1	0	64	8		227
TOTAL		52	1,601	137	5	3	207	744	228		12,534
AVG.		17	57	4	0	0	7	24	7		404

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

TABLE 43

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

THE DALLES PROJECT - NIGHT FISH COUNTS

September 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL		PINK	CHUM	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD unclipped			
Sep 1			233	23	6	0		84	23			183
Sep 2			102	9	1	0		89	25			198
Sep 3			43	0	1	0		139	16			90
Sep 4			100	19	14	31		187	49			130
Sep 5			150	12	6	0		292	75			106
Sep 6			70	20	61	6		90	19			148
Sep 7			202	8	15	0		126	28			122
Sep 8			161	42	14	4		229	40			134
Sep 9			54	2	15	0		148	35			134
Sep 10			77	26	23	0		204	50			121
Sep 11			75	33	26	0		276	53			114
Sep 12			177	12	23	0		533	127			71
Sep 13			21	3	5	0		174	34			39
Sep 14			114	7	19	0		245	42			57
Sep 15			180	22	35	2		419	91			54
Sep 16			79	13	25	3		365	83			33
Sep 17			105	8	22	0		331	69			61
Sep 18			57	17	15	0		143	25			37
Sep 19			49	11	16	0		120	25			31
Sep 20			35	6	8	4		118	35			34
Sep 21			41	14	9	0		152	28			25
Sep 22			52	13	16	0		362	49			56
Sep 23			36	19	30	1		198	43			40
Sep 24			9	1	1	0		133	35			40
Sep 25			16	3	21	2		183	33			35
Sep 26			17	7	17	0		182	37			30
Sep 27			18	4	6	0		146	27			36
Sep 28			19	0	8	0		149	30			39
Sep 29			12	3	4	0		100	30			24
Sep 30			16	4	2	0		90	24			22
TOTAL			2,320	361	464	53		6,007	1,280			2,244
AVG.			77	12	15	2		200	43			75

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

TABLE 44

YEARLY TOTALS OF SALMONIDS COUNTED OVER THE DALLES DAM
1957 - 2016

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
Totals	19,619,556	10,953,763	5,594,841	1,257,404	265	1,784	37,427,613
10-Year Average	638,506	268,188	269,251	52,948			1,229,038

*Jacks included

TABLE 45

MONTHLY COUNT OF CHINOOK SALMON
THE DALLES DAM 1957 - 2016

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	125,378	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	42,146	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	28	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	958	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	16	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	20	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	20	539,930	124,262	79,614	336,054	126,554	
2013		4		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			2	**	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	
Total				9,818	2,193,499	2,735,606	1,930,674	1,403,980	1,843,067	8,428,138	1,059,710	14,868	19,619,556	5,067,132	3,289,348	11,260,714	3,714,713	
10-Year Average				31,950	103,223	67,882	35,616	55,153	298,636	45,692			638,506	140,466	99,752	398,287	111,888	

*Jacks included

**No fish count data for March in 2013

TABLE 46
 MONTHLY COUNT OF SOCKEYE SALMON
 THE DALLES DAM
 1957 - 2016

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	0			586,188
2015					0	290,869	136,068	2,448	273	26			429,797
2016					0	113	230,899	56,414	887	83	5		288,401
Total				3	1,929	2,994,688	2,567,709	28,958	1,489	60	1	4	5,594,841
10-Year Average				37	170,597	97,957	612	44					269,251

TABLE 47
MONTHLY COUNT OF COHO SALMON
THE DALLES DAM: 1957-2016

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			-1					565	29,591	10,408	1,072	10	41,645	1,919
2005							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
Total							1,584	48,107	898,070	303,534	6,069	41	1,257,404	239,852
10-Year Average							1,921	36,830	14,162				52,948	4,362

*Includes Jacks

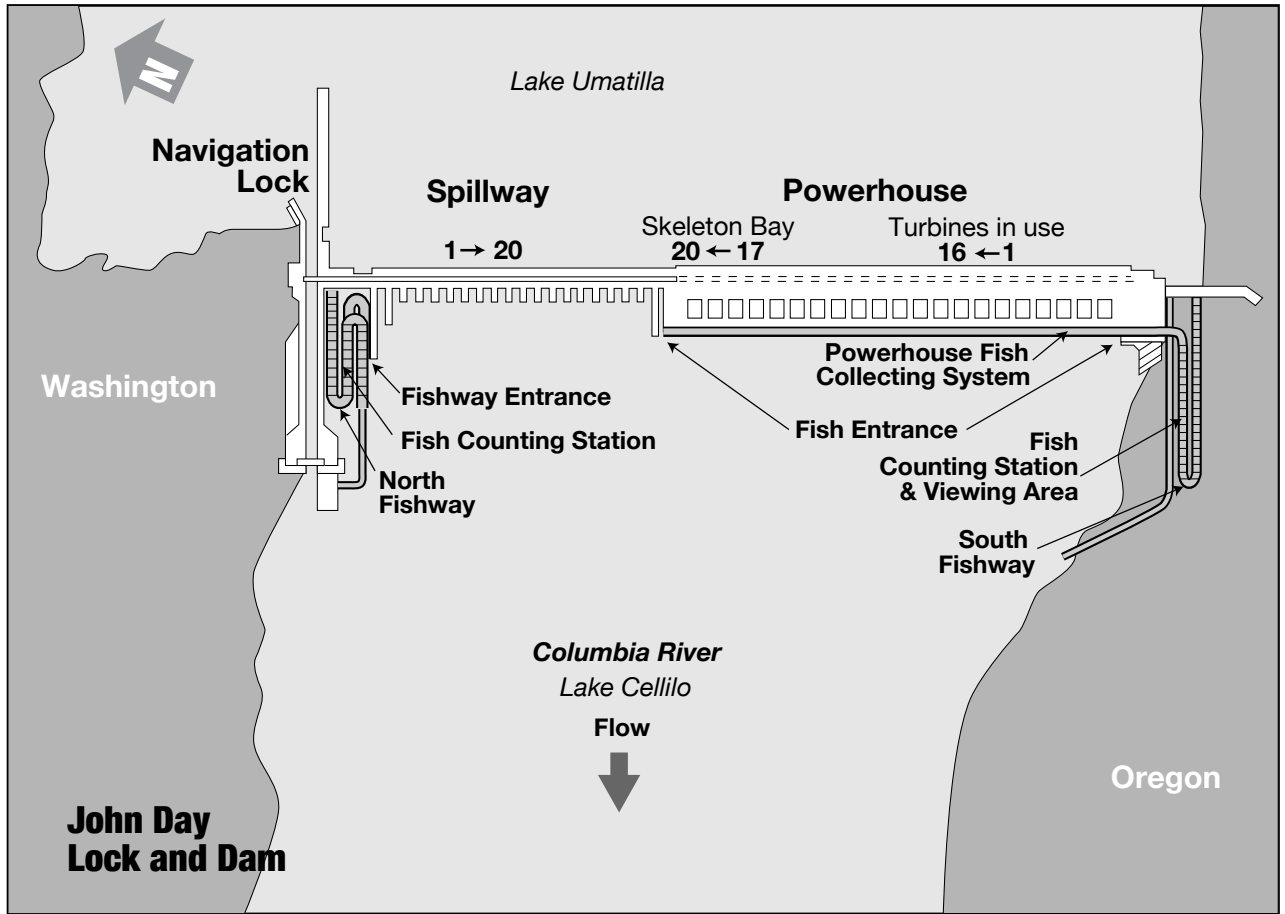
TABLE 48

MONTHLY COUNT OF STEELHEAD
THE DALLES DAM 1957 - 2016

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	158,525	36,458	6,004	524	282,574	
2004			140	1,072	1,066	680	7,116	23,581	152,302	23,099	1,647	22	241,123	
2005			107	688	558	616	4,483	33,476	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			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	
Total			13,099	54,667	36,556	191,411	2,105,462	2,510,627	4,928,630	1,075,816	35,358		10,953,763	
10-Year Average			822	326	3,778	47,706	66,149	120,375	28,138				268,188	

Plate 4 John Day Lock and Dam

0 200 400 600 800 1000
Approximate scale in feet



JOHN DAY DAM

FISH COUNTING SCHEDULE

Apr 1 – Oct 31 Visual counting daily 0400-2000 hours Pacific Standard Time.
July 15 – Sept 30 Nighttime video counts 2000-0400 hours Pacific Standard Time.

FISHWAY OPERATING SCHEDULE

The following information includes fishway operation for calendar year 2015. Total length of time for annual fishway outages can be determined by referring to the 2014 annual report.

North Adult Fishway

Dec 5 – Dec 31 Dewatered for winter maintenance
Jan 1 – Nov 30 In service with attraction water
Aug 2 Attraction water off half day for required ROV grating inspection

South Adult Fishway

Jan 7 – Feb 27 Dewatered for winter maintenance
Feb 28 – Dec 31 In service with attraction water
Aug 2 Attraction water off half day for required ROV grating inspection

Smolt Monitoring Facility

Jan 1 - March 24 Dewatered
Mar 31 – Jul 26 In full operation with juvenile sampling
Jul 27 – Sep 8 Water temperature 70° F. Condition sampling of 100 fish on Monday and Thursday. System in bypass at switch gate on other days.
Sep 16 – Nov 28 System in bypass for full flow PIT tag detection.
Nov 28 – Dec 31 System dewatered for winter maintenance.

Juvenile Bypass System

Jan 1 - Mar 24 1/3 gatewell orifice open, rotated twice weekly
Apr 1 - Dec 15 Full operation (for kelts in December)
Dec 15 – Dec 31 Full operation due to STS crane failure

Spillway

Jan 1 – Apr 9 Closed
Apr 10 – Aug 31 Spill (30% & 40% per FPP schedule)
Sept 1 – Nov 30 Bay 2 only, 1.5 KCFS daylight hours only (attraction water for north fishway)
Dec 1 – Dec 31 closed

FISHWAY ACTIVITIES

FISHWAY DEWATERING PROCEDURES

Bulkheads are installed and drain valves open to dewater various areas of fishways. Fisheries personnel enter these areas to salvage fish that become stranded and /or trapped in shallow pools behind weirs. Minimal handling of fish is applied. Fish that are reluctant to vacate an area are captured and transported to the forebay or tailwater, depending on circumstances such as fish species, age class and stress levels. Follow up inspections are made to account for possible missed fish. Efforts are made to provide continual water supply during the entire operation to reduce fish stranding. Fishway areas not included on this list are inspected by Remote Operated Vehicle (ROV.)

John Day Dam 2016 Fish Ladder Dewatering Results

Key: adult=A, juvenile=J catfish=ct, sturgeon=st, common carp=cp, walleye=we, sculpin=sp; steelhead=sth; released in good condition=RIGC

Date	Event	Chinook	Steelhead	Lamprey	Shad	Other	Comments	Morts
Jan-16	SFL-Exit	0	21J	75A	0	3-sp	Lamprey found at trap	0
Jan-16	SFL CC	0	22J 3A	0	0	12-we	RIGC	0
Jan-16	SE1 Diff Pool	0	3A, 14J	0	0	2cp,8we,1ct	RIGC	0
Dec-16	NFL-Upper	0	1A	0	0	0	JDS>4 flushes. RIGC	0
Dec-16	NFL Enter	0	7A	7A	41A	1-st(A)	4-5' st 15-24" STH, RIGC	0
Dec-16	NFL Enter	0	0	15A	0	0	Origin unknown old weir guide plate?	0

Smolt Monitoring Facility 2016 Dewatering Results

Key: adult=A, juvenile=J catfish=ct, sturgeon=st, bass=ba; released in good condition=RIGC

Date	Event	Chinook	Steelhead	Lamprey	Shad	Other	Comments	Morts
Jan-16	JBS Conduit	0	0	0	0	0	No Fish	0
Jan-16	JBS Outfall	0	0	0	0	0	No Fish	0
Nov-16	SMF	32A	28A	53A	4A	1st, 12ct, 1ba	st (~36"), ct (~18"), ba (~12")RIGC	0
Dec-16	SMF Trans Flume	0	0	7A	0	0	RIGC, ~ 1 mile upstream WA shore	0

TURBINE DEWATERING PROCEDURES

Turbine dewatering for routine maintenance usually involves low numbers of fish, due to operational guidelines. If a turbine unit fails, operational guidelines cannot always be followed, which usually results in higher numbers of fish entrapment. Removal of fish from these areas has a greater fish stress risk due to handling. Procedures are continually analyzed to determine the best method for preventing fish stress or loss. Fish are removed from scroll case and draft tubes by fish bags. If numbers of fish are higher than two bags, transport tanks are placed in the draft tube gallery for transport by crane. Fish are released to tailwater either with bag and rope or tank and crane.

John Day Dam 2016 Turbine Dewatering Results

Key: adult=A, juvenile=J catfish=ct, sturgeon=st, bass=ba; released in good condition=RIGC

Date	Event	Chinook	Steelhead	Lamprey	Shad	Other	Comments	Morts
Apr-16	MU-8 scroll case	3J	0	0	0	0	3-smolts RIGC	0
Apr-16	MU-8 draft tube	0	0	0	0	3-st, 4-ct	st-(12"-30"), ct-(~18") RIGC	0
Apr-16	MU-16 scroll case	0	0	0	0	0	No Fish	0
May-16	MU-15 scroll case	12-J	0	0	0	0	RIGC 1A Sockeye	0
May-16	MU-15 draft tube	0	0	0	0	0	No Fish	0
May-16	MU 3 scroll case	0	0	0	0	0	No Fish	0
May-16	MU 3 draft tube	0	0	0	0	0	No Fish	0
Jun-16	MU 14 scroll case	0	0	0	0	1-ba	RIGC	0
Jun-16	MU 14 draft tube	0	1-J	0	0	7-st, 12-ct	RIGC	0
Jun-16	MU 11 scroll case	0	0	0	0	1 cat	RIGC	0
Jun-16	MU 11 draft tube	0	0	0	0	2-st, 8 ct	Small st, large ct RIGC	0
Jun-16	MU3 scroll case	0	0	0	0	0	No Fish	0
Jun-16	MU3 draft tube	0	0	0	0	0	No Fish	0
Jul-16	MU 11 Scroll Case	0	0	0	0	0	No Fish	0
Jul-16	MU 11 draft tube	0	0	0	0	1-stu,3 ct	3 foot st, 16" ct(s); RIGC	0
Aug-16	MU 10 scroll case	0	0	0	0	0	No Fish	0
Aug-16	MU 10 draft tube	0	0	0	0	2 ST, 15 ct	small st, midsize cats RIGC	0
Oct-16	MU 01 scroll case	0	0	0	0	0	No Fish	0
Oct-16	MU 01 draft tube	0	0	0	0	10 ct	16-24" RIGC	0

Water Quality

Daily River Temperature was read at JD south forebay's electronic display during the daily fishway inspections. Additionally, the Water Temperatures were collected in both fish ladders at the entrance and exits with HOBO data loggers by JD Fisheries, 1 April – Nov. 30. Water Clarity was read by Secchi disc at one counting station during the daily fishway inspections.

Pikeminnow Abatement

Northern Pikeminnow (NPM) angling at the John Day powerhouse tailrace was performed by the Washington Department of Fish and Wildlife crew under contract from Pacific States Marine Fisheries Commission. The 2016 total catch of 3,002 NPM is lower than the 2015 catch of 3,127, and the 2014 catch of 4,250, but significantly higher than 2013's 2,370 NPM, and 2012's 2,217 NPM. This year's angling effort was cut short due to funding and concluded September 4th rather than in October.

Fishway Velocities – Collection channel

2016 JD South Fishway Collection Channel Velocities were conforming to the FPP criteria of 1.5 to 4.0 f/s. A multiyear data confirm the optimal channel velocities at all times, year round.

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 2016.

TABLE 49

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER JOHN DAY DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*				7,999	87,686	63,313	39,073	35,950	247,376	25,691			507,088
STEELHEAD				335	50	2,175	10,933	6,283	82,654	28,196			130,626
SOCKEYE					65	226,742	62,085	988	96	0			289,976
COHO*								103	14,537	4,995			19,635
CHUM													0
PINK								1	1				2
TOTAL				8,334	87,801	292,230	112,091	43,325	344,664	58,882			947,327
LAMPREY				36	288	1,621	3,928	2,964	850	82			9,769
STURGEON								2	10	4			16
BULL TROUT													0

*Jacks Included

TABLE 50

DISCHARGE AND WATER QUALITY DATA

JOHN DAY PROJECT 2016

JANUARY

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	DEG F
Jan 1	133.1	0.0	6.0	41.9
Jan 2	136.9	0.0	6.0	41.5
Jan 3	140.1	0.0	6.0	41.0
Jan 4	143.6	0.0	6.0	40.5
Jan 5	151.5	0.0	6.0	40.0
Jan 6	141.5	0.0	6.0	39.5
Jan 7	142.8	0.0	6.0	39.0
Jan 8	135.7	0.0	6.0	38.7
Jan 9	140.3	0.0	6.0	38.5
Jan 10	134.1	0.0	6.0	38.6
Jan 11	123.7	0.0	6.0	38.6
Jan 12	155.5	0.0	6.0	38.6
Jan 13	137.9	0.0	6.0	38.6
Jan 14	136.5	0.0	6.0	38.8
Jan 15	134.3	0.0	6.0	39.1
Jan 16	126.0	0.0	6.0	39.3
Jan 17	148.1	0.0	6.0	39.5
Jan 18	123.1	0.0	6.0	39.6
Jan 19	105.5	0.0	6.0	39.7
Jan 20	127.0	0.0	6.0	39.9
Jan 21	118.7	0.0	6.0	40.0
Jan 22	121.1	0.0	6.0	40.1
Jan 23	85.9	0.0	6.0	40.3
Jan 24	121.0	0.0	6.0	40.4
Jan 25	130.0	0.0	6.0	40.6
Jan 26	158.4	0.0	6.0	40.8
Jan 27	154.3	0.0	6.0	41.0
Jan 28	142.0	0.0	6.0	41.2
Jan 29	157.9	0.0	6.0	41.3
Jan 30	147.9	0.0	6.0	41.3
Jan 31	166.3	0.0	6.0	41.1

AVG. 136.2 0.0 6.0 40.0

FEBRUARY

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	DEG F
Feb 1	169.1	0.0	6.0	41.0
Feb 2	152.2	0.0	6.0	40.9
Feb 3	154.2	0.0	6.0	40.8
Feb 4	152.7	0.0	6.0	40.6
Feb 5	146.1	0.0	6.0	40.5
Feb 6	120.6	0.0	6.0	40.4
Feb 7	106.8	0.0	6.0	40.5
Feb 8	104.9	0.0	6.0	40.5
Feb 9	133.0	0.0	6.0	40.6
Feb 10	121.0	0.0	6.0	40.5
Feb 11	145.5	0.0	6.0	40.5
Feb 12	155.5	0.0	6.0	40.4
Feb 13	157.9	0.0	6.0	40.4
Feb 14	157.4	0.0	6.0	40.5
Feb 15	135.2	0.0	6.0	40.7
Feb 16	145.2	0.0	6.0	41.0
Feb 17	176.4	0.0	6.0	41.2
Feb 18	217.9	0.0	5.5	41.2
Feb 19	182.8	0.0	4.5	41.4
Feb 20	184.5	0.0	4.5	41.5
Feb 21	171.2	0.0	4.5	41.6
Feb 22	205.0	0.0	4.5	41.7
Feb 23	204.0	0.0	5.5	42.1
Feb 24	167.0	0.0	4.0	42.3
Feb 25	180.8	0.0	4.0	42.4
Feb 26	184.3	0.0	4.0	42.3
Feb 27	186.1	0.0	4.0	42.3
Feb 28	153.2	0.0	4.0	42.3
Feb 29	150.2	0.0	4.0	42.4

AVG. 159.3 0.0 5.3 41.2

MARCH

DATE	DISCH		TURBIDITY	
	KCFS	SPILL KCFS	SECCHI	DEG F
Mar 1	168.8	0.0	4.0	42.4
Mar 2	187.4	0.0	4.5	42.3
Mar 3	188.8	0.0	4.5	42.5
Mar 4	158.3	0.0	5.0	42.7
Mar 5	183.4	0.0	5.0	42.9
Mar 6	204.2	0.0	5.5	43.0
Mar 7	192.1	0.0	5.0	43.3
Mar 8	176.4	0.0	5.0	43.6
Mar 9	203.6	0.0	5.0	43.7
Mar 10	228.4	4.2	5.5	43.7
Mar 11	210.2	0.0	5.5	43.8
Mar 12	227.0	0.0	4.5	43.8
Mar 13	218.6	0.0	4.0	43.8
Mar 14	189.6	0.0	4.5	44.0
Mar 15	190.2	0.0	5.5	44.2
Mar 16	204.1	0.0	5.0	44.2
Mar 17	190.8	0.0	5.5	44.2
Mar 18	204.0	0.0	5.5	44.2
Mar 19	198.7	0.0	5.0	44.2
Mar 20	194.9	0.0	5.5	44.2
Mar 21	183.8	0.0	5.0	44.3
Mar 22	190.9	0.0	5.0	44.4
Mar 23	185.6	0.0	4.0	44.7
Mar 24	192.8	0.0	5.0	45.0
Mar 25	187.7	0.0	4.5	45.2
Mar 26	203.1	0.0	4.5	45.5
Mar 27	199.3	0.0	5.5	45.8
Mar 28	184.0	0.0	4.5	46.0
Mar 29	197.6	0.0	4.5	46.4
Mar 30	197.5	0.0	5.0	46.7
Mar 31	180.9	0.0	5.0	47.0

AVG. 194.3 0.1 4.9 44.2

TABLE 51

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

JOHN DAY PROJECT - FISH COUNTS

APRIL 2016

DATE	CHINOOK ADULT			CHINOOK COHO			unclipped			DISCH KCFS	SPILL KCFS	TURBIDITY					
	SPRING	SUMMER	FALL	JACK	ADULT	COHO	SOCKEYE	STEELHEAD	STEELHEAD			PINK	CHUM	LAMPREY	STURGEON	SECCHI	DEG F
Apr 1	14			1				21	14				0	199.2	0.0	5.0	47.4
Apr 2	7			0				23	9				0	209.6	0.0	5.0	47.5
Apr 3	14			0				27	22				0	185.6	0.0	5.0	47.9
Apr 4	23			0				16	8				0	172.4	0.0	5.0	48.2
Apr 5	33			0				24	13				0	169.9	10.2	6.0	48.4
Apr 6	33			0				14	11				0	206.4	0.0	5.5	48.9
Apr 7	19			0				10	8				0	223.2	18.2	5.0	49.5
Apr 8	57			0				15	15				0	236.0	15.6	5.0	49.9
Apr 9	80			0				14	13				0	242.8	0.0	5.5	50.2
Apr 10	59			0				9	9				0	213.7	72.3	5.5	50.9
Apr 11	102			0				25	18				0	240.3	70.8	5.5	51.6
Apr 12	170			0				8	6				0	235.5	77.2	5.0	51.8
Apr 13	94			0				11	9				0	250.7	79.7	5.0	51.7
Apr 14	110			4				7	2				0	266.9	92.7	4.5	51.9
Apr 15	135			5				14	11				0	306.7	100.5	4.0	52.0
Apr 16	152			0				10	8				0	328.5	98.3	4.5	52.3
Apr 17	134			1				12	13				0	328.4	95.2	4.5	52.6
Apr 18	222			3				15	11				0	314.3	104.4	4.5	52.9
Apr 19	224			0				5	5				8	323.2	92.5	4.5	52.8
Apr 20	172			6				8	2				2	302.5	87.7	4.5	52.8
Apr 21	179			1				9	4				1	291.6	91.4	4.5	52.8
Apr 22	195			0				3	0				1	303.9	101.9	4.5	53.1
Apr 23	291			4				7	3				0	338.2	119.0	4.5	53.1
Apr 24	727			17				7	1				1	328.6	115.9	5.0	53.2
Apr 25	990			7				7	5				0	344.3	102.8	5.0	53.0
Apr 26	815			2				2	2				2	342.6	97.4	5.0	53.1
Apr 27	595			10				3	2				1	324.3	89.7	4.0	53.0
Apr 28	893			22				3	3				1	300.7	93.1	3.0	53.3
Apr 29	563			11				4	2				1	311.7	93.8	3.5	53.4
Apr 30	795			8				2	2				18	298.2	109.6	4.5	53.5
TOTAL	7,897			102				335	231				36				
AVG.	263			3				11	8				1	271.3	67.7	4.8	51.4

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 52

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

JOHN DAY PROJECT - FISH COUNTS

MAY 2016

DATE	CHINOOK ADULT			CHINOOK	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	1,422			21			0	1	1				4				276.6	100.5	4.5	54.2	
May 2	4,349			87			0	4	4				6				265.0	78.1	4.0	54.5	
May 3	5,574			123			0	3	2				37				260.8	78.7	4.0	54.6	
May 4	7,815			127			0	1	1				8				248.3	99.6	5.0	54.9	
May 5	8,848			273			0	1	0				16				249.4	95.2	5.0	55.3	
May 6	6,972			338			0	1	1				17				251.0	82.6	5.5	55.8	
May 7	3,979			290			0	10	5				47				275.8	84.5	5.5	56.2	
May 8	3,722			226			0	1	0				5				266.4	112.4	5.5	56.5	
May 9	3,482			372			0	0	0				4				282.9	107.4	5.5	56.8	
May 10	2,865			342			0	1	1				33				281.9	89.2	5.5	57.3	
May 11	2,376			385			0	0	0				55				299.2	90.9	5.0	57.6	
May 12	1,266			206			0	0	0				6				288.9	108.7	5.0	57.6	
May 13	1,338			294			0	1	0				-7				272.7	103.8	5.0	58.4	
May 14	1,498			348			0	0	0				2				270.9	77.1	5.5	58.7	
May 15	2,714			601			0	3	1				-6				256.8	78.4	5.0	58.3	
May 16	1,782			449			0	1	1				2				246.2	106.0	5.5	58.2	
May 17	1,644			313			0	1	1				35				264.8	104.2	5.5	58.6	
May 18	1,393			254			0	2	2				-2				271.7	68.8	5.5	58.8	
May 19	1,965			348			0	1	0				11				228.5	75.2	5.5	58.8	
May 20	2,423			368			0	1	0				13				236.7	107.1	5.5	59.0	
May 21	1,804			330			0	1	1				-1				267.5	89.5	5.0	58.7	
May 22	1,720			260			0	3	0				-1				231.6	59.2	5.0	58.3	
May 23	1,234			232			0	1	1				-3				197.5	67.4	6.0	58.3	
May 24	1,068			134			0	5	0				0				213.2	90.6	6.0	58.7	
May 25	835			140			0	1	0				-2				227.6	86.8	6.0	58.8	
May 26	937			102			0	1	1				-5				227.3	65.7	6.0	58.6	
May 27	697			93			2	0	0				-1				219.8	71.2	6.0	58.6	
May 28	718			136			2	1	0				0				225.8	81.5	6.0	58.6	
May 29	1,064			194			13	1	1				2				204.3	73.9	6.0	58.9	
May 30	1,245			158			9	0	0				8				193.8	64.8	6.0	59.5	
May 31	1,288			105			39	3	3				5				216.6	70.5	6.0	60.2	
TOTAL	80,037			7,649			65	50	27				288								
AVG.	2582			247			2	2	1				9				249.0	86.1	5.4	57.7	
RUN YEAR		CHINOOK	CHINOOK						unclipped												
TOTALS TO DATE		ADULT	JACK				SOCKEYE	STEELHEAD	STEELHEAD				LAMPREY								
SPRING		87,934	7,751				65	385	258				324								

TABLE 53

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

JOHN DAY PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT		FALL	CHINOOK COHO		COHO		unclipped					DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F		
	SPRING	SUMMER		JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	CHUM	LAMPREY					STURGEON	
Jun 1	1,164			134			82	6	6				4		223.5	71.7	6.0	60.4
Jun 2	924			88			107	2	2				-13		180.1	79.8	6.0	60.6
Jun 3	1,414			134			215	13	11				7		209.0	64.4	6.0	61.4
Jun 4	1,001			73			281	2	2				13		215.1	62.9	6.0	62.5
Jun 5	1,222			82			473	14	12				23		210.4	70.7	6.0	62.9
Jun 6		1,552		124			684	20	16				30		236.6	65.7	6.0	63.0
Jun 7		1,797		158			1,065	23	21				20		219.3	70.3	6.0	63.1
Jun 8		1,403		85			954	38	27				36		234.2	68.2	6.0	63.6
Jun 9		1,783		126			1,808	21	14				28		215.4	87.8	6.0	63.7
Jun 10		2,351		128			1,326	34	26				17		219.6	80.0	6.0	63.8
Jun 11		1,720		98			1,840	20	16				24		199.7	82.8	6.0	64.1
Jun 12		1,719		148			2,397	25	13				38		207.2	76.7	6.0	64.2
Jun 13		2,647		138			3,756	35	13				20		192.0	70.9	6.0	64.1
Jun 14		2,771		178			6,316	35	20				29		177.3	75.9	6.0	63.9
Jun 15		2,054		113			7,028	41	28				27		195.0	56.7	6.0	63.8
Jun 16		2,069		95			5,492	45	36				28		188.7	60.5	5.0	63.6
Jun 17		2,408		216			8,972	44	34				35		190.6	79.4	5.0	63.7
Jun 18		2,490		149			7,411	56	29				34		199.1	67.6	5.0	63.3
Jun 19		2,719		239			12,876	66	43				30		176.0	46.4	5.0	63.1
Jun 20		1,844		128			11,396	82	44				66		153.6	62.0	5.0	63.4
Jun 21		1,622		152			13,835	89	48				17		192.9	78.5	6.0	63.3
Jun 22		1,884		145			18,976	107	52				42		196.7	72.3	6.0	63.5
Jun 23		1,761		170			15,751	98	46				40		188.5	59.0	6.0	63.6
Jun 24		2,440		171			15,401	120	51				66		195.3	52.2	6.0	63.7
Jun 25		2,639		165			19,340	204	121				57		164.6	78.5	6.0	64.2
Jun 26		2,506		147			18,515	149	96				91		197.4	74.7	6.0	65.0
Jun 27		3,209		192			16,825	178	113				162		196.7	58.3	6.0	65.3
Jun 28		1,960		167			12,001	168	118				173		193.7	62.0	6.0	65.2
Jun 29		1,844		144			11,783	213	114				192		195.1	75.0	6.0	65.6
Jun 30		2,112		197			9,836	227	144				285		186.9	69.4	6.0	66.1
TOTAL	5,725	53,304		4,284			226,742	2,175	1,316				1,621					

AVG.	1145	2,132		143			7,558	73	44				54		198.3	69.3	5.8	63.6
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	93,659	8,262
SUMMER	53,304	3,773
TOTAL	146,963	12,035

SOCKEYE	STEELHEAD	unclipped STEELHEAD	LAMPREY
226,807	2,560	1,574	1,945

TABLE 54

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

JOHN DAY PROJECT - FISH COUNTS

JULY 2016

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		2,169		168			8,338	272	134			144		180.7	59.5	6.0	66.6
Jul 2		2,465		174			6,855	294	145			173		198.7	51.5	6.0	66.9
Jul 3		2,177		165			7,134	362	189			133		161.9	64.6	6.0	67.0
Jul 4		2,036		162			6,920	333	173			128		161.3	64.7	6.0	67.2
Jul 5		1,974		181			5,632	302	144			131		170.1	50.5	6.0	67.3
Jul 6		1,410		155			3,784	258	146			118		167.9	53.6	6.0	67.6
Jul 7		1,303		135			2,901	336	235			129		168.8	68.2	6.0	67.9
Jul 8		1,272		174			2,530	333	167			146		170.8	68.3	6.0	68.2
Jul 9		1,577		166			2,265	378	204			105		177.0	49.4	6.0	68.3
Jul 10		1,780		148			2,263	429	224			120		164.8	39.6	6.0	68.2
Jul 11		1,528		111			1,838	459	239			145		125.4	53.4	6.0	68.2
Jul 12		1,078		83			1,143	272	145			112		132.8	54.2	6.0	68.3
Jul 13		741		70			1,143	264	138			92		142.2	45.9	6.0	68.3
Jul 14		952		85			1,075	258	120			60		153.0	50.7	6.0	68.2
Jul 15		1,032		168			1,008	366	173			162		161.1	62.6	6.0	68.0
Jul 16		1,184		174			1,430	413	212			156		155.8	60.6	6.0	67.9
Jul 17		988		150			686	293	142			92		157.9	45.8	6.0	68.1
Jul 18		1,037		141			744	355	183			131		153.1	50.8	6.0	68.3
Jul 19		926		107			489	399	188			155		160.1	66.3	6.0	68.5
Jul 20		674		113			403	318	151			156		165.5	55.6	6.0	68.8
Jul 21		592		99			511	249	136			109		146.0	48.7	6.0	69.2
Jul 22		715		116			367	380	160			113		162.9	37.0	6.0	69.2
Jul 23		685		76			336	340	169			144		122.9	41.9	6.0	69.4
Jul 24		1,070		117			408	351	162			100		139.5	39.2	6.0	69.8
Jul 25		882		89			358	319	169			88		131.2	42.1	6.0	69.8
Jul 26		592		97			287	321	171			137		140.8	42.6	6.0	69.6
Jul 27		413		53			234	371	184			116		141.9	46.4	6.0	70.2
Jul 28		440		74			275	370	171			89		154.6	47.3	6.0	70.6
Jul 29		364		45			205	322	161			120		157.6	48.1	6.0	70.9
Jul 30		714		79			302	678	277			162		160.3	41.7	6.0	70.8
Jul 31		557		71			221	538	265			162		139.3	46.3	6.0	71.3
TOTAL		35,327		3,746			62,085	10,933	5,477			3,928					

AVG	1,140	121	2,003	353	177	127	155.7	51.5	6.0	68.7
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RUN YEAR	CHINOOK	CHINOOK	unclipped			LAMPREY
TOTALS TO DATE	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	
SPRING	93,659	8,262	288,892	13,493	7,051	5,873
SUMMER	88,631	7,519				
TOTAL	182,290	15,781				

TABLE 55
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT. PORTLAND

JOHN DAY PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK COHO			unclipped				CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	COHO	ADULT	JACK	SOCKEYE	STEELHEAD							
Aug 1		408		47	0	0	132	244	122	0		126	0	154.0	51.6	6.0	71.6
Aug 2		322		44	0	0	88	144	77	0		116	0	171.5	38.9	6.0	71.6
Aug 3		325		39	0	0	86	178	80	0		201	0	128.5	38.4	6.0	71.4
Aug 4		201		33	0	0	69	130	64	0		175	0	128.2	43.3	6.0	71.6
Aug 5		372		33	0	0	70	124	51	0		134	0	144.9	41.8	6.0	71.6
Aug 6			421	52	0	0	77	153	61	0		105	0	139.4	38.7	6.0	71.2
Aug 7			429	46	0	0	65	115	47	0		169	0	128.3	37.0	6.0	71.0
Aug 8			475	52	0	0	46	123	63	0		65	0	122.8	39.7	6.0	70.7
Aug 9			450	64	0	0	56	155	94	0		94	0	131.9	39.2	6.0	70.5
Aug 10			613	42	0	0	48	142	65	0		94	0	131.1	40.3	6.0	70.3
Aug 11			484	37	0	0	53	149	56	0		52	1	134.6	44.6	6.0	70.6
Aug 12			570	43	0	0	27	167	65	0		57	0	148.0	42.5	6.0	70.9
Aug 13			669	52	0	0	28	237	105	0		48	0	141.6	42.8	6.0	70.9
Aug 14			650	65	0	0	23	250	90	0		64	0	142.5	35.3	6.0	70.3
Aug 15			674	87	1	4	30	308	132	0		62	0	118.0	33.1	6.0	70.3
Aug 16			1,038	81	-1	2	11	326	133	0		94	1	109.8	34.6	6.0	70.6
Aug 17			778	120	3	0	11	232	88	0		57	0	114.9	37.1	6.0	71.1
Aug 18			605	77	1	1	14	231	93	0		102	0	123.8	37.9	6.0	71.6
Aug 19			994	174	3	5	17	269	120	0		84	0	126.1	44.9	6.0	72.4
Aug 20			1,264	157	7	2	9	268	102	0		114	0	149.8	44.1	6.0	72.6
Aug 21			1,274	158	0	0	6	222	84	0		98	0	148.4	31.7	6.0	72.3
Aug 22			1,372	210	0	3	11	276	90	0		169	0	106.2	36.6	6.0	72.0
Aug 23			394	90	2	4	1	141	41	0		96	0	121.4	37.3	6.0	72.1
Aug 24			843	123	1	2	2	114	36	0		53	0	123.5	35.8	6.0	72.2
Aug 25			1,701	249	8	0	3	146	41	0		44	0	119.9	35.3	6.0	72.2
Aug 26			904	139	6	2	4	170	46	0		94	0	117.7	39.4	6.0	72.3
Aug 27			1,332	224	2	1	4	156	45	0		103	0	131.2	30.4	6.0	72.2
Aug 28			2,305	182	10	12	2	138	42	0		95	0	101.7	32.7	6.0	72.0
Aug 29			3,277	356	8	6	3	195	57	1		44	0	108.5	38.7	6.0	72.0
Aug 30			4,283	427	3	2	-12	406	108	0		80	0	129.7	34.0	6.0	71.8
Aug 31			2,553	467	2	1	4	374	109	0		75	0	113.3	31.2	6.0	71.6
TOTAL		1,628	30,352	3,970	56	47	988	6,283	2,407	1		2,964	2				
AVG.		326	1,167	128	2	2	32	203	78	0		96	0	129.4	38.4	6.0	71.5

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	93,659	8,262
SUMMER	90,259	7,715
FALL	30,352	3,774
TOTAL	214,270	19,751

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	LAMPREY	STURGEON
56	47	289,880	19,776	9,458	1	8,837	2

TABLE 56

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

JOHN DAY PROJECT - FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	CHUM	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TURBIDITY DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK											
Sep 1			1,877	495	5	1	2	318	91	0		38	1	104.1	0.9	6.0	71.2
Sep 2			2,958	612	11	3	4	465	107	0		29	0	87.9	0.9	6.0	70.9
Sep 3			8,678	994	48	10	1	625	166	0		52	0	89.8	1.0	6.0	70.7
Sep 4			9,567	1,210	63	9	30	1,101	246	0		55	0	85.5	1.0	6.0	70.5
Sep 5			9,654	1,060	86	35	5	1,978	452	0		44	0	80.8	1.0	6.0	70.2
Sep 6			10,497	1,044	153	31	7	1,668	405	1		63	0	82.1	1.0	6.0	69.9
Sep 7			9,529	966	193	15	2	2,333	568	0		24	1	87.1	1.3	6.0	69.6
Sep 8			8,700	1,146	364	82	19	2,788	654	0		33	0	84.8	1.0	6.0	69.3
Sep 9			14,137	1,860	491	76	8	2,304	588	0		43	0	75.3	0.9	6.0	69.1
Sep 10			13,063	1,791	759	189	3	2,603	608	0		62	0	67.0	0.9	6.0	68.9
Sep 11			11,958	1,636	868	183	2	3,846	891	0		54	5	93.6	1.0	6.0	68.6
Sep 12			10,908	1,374	752	196	2	4,004	929	0		41	0	78.2	1.1	6.0	68.4
Sep 13			10,167	1,450	803	65	0	2,861	681	0		31	0	90.2	1.0	6.0	68.2
Sep 14			9,598	849	716	48	-2	2,586	550	0		24	0	71.5	1.0	6.0	68.0
Sep 15			6,198	1,078	651	51	0	2,622	622	0		15	0	93.0	1.2	6.0	67.8
Sep 16			7,154	945	490	78	5	2,746	631	0		21	2	92.1	1.0	6.0	67.8
Sep 17			12,145	1,404	808	168	0	4,640	1,028	0		11	0	100.4	1.2	6.0	67.4
Sep 18			10,792	1,635	655	126	1	4,628	1,012	0		16	0	80.7	1.0	6.0	67.3
Sep 19			8,599	1,051	623	107	2	3,736	828	0		34	0	61.7	0.9	6.0	67.1
Sep 20			6,602	963	424	107	1	2,828	684	0		11	0	99.2	0.9	6.0	66.9
Sep 21			6,656	1,189	530	122	2	3,990	861	0		24	0	107.7	0.9	6.0	66.8
Sep 22			3,675	1,000	343	39	1	2,732	614	0		10	0	99.5	0.9	6.0	66.5
Sep 23			2,794	437	222	12	0	2,436	504	0		17	0	80.8	1.0	6.0	66.0
Sep 24			4,064	898	324	13	-1	3,155	673	0		9	0	77.7	0.9	6.0	65.8
Sep 25			3,177	523	324	20	0	3,754	838	0		12	0	77.2	0.9	6.0	65.6
Sep 26			3,648	823	338	25	0	3,830	928	0		13	0	89.5	0.9	6.0	65.6
Sep 27			2,737	600	307	35	2	3,217	814	0		24	0	104.8	0.9	6.0	65.3
Sep 28			2,051	616	419	46	0	2,898	736	0		19	1	105.0	0.9	6.0	64.9
Sep 29			2,388	600	343	64	0	2,810	704	0		19	0	90.0	0.9	6.0	64.8
Sep 30			2,481	675	360	108	0	3,152	765	0		2	0	90.0	0.9	6.0	64.5
TOTAL			216,452	30,924	12,473	2,064	96	82,654	19,178	1		850	10				
AVG.			7,215	1,031	416	69	3	2,755	639			28	0	87.6	1.0	6.0	67.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	93,659	8,262
SUMMER	90,259	7,715
FALL	246,804	34,698
TOTAL	430,722	50,675

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK
12,529	2,111	289,976	102,430	28,636	2

LAMPREY	STURGEON
9,687	12

TABLE 57

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

JOHN DAY PROJECT - FISH COUNTS

OCTOBER 2016

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			2,119	630	249	27		2,474	616			11	0	78.0	0.9	6.0	64.5
Oct 2			1,893	507	190	56		2,241	516			10	0	74.6	0.9	6.0	64.3
Oct 3			1,680	428	132	6		2,041	520			4	-1	62.8	0.9	6.0	64.0
Oct 4			1,117	249	90	9		1,323	370			8	0	76.5	1.0	6.0	64.0
Oct 5			786	183	62	7		1,148	308			6	0	89.3	0.9	6.0	63.9
Oct 6			1,181	290	93	5		1,398	446			5	0	102.8	0.9	6.0	63.8
Oct 7			906	254	141	33		1,278	433			7	0	88.7	0.6	6.0	63.7
Oct 8			1,160	208	373	26		1,966	663			5	1	87.0	0.8	6.0	63.6
Oct 9			995	269	621	70		2,138	696			-8	0	85.4	1.1	6.0	63.4
Oct 10			1,045	247	578	30		2,060	651			11	0	86.4	0.9	6.0	63.2
Oct 11			819	297	302	50		1,303	459			-2	0	107.5	0.8	6.0	63.0
Oct 12			748	241	245	33		1,047	393			1	0	100.1	1.1	6.0	62.7
Oct 13			724	110	291	22		979	378			-4	0	120.3	0.9	6.0	62.4
Oct 14			354	72	113	9		536	220			1	0	93.1	0.8	6.0	62.3
Oct 15			488	61	111	7		696	317			1	0	108.8	0.8	6.0	62.2
Oct 16			440	78	207	12		865	398			1	0	107.9	0.8	6.0	62.0
Oct 17			466	111	241	13		939	360			1	0	117.1	0.8	6.0	61.7
Oct 18			399	128	138	24		901	370			1	0	102.6	0.9	6.0	61.2
Oct 19			235	92	54	12		587	232			12	3	103.0	0.8	6.0	60.8
Oct 20			202	34	50	3		304	113			2	0	111.7	0.9	6.0	60.5
Oct 21			230	68	35	12		265	94			1	1	94.9	0.9	6.0	60.2
Oct 22			247	62	40	14		286	113			4	0	119.0	0.8	6.0	60.0
Oct 23			348	73	18	3		203	76			2	0	102.1	0.8	6.0	59.8
Oct 24			394	56	27	3		183	78			1	0	111.4	0.8	6.0	59.5
Oct 25			213	29	6	0		135	53			0	0	120.9	0.8	6.0	59.2
Oct 26			233	32	24	1		110	38			2	0	102.7	0.8	6.0	59.0
Oct 27			193	24	11	1		128	36			0	0	123.4	0.8	6.0	58.7
Oct 28			209	70	17	7		201	77			0	0	118.2	0.7	6.0	58.6
Oct 29			252	26	14	1		180	69			-1	0	131.0	0.8	6.0	58.4
Oct 30			286	67	11	4		130	54			0	0	143.0	0.8	6.0	58.0
Oct 31			280	53	6	5		151	40			0	0	133.8	0.8	6.0	57.6
TOTAL			20,642	5,049	4,490	505		28,196	9,187			82	4				
AVG.			666	163	145	16		910	296			3	0	103.4	0.8	6.0	61.5

RUN YEAR	CHINOOK		COHO		unclipped		LAMPREY		STURGEON	
	ADULT	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK		
TOTALS TO DATE										
SPRING	93,659	8,262	17,019	2,616	289,976	130,626	37,823	2	9,769	16
SUMMER	90,259	7,715								
FALL	267,446	39,747								
TOTAL	451,364	55,724								

Note: Visual counts ended October 31.

TABLE 58
DISCHARGE AND WATER QUALITY DATA

JOHN DAY PROJECT 2016

NOVEMBER					DECEMBER				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY		DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F				SECCHI	DEG F
Nov 1	132.2	0.7	6.0	57.4	Dec 1	133.8	0.0	6.0	50.4
Nov 2	133.4	0.7	6.0	57.4	Dec 2	138.6	0.0	6.0	50.0
Nov 3	152.2	0.7	6.0	57.3	Dec 3	140.0	0.0	6.0	49.7
Nov 4	143.3	0.7	6.0	57.2	Dec 4	124.1	0.0	6.0	49.4
Nov 5	142.7	0.8	6.0	57.0	Dec 5	118.3	0.0	6.0	48.9
Nov 6	137.4	0.7	6.0	56.9	Dec 6	128.2	0.0	6.0	48.6
Nov 7	131.0	0.7	6.0	56.9	Dec 7	148.9	0.0	6.0	48.1
Nov 8	138.5	0.7	6.0	56.8	Dec 8	161.5	0.0	6.0	47.6
Nov 9	136.9	0.7	6.0	56.6	Dec 9	163.0	0.0	6.0	47.2
Nov 10	133.6	0.8	6.0	56.5	Dec 10	154.7	0.0	6.0	46.7
Nov 11	137.4	0.7	6.0	56.4	Dec 11	134.9	0.0	6.0	46.1
Nov 12	141.5	0.7	6.0	56.4	Dec 12	128.0	0.0	6.0	45.8
Nov 13	116.4	0.7	6.0	56.4	Dec 13	128.4	0.0	6.0	45.4
Nov 14	122.4	0.7	6.0	56.5	Dec 14	131.9	0.0	6.0	44.8
Nov 15	139.7	0.7	6.0	56.5	Dec 15	149.4	0.0	6.0	44.1
Nov 16	117.9	0.8	6.0	56.3	Dec 16	150.7	0.0	6.0	43.5
Nov 17	131.6	0.7	6.0	56.0	Dec 17	136.2	0.0	6.0	43.0
Nov 18	139.8	0.7	6.0	55.7	Dec 18	151.2	0.0	6.0	42.3
Nov 19	139.5	0.7	6.0	55.4	Dec 19	151.6	0.0	6.0	41.7
Nov 20	144.4	0.7	6.0	55.0	Dec 20	156.8	0.0	6.0	41.1
Nov 21	150.2	0.8	6.0	54.6	Dec 21	157.3	0.0	6.0	40.7
Nov 22	135.7	0.7	6.0	54.2	Dec 22	143.8	0.0	6.0	40.5
Nov 23	141.5	0.7	6.0	53.7	Dec 23	158.8	0.0	6.0	40.2
Nov 24	151.6	0.7	6.0	53.3	Dec 24	171.2	0.0	6.0	39.9
Nov 25	130.7	1.0	6.0	53.0	Dec 25	147.4	0.0	6.0	39.8
Nov 26	115.7	0.7	6.0	52.7	Dec 26	153.1	0.0	6.0	39.8
Nov 27	125.8	0.7	6.0	52.2	Dec 27	168.9	0.0	6.0	39.8
Nov 28	138.4	0.7	6.0	51.7	Dec 28	172.3	0.0	6.0	39.9
Nov 29	130.1	0.7	6.0	51.3	Dec 29	134.1	0.0	6.0	40.1
Nov 30	137.8	0.7	6.0	50.8	Dec 30	146.2	0.0	6.0	40.2
					Dec 31		0.0	6.0	40.3
AVG.	135.6	0.7	6.0	55.3	AVG.	146.1	0.0	6.0	44.1

TABLE 59

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - NIGHT FISH COUNTS

JUNE 2016

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		23		4			260	0	0		250
Jun 16		17		1			265	3	1		169
Jun 17		26		0			316	1	0		173
Jun 18		36		7			678	2	1		93
Jun 19		23		4			762	3	2		146
Jun 20		21		2			959	2	1		192
Jun 21		23		3			1,277	1	0		117
Jun 22		17		1			822	4	2		229
Jun 23		17		3			917	5	4		225
Jun 24		34		5			1,004	2	2		196
Jun 25		45		3			1,056	5	4		307
Jun 26		56		1			1,045	5	1		442
Jun 27		42		6			869	2	1		461
Jun 28		31		0			796	0	0		368
Jun 29		15		0			583	7	3		554
Jun 30		43		6			671	2	1		488
TOTAL		469		46			12,280	44	23		4,410
AVG.		29		3			768	3	1		276

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

TABLE 60

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT -NIGHT FISH COUNTS

JULY 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	unclipped			LAMPREY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD		PINK
Jul 1		35		2			618	5	0		374
Jul 2		32		1			490	2	1		435
Jul 3		34		0			517	4	3		347
Jul 4		35		0			585	4	2		501
Jul 5		20		3			318	8	3		300
Jul 6		46		7			320	2	1		176
Jul 7		24		3			192	3	1		180
Jul 8		12		1			191	8	4		252
Jul 9		32		3			394	5	4		270
Jul 10		44		6			237	12	7		230
Jul 11		20		1			142	7	1		157
Jul 12		7		1			136	5	2		221
Jul 13		9		1			89	4	3		224
Jul 14		12		0			122	1	0		244
Jul 15		12		1			133	4	1		467
Jul 16		14		0			91	6	3		323
Jul 17		14		0			75	6	3		300
Jul 18		16		0			61	8	3		418
Jul 19		9		0			57	2	0		256
Jul 20		7		0			83	6	3		251
Jul 21		7		1			76	5	3		324
Jul 22		11		0			31	5	1		415
Jul 23		15		0			36	3	1		393
Jul 24		6		0			77	6	4		527
Jul 25		5		0			57	2	1		478
Jul 26		10		0			48	5	4		414
Jul 27		6		0			57	11	6		367
Jul 28		6		0			17	6	3		371
Jul 29		6		0			42	1	0		281
Jul 30		12		0			58	6	3		612
Jul 31		5		0			39	11	4		414
TOTAL		523		31			5,389	163	75		10,522

AVG

17

1

174

5

2

339

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

TABLE 61

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

JOHN DAY PROJECT - NIGHT FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					
Aug 1		11		0	0		22	8	3		416
Aug 2		4		2	0		44	14	3		479
Aug 3		12		0	0		35	9	4		460
Aug 4		14		0	0		29	5	2		395
Aug 5		15		1	0		31	15	6		531
Aug 6			7	0	0		13	7	4		305
Aug 7			8	1	0		21	5	0		215
Aug 8			12	0	0		9	2	0		154
Aug 9			17	0	0		11	6	5		161
Aug 10			4	0	0		7	4	1		117
Aug 11			8	0	0		15	9	5		146
Aug 12			7	0	0		6	5	1		273
Aug 13			6	0	0		9	4	2		259
Aug 14			8	0	0		2	14	5		180
Aug 15			6	0	0		2	11	1		177
Aug 16			11	0	0		8	6	2		138
Aug 17			6	1	0		3	11	7		223
Aug 18			1	0	-1		5	5	1		284
Aug 19			20	5	0		1	8	3		259
Aug 20			19	3	0		0	3	1		400
Aug 21			10	0	0		1	11	6		313
Aug 22			7	0	0		0	11	4		346
Aug 23			7	1	0		1	7	2		276
Aug 24			30	0	0		0	2	0		246
Aug 25			14	0	0		0	9	3		247
Aug 26			12	2	0		0	7	0		308
Aug 27			25	4	0		0	10	1		315
Aug 28			39	1	0		0	17	2		242
Aug 29			27	2	0		0	17	4		284
Aug 30			44	1	0		1	50	18		196
Aug 31			42	3	0		0	19	5		183
TOTAL		56	397	27	-1	0	276	311	101		8,528
AVG.		11	15	1	0	#DIV/0!	9	10	3		275

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

SEPTEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	unclipped		PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		
Sep 1			53	8	0	0	0	55	10		127
Sep 2			179	13	3	0	0	84	22		163
Sep 3			203	4	2	0	0	136	37		202
Sep 4			187	23	7	0	0	138	30		183
Sep 5			157	10	10	1	0	232	63		157
Sep 6			222	7	26	3	1	190	37		127
Sep 7			100	1	13	2	0	219	57		160
Sep 8			116	5	37	2	0	203	64		202
Sep 9			76	7	12	0	0	205	36		179
Sep 10			82	10	9	2	0	217	32		98
Sep 11			39	8	12	3	0	272	70		172
Sep 12			39	9	5	1	0	235	63		140
Sep 13			54	4	19	3	0	186	40		95
Sep 14			55	3	4	0	0	157	41		47
Sep 15			77	2	5	1	0	165	36		78
Sep 16			54	15	12	2	0	231	49		84
Sep 17			66	1	17	2	0	297	62		45
Sep 18			50	0	18	2	0	219	53		51
Sep 19			20	3	7	2	0	122	25		48
Sep 20			15	0	35	0	0	187	39		54
Sep 21			11	0	20	2	0	75	13		36
Sep 22			4	0	6	2	0	94	18		32
Sep 23			5	0	3	0	0	99	16		31
Sep 24			7	1	12	1	0	135	29		22
Sep 25			22	9	2	0	0	163	27		37
Sep 26			22	3	1	0	0	127	24		61
Sep 27			20	5	3	0	0	106	21		38
Sep 28			8	0	17	4	0	111	31		37
Sep 29			17	1	5	0	0	71	13		50
Sep 30			12	0	8	2	0	83	16		43
TOTAL			1,972	152	330	37	1	4,814	1,074		2,799
AVG.			66	5	11	1	0	160	36		93

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

TABLE 63

**YEARLY TOTALS OF SALMONIDS COUNTED OVER
JOHN DAY DAM
1968 - 2016**

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTAL
1968	233,654	121,256	87,847	38,233	480,990
1969	276,051	86,348	39,847	13,589	415,835
1970	222,506	82,440	78,133	19,543	402,622
1971	193,881	115,977	72,232	40,830	422,920
1972	225,631	141,628	51,793	17,533	436,585
1973	249,492	101,440	64,744	13,359	429,035
1974	167,888	43,756	33,121	14,651	259,416
1975	159,079	32,651	50,774	6,305	248,809
1976	175,911	59,808	30,446	5,806	271,971
1977	194,931	102,558	85,701	1,123	384,313
1978	174,852	44,188	13,778	8,355	241,173
1979	118,154	55,877	43,630	5,061	222,722
1980	100,664	78,199	50,675	1,924	231,462
1981	114,359	95,172	46,146	2,562	258,239
1982	144,082	108,603	37,970	4,063	294,718
1983	139,866	154,425	91,917	1,640	387,848
1984	188,373	201,154	107,951	2,080	499,558
1985	337,624	247,093	124,941	1,652	711,310
1986	346,700	238,010	46,327	1,933	632,970
1987	327,752	170,654	75,529	3,355	577,290
1988	277,251	164,650	48,095	6,813	496,809
1989	208,254	193,460	39,374	9,663	450,751
1990	156,313	107,849	42,077	3,023	309,262
1991	118,921	160,257	63,760	8,021	350,959
1992	132,025	195,194	69,731	2,633	399,583
1993	141,705	95,642	61,218	2,995	301,560
1994	126,645	93,075	11,170	2,842	233,732
1995	107,277	123,246	8,667	2,117	241,307
1996	130,602	156,002	25,698	4,279	316,581
1997	185,240	157,038	35,830	4,229	382,337
1998	130,028	158,547	9,837	8,497	306,909
1999	163,282	165,314	14,809	13,232	356,638
2000	269,371	220,328	88,372	23,969	602,040
2001	510,987	483,409	107,869	51,181	1,153,446
2002	447,729	390,300	41,915	9,272	889,216
2003	472,340	305,042	35,417	38,765	851,564
2004	447,891	233,431	113,497	35,522	830,341
2005	322,991	232,103	69,770	36,205	661,081
2006	290,161	231,355	35,387	38,374	595,281
2007	215,876	237,517	24,277	39,421	517,091
2008	342,952	277,162	193,409	44,898	858,421
2009	451,974	581,645	157,402	71,739	1,262,760
2010	534,247	283,812	324,128	23,272	1,165,459
2011	497,771	257,345	143,605	65,668	965,087
2012	444,136	162,083	394,166	33,859	1,034,259
2013	710,149	155,742	155,498	18,139	1,039,604
2014	766,218	203,232	557,531	115,841	1,642,822
2015	891,578	179,506	366,364	21,828	1,459,276
2016	507,088	130,626	289,976	19,635	947,325
TOTALS	14,092,452	8,616,149	4,762,351	959,529	28,431,287
10-Year Average	536,199	246,867	260,636	45,430	1,089,210

***Jacks included**

1999 - Total includes 1 pink
2005 - Total includes 12 pinks
2006 - Total includes 1 chum and 3 pinks
2011 - Total includes 698 pinks
2012 - Total includes 15 pinks
2013 - Total includes 64 pinks and 12 chum

TABLE 64

MONTHLY COUNT OF CHINOOK SALMON
JOHN DAY DAM 1968 - 2016

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		21	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				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	
TOTAL				4,144	1,245,079	2,218,361	1,399,839	1,011,098	999,902	6,201,657	999,272	12,625	14,092,452	3,627,450	2,324,171	8,127,655	2,911,194	
10-Year Average				22,790	93,294	61,604	34,370	33,999	246,614	43,112			536,199	123,685	90,633	321,463	99,577	
*Jacks included																		

TABLE 65

**MONTHLY COUNT OF SOCKEYE SALMON
JOHN DAY DAM
1968 - 2016**

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						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						7,004	4,141	22	2	1			11,170
1995					1	4,242	4,352	71	1				8,667
1996						15,316	10,323	59	0				25,698
1997					10	11,605	23,604	603	4	4			35,830
1998						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						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						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						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
TOTAL					257	2,532,616	2,203,770	24,284	1,304	119	1		4,762,351
10-Year Average					20	156,592	103,098	848	75				260,636

TABLE 66
 MONTHLY COUNT OF COHO SALMON
 JOHN DAY DAM 1968 - 2016

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
TOTAL				0	2	1	119	21,504	641,542	287,456	8,785	119	959,529
10-Year Average								1,074	29,680	14,593			45,430

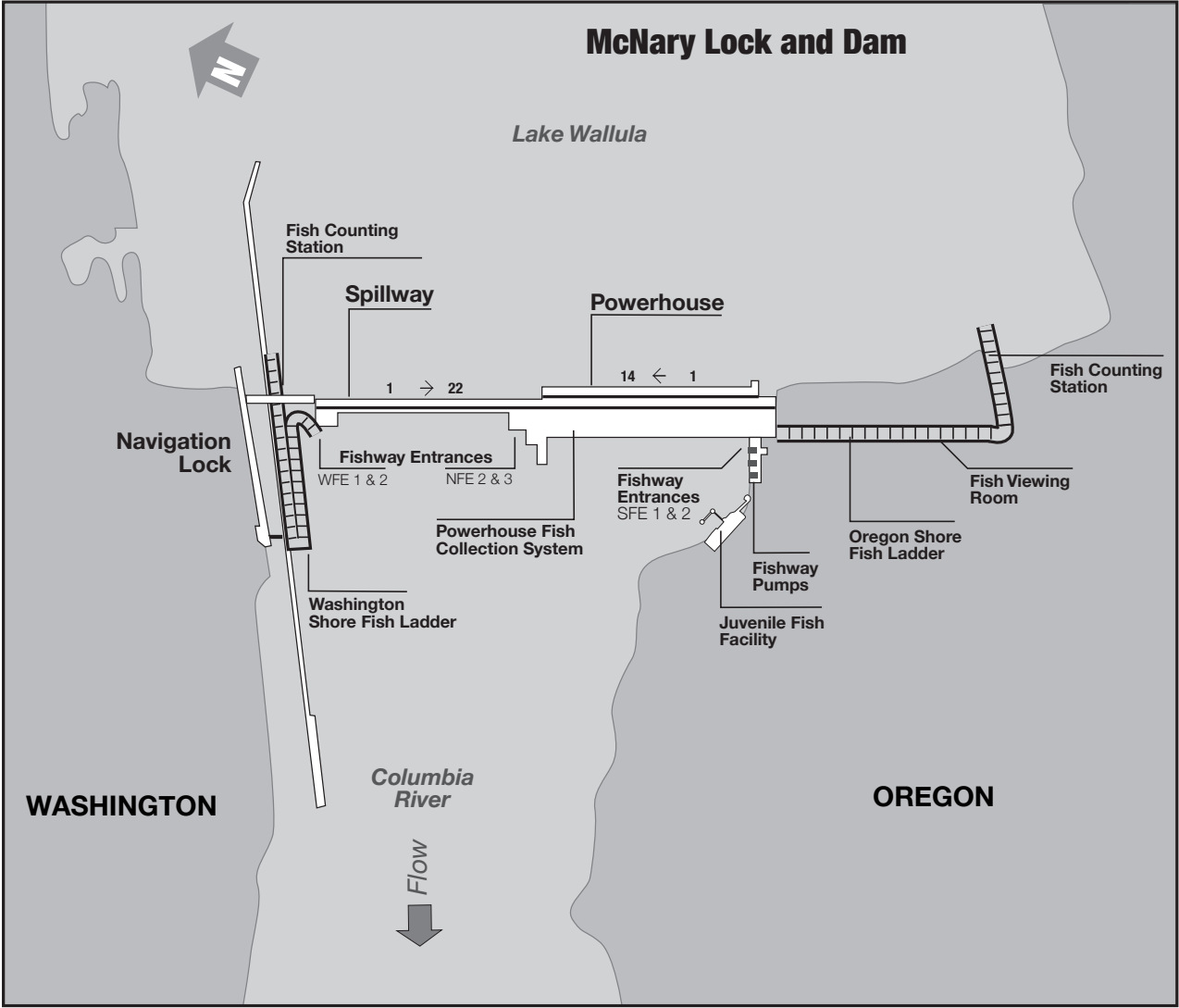
*Jacks included

TABLE 67

**MONTHLY COUNT OF STEELHEAD
JOHN DAY DAM 1968 - 2016**

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
TOTAL	181	1,420	25,232	118,827	42,471	121,018	936,937	1,415,324	4,217,314	1,681,311	52,038	4,076	8,616,149
10-YR Average				1,454	431	3,308	30,442	49,988	118,646	40,848			246,867

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

1 – 4 January	Ladder in service.
4 – 27 January	Ladder dewatered for annual maintenance.
27 January – 1 December	Ladder in service.
1 December – December 31 passage improvements.	Ladder dewatered for annual maintenance and lamprey

Oregon Ladder

1 January – 1 February	Ladder in service.
1 – 27 February	Ladder dewatered for annual maintenance.
27 February – 31 December	Ladder in service.

FISHWAY ACTIVITIES

Washington ladder maintenance activities in January consisted of a camera inspection of the diffuser gratings, leakage points sealed, and maintenance performed on all systems above water. Four PIT tag detectors were rehabilitated by PSMFC. The drive system for exit weir 337 was rebuilt. In December, the focus was lamprey passage improvements and exit weir rehabilitation.

The Wasco county PUD system was not providing auxiliary water from 4 to 27 January and from 1 to 31 December. The turbine unit was out of service January 4 to December 31 for runner replacement. The PUD's bypass system provided auxiliary water when the ladder was in service.

Oregon ladder maintenance activities were limited due to safety concerns. The 1000 cubic feet per second (cfs) auxiliary conduit intake valve was not closed this winter. In order to close the conduit, the discharge valves, which require rehabilitation, need to

be closed. Therefore, the auxiliary conduit remained open during the outage. Due to the flow from the conduit, the diffuser grating could not be examined by a diver or with a camera. Fish pump discharge sluiceways could not be closed either due to possible hydraulic oil leaks. These gates also require rehabilitation.

At the Oregon ladder, new picketed leads were built and painted. A rehabilitated mechanical drive system was installed at exit weirs 337 and 338. PSMFC rehabilitated one PIT detector. Rehabilitated floating orifice gates (FOGs) were installed at W1, W3 and W4. The FOGs at W43 and W44 were removed for rehabilitation. Bulkheads were installed at W14, W43 and W44. Maintenance was performed on all systems above water.

Fish pumps 1 and 3 were out of service from 1 to 27 February for annual maintenance. Fish pump 2 remains out of service for major overhaul, which is now scheduled for completion around March, 2017.

From 29 March to 21 December, the juvenile bypass channel was operated for both juvenile and adult fallback passage. From 29 November to 21 December, the system was in emergency bypass due to the side screen brush failing. When in emergency bypass or out of service, the system does not provide auxiliary flow to the Oregon ladder's north powerhouse entrances.

TABLE 68

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER McNARY DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL*
CHINOOK*				5,606	78,622	57,638	39,343	24,867	212,562	30,983			449,621
STEELHEAD				471	4	1,359	8,818	6,325	67,132	34,654			118,763
SOCKEYE				1	10	190,659	70,113	864	47	2			261,696
COHO*								169	8,859	2,985			12,013
CHUM													0
PINK													0
TOTAL				6,078	78,636	249,656	118,274	32,225	288,600	68,624			842,093
SHAD					468	694,306	300,122	8,859					1,003,755
LAMPREY				2	44	114	590	620	204	38			1,612
STURGEON					1								1
BULL TROUT													0

*Jacks Included

TABLE 69
DISCHARGE AND WATER QUALITY DATA
MCNARY PROJECT 2016

JANUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Jan 1	131.5	0.0	6+	40.0
Jan 2	134.8	0.0	6+	40.0
Jan 3	148.5	0.0	6+	40.0
Jan 4	155.2	0.0	6+	39.0
Jan 5	143.6	0.0	6+	39.0
Jan 6	141.7	0.0	6+	38.0
Jan 7	132.4	0.0	6+	38.0
Jan 8	136.7	0.0	6+	39.0
Jan 9	131.1	0.0	6+	39.0
Jan 10	122.4	0.0	6+	39.0
Jan 11	148.8	0.0	6+	39.0
Jan 12	139.1	0.0	6+	40.0
Jan 13	135.4	0.0	6+	40.0
Jan 14	119.8	0.0	6+	40.0
Jan 15	129.7	0.0	6+	40.0
Jan 16	141.8	0.0	6+	40.0
Jan 17	124.8	0.0	6+	41.0
Jan 18	102.6	0.0	6+	41.0
Jan 19	124.5	0.0	6+	41.0
Jan 20	109.3	0.0	6+	40.0
Jan 21	111.6	0.0	6+	41.0
Jan 22	81.8	0.0	6+	41.0
Jan 23	118.0	0.0	6+	41.0
Jan 24	121.1	0.0	6+	41.0
Jan 25	149.3	0.0	6+	41.0
Jan 26	149.8	0.0	6+	41.0
Jan 27	143.6	0.0	6+	41.0
Jan 28	145.6	0.0	6+	41.0
Jan 29	148.0	0.0	6+	40.0
Jan 30	164.9	0.0	6+	40.0
Jan 31	153.5	0.0	6+	40.0
AVG.	133.6	0.0	6+	40.0

FEBRUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Feb 1	151.7	0.0	6+	40.0
Feb 2	150.7	0.0	6+	40.0
Feb 3	146.5	0.0	6+	40.0
Feb 4	140.4	0.0	5.6	40.0
Feb 5	113.2	0.0	6+	40.0
Feb 6	105.6	0.0	6+	40.0
Feb 7	104.5	0.0	6+	40.0
Feb 8	130.4	0.0	6+	40.0
Feb 9	112.5	0.0	6+	40.0
Feb 10	147.6	0.0	6+	40.0
Feb 11	160.6	0.0	6+	40.0
Feb 12	147.3	0.0	6+	40.0
Feb 13	143.0	0.0	6+	40.0
Feb 14	134.6	0.0	6+	40.0
Feb 15	141.5	0.0	6+	40.0
Feb 16	169.1	0.0	6+	41.0
Feb 17	203.1	0.0	6+	41.0
Feb 18	165.8	0.0	6+	42.0
Feb 19	174.2	0.0	6+	42.0
Feb 20	161.5	0.0	6+	42.0
Feb 21	201.1	0.0	4.0	42.0
Feb 22	195.2	0.0	3.8	42.0
Feb 23	162.5	0.0	3.5	42.0
Feb 24	172.2	0.0	5.0	41.0
Feb 25	178.4	0.0	5.1	41.0
Feb 26	176.9	0.0	5.1	41.0
Feb 27	150.5	0.0	5.3	41.0
Feb 28	143.1	0.0	5.4	42.0
Feb 29	166.6	0.0	5.9	42.0
AVG.	153.5	0.0	6.0	40.8

MARCH				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Mar 1	179.0	0.0	5.8	42.0
Mar 2	185.4	0.0	6.0	42.0
Mar 3	157.6	0.0	5.5	42.0
Mar 4	187.9	0.0	6.0	42.0
Mar 5	196.1	0.0	5.5	42.0
Mar 6	182.2	0.0	5.2	42.0
Mar 7	168.7	0.0	5.8	42.0
Mar 8	190.5	0.0	5.9	42.0
Mar 9	212.0	0.0	5.5	43.0
Mar 10	215.7	7.2	5.6	43.0
Mar 11	225.9	0.0	5.6	43.0
Mar 12	203.0	0.0	5.0	43.0
Mar 13	174.2	0.0	4.6	43.0
Mar 14	189.4	0.1	5.0	43.0
Mar 15	217.0	0.0	5.0	43.0
Mar 16	194.7	2.6	4.8	43.0
Mar 17	193.4	0.0	4.8	43.0
Mar 18	192.9	0.1	5.0	43.0
Mar 19	186.6	0.0	4.6	43.0
Mar 20	172.4	0.0	5.0	43.0
Mar 21	182.1	0.0	5.4	43.0
Mar 22	179.8	0.0	5.0	44.0
Mar 23	187.0	2.8	5.5	44.0
Mar 24	192.9	0.0	5.5	44.0
Mar 25	190.1	0.0	5.1	44.0
Mar 26	190.3	0.0	4.9	45.0
Mar 27	192.9	0.0	4.4	46.0
Mar 28	189.9	0.0	4.4	45.0
Mar 29	186.8	0.0	5.0	46.0
Mar 30	181.6	0.0	5.0	46.0
Mar 31	210.8	6.9	5.1	46.0
AVG.	190.6	0.6	5.2	43.4

TABLE 70
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

APRIL 2016

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	SECCHI	DEG F
Apr 1	4			0			0	30	17			0	200.7	27.1	4.8	46.0
Apr 2	1			0			0	15	12			0	182.1	10.8	4.7	47.0
Apr 3	7			0			0	43	25			0	167.7	0.0	5.0	47.0
Apr 4	4			0			0	20	14			1	159.9	0.1	5.0	48.0
Apr 5	6			0			0	26	17			0	206.9	36.5	5.2	48.0
Apr 6	7			0			0	16	13			0	224.4	54.7	4.5	49.0
Apr 7	18			0			0	26	20			0	242.5	72.2	4.5	47.0
Apr 8	17			0			1	24	18			-1	239.5	63.6	3.0	47.0
Apr 9	25			0			0	30	19			0	213.1	38.0	4.5	50.0
Apr 10	15			0			0	24	17			0	236.0	94.7	5.5	50.0
Apr 11	36			0			0	35	31			0	238.3	95.6	4.9	50.0
Apr 12	39			0			0	25	21			1	249.9	119.8	5.5	51.0
Apr 13	82			0			0	29	18			0	265.3	128.9	4.8	51.0
Apr 14	80			0			0	26	17			0	315.2	155.5	4.9	51.0
Apr 15	75			0			0	19	13			0	320.7	145.8	4.5	51.0
Apr 16	60			0			0	4	2			1	324.0	148.8	4.3	51.0
Apr 17	87			1			0	8	6			0	319.5	144.4	4.2	51.0
Apr 18	96			0			0	15	9			0	316.6	159.0	4.5	51.0
Apr 19	91			1			0	4	5			0	305.1	154.3	4.5	52.0
Apr 20	203			0			0	14	8			0	296.3	137.5	5.2	52.0
Apr 21	136			0			0	10	4			0	292.6	119.7	5.8	52.0
Apr 22	214			0			0	9	4			0	350.6	176.8	6.0	52.0
Apr 23	229			0			0	10	8			0	342.6	170.1	5.5	52.0
Apr 24	225			4			0	20	9			0	341.5	169.8	5.1	52.0
Apr 25	187			0			0	12	6			0	342.4	169.6	5.1	52.0
Apr 26	412			16			0	8	6			0	318.6	152.3	5.1	53.0
Apr 27	927			10			0	-5	-5			0	305.8	131.7	5.1	53.0
Apr 28	885			6			0	-32	-34			0	313.9	139.8	5.0	53.0
Apr 29	831			15			0	3	4			0	305.2	131.2	5.4	53.0
Apr 30	545			9			0	3	4			0	280.3	112.5	5.0	53.0
TOTAL	5,544			62			1	471	308			2	273.9	108.7	4.9	50.5
AVG.	185			2			0	16	10			0	273.9	108.7	4.9	50.5

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 71

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

MCNARY PROJECT - FISH COUNTS

MAY 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL			SHAD	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TURBIDITY DEG F
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD						
May 1	604			17			0	2	3	0	0	269.5	108.3	5.5	54.0
May 2	568			13			0	4	3	0	0	265.1	106.3	5.7	54.0
May 3	1,149			34			0	2	2	0	0	256.8	103.0	6.0	55.0
May 4	3,293			113			0	3	2	0	2	261.7	104.7	6.0	55.0
May 5	5,419			168			0	-6	-6	0	0	264.7	114.2	6.0	55.0
May 6	6,159			143			0	-2	-1	0	0	281.3	134.3	5.3	55.0
May 7	7,592			332			0	3	3	0	0	282.4	121.5	5.5	56.0
May 8	5,833			312			0	1	0	0	0	293.1	131.4	5.5	56.0
May 9	3,847			279			0	-6	-6	0	0	284.7	118.5	5.4	56.0
May 10	2,720			178			0	2	1	0	0	298.7	125.6	5.5	56.0
May 11	3,312			281			0	2	0	0	-1	287.7	115.0	5.5	56.0
May 12	2,742			282			0	1	1	0	0	282.4	113.1	6+	56.0
May 13	2,679			303			0	-2	-1	0	2	284.0	113.8	6+	57.0
May 14	1,660			220			0	-6	-6	0	2	263.0	105.6	6+	58.0
May 15	1,416			206			0	1	1	7	1	260.3	104.4	6+	58.0
May 16	1,374			252			0	-8	-8	1	0	258.6	103.7	6+	58.0
May 17	2,158			409			0	0	-1	0	0	271.3	108.9	6+	58.0
May 18	2,283			465			0	1	1	4	0	244.4	97.9	6+	58.0
May 19	2,221			243			0	-6	-5	3	1	240.9	96.5	4.8	58.0
May 20	1,005			172			0	0	0	9	2	261.9	104.7	4.9	58.0
May 21	1,813			258			0	1	1	21	0	241.4	96.8	5.2	57.0
May 22	2,323			311			0	0	0	13	0	201.4	80.9	5.0	57.0
May 23	1,481			308			0	3	2	21	0	214.9	86.0	5.0	57.0
May 24	1,726			221			0	-1	-1	68	0	223.5	89.6	5.0	57.0
May 25	1,358			194			0	2	0	78	24	237.4	95.3	6.0	57.0
May 26	1,192			116			0	1	2	31	2	237.9	95.3	6+	58.0
May 27	577			102			0	4	0	42	1	211.2	84.9	6+	59.0
May 28	880			94			0	3	2	66	3	209.3	84.0	6+	59.0
May 29	975			108			2	3	2	21	5	209.8	84.4	6+	59.0
May 30	822			99			2	2	1	32	0	209.5	84.2	6+	59.0
May 31	1,039			169			6	0	0	51	0	223.7	89.7	6+	60.0
TOTAL	72,220			6,402			10	4	-8	468	44				
AVG.	2,330			207			0	0	0	15	1	252.7	103.3	5.7+	57.0
RUN YEAR		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD		SHAD	LAMPREY			
TOTALS TO DATE	SPRING	77,764	6,464				11	475	300		468	46			

Note: One Sturgeon counted on May 15.

TABLE 72

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL				SHAD	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK						
Jun 1	1,071			138			6	0	-1		286	3	199.3	79.9	6.0	61.0
Jun 2	1,314			111			16	2	2		130	1	210.7	84.3	6+	60.0
Jun 3	1,261			138			54	2	1		1,511	1	204.4	81.8	6+	60.0
Jun 4	787			95			93	4	3		4,111	2	216.1	86.6	6+	61.0
Jun 5	1,142			126			119	11	10		8,001	2	242.0	96.8	6+	61.0
Jun 6	1,065			114			270	4	2		21,972	3	233.5	93.5	5.5	63.0
Jun 7	1,050			83			339	0	1		15,365	2	233.9	93.5	6+	63.0
Jun 8	1,737			105			593	7	2		22,120	0	225.7	90.4	6+	63.0
Jun 9		1,646		97			757	12	11		24,038	-1	217.6	87.1	6+	63.0
Jun 10		1,386		89			638	15	12		26,236	0	213.4	85.7	6+	64.0
Jun 11		1,605		89			1,410	17	10		18,052	1	209.2	84.2	6+	63.0
Jun 12		2,098		138			1,415	19	15		26,488	0	193.2	77.7	6+	63.0
Jun 13		2,065		132			1,188	45	27		20,941	0	192.6	77.3	6+	63.0
Jun 14		1,834		180			2,085	19	8		20,235	0	200.4	80.3	6+	63.0
Jun 15		2,382		189			3,087	25	17		25,918	5	192.8	77.4	6+	63.0
Jun 16		2,353		184			4,576	41	27		17,895	1	196.2	98.3	6+	63.0
Jun 17		1,986		120			5,566	30	20		23,425	1	202.9	101.7	6+	62.0
Jun 18		1,321		60			3,931	20	12		23,677	4	201.1	100.9	6+	63.0
Jun 19		1,963		120			8,430	34	20		24,430	0	148.3	74.2	6+	62.0
Jun 20		1,939		122			5,595	26	18		26,737	3	192.2	96.3	6+	62.0
Jun 21		2,956		222			11,809	58	33		18,708	2	184.2	92.2	6+	63.0
Jun 22		1,850		121			8,953	56	39		24,540	1	201.7	101.1	6+	63.0
Jun 23		1,428		137			12,744	56	29		23,310	8	207.9	104.2	6+	64.0
Jun 24		2,273		141			20,526	101	55		28,093	6	179.9	90.2	6+	64.0
Jun 25		1,549		142			15,562	77	48		28,394	9	195.8	98.0	6+	64.0
Jun 26		2,291		192			15,869	106	50		36,048	5	204.3	102.3	6+	64.0
Jun 27		2,584		162			20,336	105	53		37,057	14	203.6	102.1	6+	64.0
Jun 28		2,441		135			18,821	141	83		51,583	10	197.6	99.1	6+	64.0
Jun 29		2,503		224			14,838	108	52		51,796	10	195.5	98.0	6+	64.0
Jun 30		1,729		123			11,033	218	123		43,209	21	188.2	94.3	6+	66.0
TOTAL	9,427	44,182		4,029			190,659	1,359	782		694,306	114				
AVG.	1,178	2,008		134			6,355	45	26		23,144	4	202.8	91.0	6+	62.9

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	87,191	7,374
SUMMER	44,182	3,119
TOTAL	131,373	10,493

	TOTAL SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
	190,670	1,834	1,082	694,774	160

TABLE 73

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

MCNARY PROJECT - FISH COUNTS

JULY 2016

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	SECCHI	DEG F
Jul 1		1,533		123			8,188	161	95		31,973	14	195.7	97.9	6+	66.0
Jul 2		1,716		142			7,577	182	102		33,608	28	176.9	88.6	6+	67.0
Jul 3		2,454		137			7,173	193	97		18,497	22	167.2	83.8	6+	67.0
Jul 4		2,636		162			6,488	274	137		16,833	11	177.7	88.9	6+	67.0
Jul 5		2,104		127			7,100	252	144		19,554	8	164.2	82.1	6+	67.0
Jul 6		1,951		124			5,989	295	163		18,935	6	180.5	90.2	6+	67.0
Jul 7		1,774		198			4,276	358	210		17,328	8	181.8	90.9	6+	67.0
Jul 8		1,304		101			3,817	278	140		16,588	2	183.3	91.9	6+	67.0
Jul 9		1,241		108			2,672	251	120		14,754	7	169.5	85.0	6+	67.0
Jul 10		1,361		78			2,245	335	138		9,091	18	136.4	68.4	6+	67.0
Jul 11		1,296		162			2,081	383	206		8,284	12	139.0	69.7	6+	66.0
Jul 12		1,830		128			1,638	280	133		7,737	20	150.4	75.3	6+	66.0
Jul 13		1,218		88			1,530	269	125		6,908	15	159.5	79.9	6+	66.0
Jul 14		1,015		83			1,042	325	144		8,547	16	160.3	80.3	6+	67.0
Jul 15		807		55			1,056	261	103		7,576	18	164.1	82.3	6+	68.0
Jul 16		1,063		89			1,050	268	141		6,252	32	167.5	83.9	6+	68.0
Jul 17		1,133		137			1,023	345	164		7,057	27	151.7	76.2	6+	68.0
Jul 18		1,016		136			984	265	134		12,805	25	172.0	86.1	6+	69.0
Jul 19		877		102			658	315	142		7,053	8	170.2	85.4	6+	68.0
Jul 20		927		97			647	271	112		4,551	21	151.3	76.0	6+	68.0
Jul 21		749		71			435	316	135		3,987	16	168.5	84.3	6+	68.0
Jul 22		642		72			360	295	126		2,485	18	137.9	69.2	6+	68.0
Jul 23		776		69			401	519	262		1,431	24	133.8	67.0	6+	68.0
Jul 24		706		73			277	307	146		2,464	33	143.2	71.9	6+	69.0
Jul 25		683		76			254	249	111		2,022	50	144.0	72.2	6+	69.0
Jul 26		978		83			279	248	84		2,826	19	150.3	75.4	6+	69.0
Jul 27		573		58			209	226	94		2,322	23	162.4	81.5	6+	69.0
Jul 28		606		45			184	301	125		2,438	12	164.1	82.4	6+	69.0
Jul 29		439		52			184	248	92		2,336	20	169.2	84.9	6+	70.0
Jul 30		505		58			147	249	109		2,356	33	157.2	78.9	6+	71.0
Jul 31		372		24			149	299	136		1,524	24	160.7	80.6	6+	70.0

TOTAL	36,285	3,058	70,113	8,818	4,170	300,122	590	161.6	81.0	6+	67.8
AVG.	1170	99	2,262	284	135	9,681	19				

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY
TOTALS TO DATE							
SPRING	87,191	7,374	260,783	10,652	5,252	994,896	750
SUMMER	80,467	6,177					
TOTAL	167,658	13,551					

Note: 1 sturgeon counted up on Jul 3

TABLE 74

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

MCNARY PROJECT - FISH COUNTS

AUGUST 2016

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
Aug 1		615		58	0	0	120	315	130		1,947	15	173.6	87.1	6+	71.0
Aug 2		672		55	0	0	133	447	171		1,178	30	141.5	70.9	6+	71.0
Aug 3		426		44	0	0	87	393	155		838	23	131.5	65.9	6+	70.0
Aug 4		390		38	0	0	42	329	135		671	28	150.7	75.5	6+	70.0
Aug 5		310		34	0	0	45	175	75		520	18	151.6	76.0	6+	70.0
Aug 6		205		26	0	0	53	138	69		374	22	137.0	68.8	6+	69.0
Aug 7		409		34	0	0	47	182	80		510	17	134.7	67.5	6+	70.0
Aug 8		400		35	0	0	39	173	72		411	30	135.1	67.7	6+	70.0
Aug 9			398	53	0	0	43	145	68		477	17	138.8	69.6	6+	70.0
Aug 10			458	34	0	0	49	123	61		296	24	142.3	71.3	6+	70.0
Aug 11			379	57	0	0	27	132	55		223	21	156.0	78.2	6+	69.0
Aug 12			582	29	0	0	38	164	83		283	31	153.9	77.1	6+	70.0
Aug 13			409	28	0	0	23	132	62		152	33	143.6	72.0	6+	70.0
Aug 14			493	34	0	0	27	138	54		95	26	127.9	64.0	6+	70.0
Aug 15			468	31	0	0	19	130	48		137	26	119.6	59.9	6+	70.0
Aug 16			519	36	0	0	12	165	52		98	16	128.0	64.1	6+	70.0
Aug 17			603	50	-1	0	19	197	79		98	40	127.5	63.9	6+	71.0
Aug 18			628	58	0	0	4	179	87		98	17	134.7	67.4	6+	71.0
Aug 19			942	75	44	14	8	224	86		109	33	155.0	77.5	6+	72.0
Aug 20			482	52	5	4	4	210	70		49	14	159.8	79.8	6+	72.0
Aug 21			1,240	171	6	6	12	298	96		46	21	121.5	60.5	6+	72.0
Aug 22			1,094	144	29	10	8	268	89		36	17	121.7	60.7	6+	72.0
Aug 23			1,161	149	6	1	2	323	114		54	20	127.4	63.7	6+	71.0
Aug 24			697	147	14	5	4	234	77		42	10	133.6	66.9	6+	71.0
Aug 25			530	98	5	2	0	211	90		34	17	118.5	59.3	6+	71.0
Aug 26			520	63	0	1	1	118	44		32	10	143.0	71.6	6+	71.0
Aug 27			1,227	251	2	0	1	146	51		11	5	120.2	60.1	6+	71.0
Aug 28			967	126	6	2	1	132	46		12	17	113.7	56.9	6+	70.0
Aug 29			1,273	186	-1	0	1	174	47		7	11	136.6	68.4	6+	71.0
Aug 30			1,820	153	4	0	-6	140	38		7	3	127.1	63.7	6+	71.0
Aug 31			1,923	278	4	1	1	190	64		14	8	114.8	57.7	6.0	71.0
TOTAL		3,427	18,813	2,627	123	46	864	6,325	2,448		8,859	620				
AVG.		428	818	85	4	1	28	204	79		286	20	136.2	68.2	6+	70.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	87,191	7,374
SUMMER	83,894	6,501
FALL	18,813	2,303
TOTAL	189,898	16,178

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD
123	46	261,647	16,977	7,700

SHAD	LAMPREY
1,003,755	1,370

TABLE 75

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL		unclipped	SHAD	LAMPREY	DISCH SPILL TURBIDITY				
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD			STEELHEAD	PINK	KCFS	KCFS	SECCHI
Sep 1			2,706	378	21	12	3	273	74		10	92.8	0.1	6+	70.0
Sep 2			1,917	337	7	6	1	299	71		6	100.8	0.0	6+	70.0
Sep 3			1,697	281	2	6	1	345	89		7	79.3	0.0	6+	70.0
Sep 4			3,249	414	4	2	0	522	156		11	89.3	0.0	6+	69.0
Sep 5			6,904	637	13	5	1	656	191		6	87.3	0.0	5.8	69.0
Sep 6			9,851	898	35	4	5	1,097	287		11	87.7	0.0	5.5	69.0
Sep 7			5,925	714	25	5	2	1,103	290		14	86.8	0.0	6.0	68.0
Sep 8			7,074	744	73	24	3	1,680	361		10	76.0	0.0	6+	68.0
Sep 9			8,618	729	199	55	4	1,741	355		6	73.1	0.0	6+	68.0
Sep 10			5,608	471	219	30	1	1,811	345		13	103.3	0.0	6+	67.0
Sep 11			13,913	1,032	434	47	1	2,669	535		12	78.3	0.0	6+	67.0
Sep 12			14,964	1,381	429	50	7	2,366	557		8	90.5	0.0	6+	67.0
Sep 13			9,736	680	468	44	0	2,228	480		8	81.1	0.0	6+	67.0
Sep 14			7,915	541	503	55	0	2,761	518		2	93.8	0.0	6+	67.0
Sep 15			6,645	432	553	60	0	3,073	630		6	93.3	0.0	6+	67.0
Sep 16			10,319	773	665	35	2	3,232	609		13	104.9	0.0	6+	66.0
Sep 17			6,354	519	369	38	0	2,178	484		7	79.7	0.0	6+	66.0
Sep 18			10,250	741	792	83	9	4,539	900		9	67.6	0.0	6+	65.0
Sep 19			11,208	954	555	69	2	3,242	640		10	104.7	0.0	6+	65.0
Sep 20			10,992	1,193	508	67	4	4,161	923		1	104.7	0.0	6+	65.0
Sep 21			4,649	574	276	17	1	2,486	555		8	99.8	0.0	6+	65.0
Sep 22			5,677	635	301	22	-1	2,401	449		2	81.6	0.0	6+	65.0
Sep 23			4,526	540	284	19	0	3,013	662		-1	79.7	0.0	6+	65.0
Sep 24			3,963	556	290	14	0	3,539	799		1	82.0	0.0	6+	65.0
Sep 25			3,268	420	155	13	0	2,482	568		3	92.7	0.0	6+	65.0
Sep 26			3,412	410	171	12	0	1,950	384		1	106.3	0.1	6+	64.0
Sep 27			4,804	567	185	7	0	2,607	596		5	111.3	0.0	6+	64.0
Sep 28			2,610	477	172	6	0	2,845	605		3	88.6	0.0	6+	64.0
Sep 29			2,629	418	140	8	0	2,691	617		9	92.1	0.0	6+	64.0
Sep 30			2,490	243	168	28	1	3,142	749		3	85.6	0.0	6+	65.0
TOTAL			193,873	18,689	8,016	843	47	67,132	14,479		204				
AVG.			6,462	623	267	28	2	2,238	483		7	89.8	0.0	6+	66.5

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	87,191	7,374
SUMMER	83,894	6,501
FALL	212,686	20,992
TOTAL	383,771	34,867

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD
8,139	889	261,694	84,109	22,179

SHAD	LAMPREY
1,003,755	1,574

TABLE 76

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

MCNARY PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	SHAD	LAMPREY	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT		JACK	STEELHEAD				STEELHEAD	KCFS	KCFS	SECCHI
Oct 1			2,117	259	155	9	0	2,913	762		3	83.2	0.0	6+	65.0
Oct 2			2,881	388	238	21	0	3,041	785		2	80.5	0.0	6+	65.0
Oct 3			2,293	339	168	17	0	3,052	696		1	90.7	0.0	6+	64.0
Oct 4			2,240	318	148	11	1	2,606	693		4	102.6	0.0	6+	64.0
Oct 5			1,623	382	92	8	0	2,288	552		14	99.6	0.0	6+	64.0
Oct 6			1,058	180	51	6	0	1,309	338		1	85.0	0.0	6+	64.0
Oct 7			853	166	54	8	1	1,195	309		0	97.5	0.0	6+	63.0
Oct 8			1,461	161	84	14	0	1,411	370		0	82.4	0.0	6+	63.0
Oct 9			1,168	159	85	10	0	1,306	374		1	85.4	0.0	6+	63.0
Oct 10			1,280	98	111	10	0	1,314	423		0	113.0	0.0	6+	63.0
Oct 11			816	122	130	12	0	1,346	443		2	105.1	0.0	6+	62.0
Oct 12			1,530	198	320	37	0	1,679	565		0	113.8	0.0	6+	62.0
Oct 13			786	119	194	13	0	1,608	554		-1	117.5	0.0	6+	62.0
Oct 14			755	117	130	3	0	1,079	331		1	112.5	0.0	6+	62.0
Oct 15			598	71	72	2	0	856	237		0	107.9	0.0	6+	61.0
Oct 16			879	87	126	6	0	802	282		0	105.1	0.0	6+	61.0
Oct 17			336	69	65	1	0	475	179		0	105.0	0.0	6+	60.0
Oct 18			617	83	105	8	0	1,069	396		0	107.9	0.0	6+	60.0
Oct 19			604	100	130	9	0	1,327	530		0	114.7	0.0	6+	60.0
Oct 20			514	74	57	2	0	806	317		1	106.8	0.0	6+	59.0
Oct 21			243	58	56	4	0	492	178		1	116.3	0.0	6+	59.0
Oct 22			195	35	37	1	0	501	203		0	110.9	0.0	6+	58.0
Oct 23			214	42	30	0	0	387	129		0	112.1	0.0	6+	58.0
Oct 24			180	36	28	1	0	298	81		0	120.1	0.0	6+	58.0
Oct 25			367	40	26	6	0	367	128		0	97.6	0.0	6+	58.0
Oct 26			266	31	12	2	0	250	104		0	118.9	6.7	6+	58.0
Oct 27			480	50	18	2	0	216	90		0	130.5	23.6	6+	58.0
Oct 28			148	18	21	0	0	159	50		1	131.4	0.0	6+	58.0
Oct 29			235	32	10	0	0	155	36		0	133.8	0.0	6+	58.0
Oct 30			188	18	3	2	0	156	33		6	126.9	0.0	6+	58.0
Oct 31			180	28	4	0	0	191	58		1	120.7	0.0	6+	58.0
TOTAL			27,105	3,878	2,760	225	2	34,654	10,226		38				
AVG.			874	125	89	7	0	1,118	330		1	107.6	1.0	6+	60.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	87,191	7,374
SUMMER	83,894	6,501
FALL	239,791	24,870
TOTAL	410,876	38,745

COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	SHAD	LAMPREY
10,899	1,114	261,696	118,763	32,405	0	1,003,755	1,612

Note: Live counts ended October 31.
Official Fall Chinook run ended October 31.

TABLE 77
DISCHARGE AND WATER QUALITY DATA
MCNARY PROJECT 2016

NOVEMBER					DECEMBER				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F	DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Nov 1	162.4	0.0	6+	57.0	Dec 1	139.9	0.0	6+	50.0
Nov 2	152.7	0.0	6+	57.0	Dec 2	139.7	0.0	6+	50.0
Nov 3	129.0	0.0	6+	57.0	Dec 3	122.6	0.0	6+	50.0
Nov 4	137.0	0.0	6+	57.0	Dec 4	116.5	0.0	6+	49.0
Nov 5	132.1	0.0	6+	57.0	Dec 5	132.0	0.0	6+	49.0
Nov 6	133.3	0.0	6+	57.0	Dec 6	150.2	0.0	6+	49.0
Nov 7	141.3	0.0	6+	57.0	Dec 7	153.9	0.0	6+	48.0
Nov 8	147.8	0.0	6+	57.0	Dec 8	160.8	0.0	6+	48.0
Nov 9	131.6	0.0	6+	57.0	Dec 9	149.6	0.0	6+	46.0
Nov 10	147.0	0.0	6+	57.0	Dec 10	146.7	0.0	6+	46.0
Nov 11	147.1	0.0	6+	57.0	Dec 11	133.5	0.0	6+	45.0
Nov 12	123.3	0.0	6+	57.0	Dec 12	124.6	0.0	6+	45.0
Nov 13	112.6	0.0	6+	57.0	Dec 13	146.7	0.0	6+	44.0
Nov 14	146.9	0.0	6+	56.0	Dec 14	146.9	0.0	6+	44.0
Nov 15	124.9	0.0	6+	56.0	Dec 15	142.9	0.0	6+	44.0
Nov 16	138.1	0.0	6+	56.0	Dec 16	145.3	0.0	6+	43.0
Nov 17	132.1	0.0	6+	56.0	Dec 17	153.9	0.0	6+	42.0
Nov 18	139.0	0.0	6+	55.0	Dec 18	158.6	0.0	6+	41.0
Nov 19	141.8	0.0	6+	55.0	Dec 19	148.2	0.0	6+	41.0
Nov 20	128.9	0.0	6+	54.0	Dec 20	158.4	0.0	6+	41.0
Nov 21	127.6	0.0	6+	53.0	Dec 21	157.2	0.0	6+	41.0
Nov 22	152.2	0.0	6+	53.0	Dec 22	157.0	0.0	6+	41.0
Nov 23	145.4	0.0	6+	53.0	Dec 23	163.7	0.0	6+	41.0
Nov 24	129.9	0.0	6+	52.0	Dec 24	143.3	0.0	6+	41.0
Nov 25	123.8	0.0	6+	52.0	Dec 25	145.1	0.0	6+	42.0
Nov 26	132.6	0.0	6+	52.0	Dec 26	157.8	0.0	6+	42.0
Nov 27	138.4	0.0	6+	51.0	Dec 27	165.5	0.0	6+	42.0
Nov 28	128.6	0.0	6+	51.0	Dec 28	132.4	0.0	6+	42.0
Nov 29	133.8	0.0	6+	51.0	Dec 29	151.2	0.0	6+	42.0
Nov 30	141.0	0.0	6+	51.0	Dec 30	153.5	0.0	6+	42.0
					Dec 31	136.5	0.0	6+	42.0
AVG.	136.7	0.0	6+	54.9	AVG.	146.3	0.0	6+	44.3

TABLE 78

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped	PINK	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		158		83			31	0	0		2
Jun 16		211		27			204	0	0		0
Jun 17		29		18			86	0	0		0
Jun 18		39		11			245	1	1		0
Jun 19		23		15			470	0	0		2
Jun 20		86		11			402	0	0		2
Jun 21		59		19			744	0	0		1
Jun 22		65		8			486	0	0		1
Jun 23		94		17			1,698	0	0		1
Jun 24		45		5			1,366	0	0		2
Jun 25		45		4			1,167	1	0		3
Jun 26		50		5			1,445	0	0		2
Jun 27		61		1			1,268	1	1		8
Jun 28		58		8			1,900	1	1		9
Jun 29		66		10			1,626	2	1		8
Jun 30		55		16			1,743	4	2		37
TOTAL		1,144		258			14,881	10	6		78

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

TABLE 79

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

MCNARY PROJECT - NIGHT FISH COUNTS

JULY 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Jul 1		58		11			1,353	3	1		15
Jul 2		116		9			1,111	0	0		17
Jul 3		48		6			686	7	4		15
Jul 4		32		0			612	5	3		10
Jul 5		30		1			565	5	3		11
Jul 6		40		9			602	9	2		11
Jul 7		19		5			236	3	3		5
Jul 8		20		1			201	3	2		4
Jul 9		21		0			247	0	0		16
Jul 10		21		1			218	1	0		11
Jul 11		22		4			187	2	1		19
Jul 12		19		1			134	3	3		20
Jul 13		6		0			132	18	10		23
Jul 14		16		0			98	11	6		11
Jul 15		17		0			112	4	1		21
Jul 16		17		1			116	12	8		32
Jul 17		11		0			155	2	2		33
Jul 18		14		0			70	2	2		15
Jul 19		18		5			73	4	4		44
Jul 20		20		2			80	5	3		19
Jul 21		11		1			35	9	3		15
Jul 22		16		2			62	7	3		49
Jul 23		22		0			51	8	5		44
Jul 24		15		0			32	5	2		63
Jul 25		25		0			24	6	2		27
Jul 26		20		0			30	7	3		46
Jul 27		15		0			20	11	4		57
Jul 28		13		1			11	12	6		52
Jul 29		14		1			4	8	4		33
Jul 30		14		1			15	13	10		43
Jul 31		11		1			17	21	10		64
TOTAL		741		63			7,289	206	110		845

AVG.

24

2

235

7

4

27

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

TABLE 80

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

MCNARY PROJECT - NIGHT FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	TOTAL		PINK	LAMPREY
	SPRING	SUMMER	JACK	ADULT	JACK		STEELHEAD	unclipped STEELHEAD		
Aug 1		10	0	0	0	16	15	5		37
Aug 2		20	0	0	0	10	22	9		20
Aug 3		15	0	0	0	5	6	1		53
Aug 4		18	0	0	0	6	11	4		42
Aug 5		1	1	0	0	1	8	3		33
Aug 6		14	0	0	0	7	10	6		55
Aug 7		14	0	0	0	9	4	0		54
Aug 8		5	0	0	0	12	2	1		20
Aug 9			9	0	0	7	2	0		43
Aug 10			14	0	0	2	3	1		64
Aug 11			5	0	0	2	6	0		59
Aug 12			10	1	0	5	5	1		78
Aug 13			9	0	0	0	4	1		76
Aug 14			12	2	0	2	5	2		83
Aug 15			10	0	0	0	12	6		55
Aug 16			27	3	0	0	6	3		94
Aug 17			27	1	0	0	12	2		88
Aug 18			14	1	2	3	6	4		73
Aug 19			11	0	0	0	14	4		33
Aug 20			27	6	0	0	21	7		37
Aug 21			14	0	0	0	9	3		86
Aug 22			11	1	0	0	9	5		48
Aug 23			10	1	0	0	13	4		25
Aug 24			14	1	0	0	16	4		24
Aug 25			9	2	0	0	7	1		20
Aug 26			8	4	0	0	9	5		26
Aug 27			18	2	0	0	3	2		27
Aug 28			24	2	0	0	7	4		37
Aug 29			14	2	0	0	1	1		15
Aug 30			26	8	0	0	3	0		15
Aug 31			14	2	0	0	9	3		15
TOTAL		97	337	40	2	3	84	260	92	1,435
AVG.		12	15	1	0	0	3	8	3	46

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

SEPTEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		
Sep 1			37	1	0	0		15	1		9
Sep 2			13	1	0	0		15	3		16
Sep 3			47	2	0	0		6	3		18
Sep 4			20	0	0	0		25	10		7
Sep 5			71	8	0	0		61	13		9
Sep 6			58	3	0	0		65	19		11
Sep 7			50	7	0	0		90	22		4
Sep 8			39	1	0	0		121	23		15
Sep 9			10	2	0	0		114	23		17
Sep 10			39	4	0	0		95	32		12
Sep 11			72	2	0	0		101	24		13
Sep 12			52	3	2	0		100	22		7
Sep 13			34	10	0	0		141	31		8
Sep 14			17	12	0	0		123	27		11
Sep 15			30	8	0	0		160	29		15
Sep 16			34	4	0	0		108	20		16
Sep 17			18	5	0	0		201	38		2
Sep 18			24	4	0	0		183	38		3
Sep 19			32	5	0	0		163	29		6
Sep 20			32	10	0	0		162	34		5
Sep 21			20	5	0	0		76	13		3
Sep 22			11	5	0	0		78	23		2
Sep 23			10	11	0	0		173	31		1
Sep 24			7	5	0	0		125	17		2
Sep 25			11	2	0	0		78	13		3
Sep 26			23	3	0	0		121	24		3
Sep 27			15	5	0	0		127	15		5
Sep 28			15	1	0	0		102	24		3
Sep 29			24	0	0	0		121	29		2
Sep 30			10	2	0	0		137	35		3
TOTAL			875	131	2	0		3,187	665		231
AVG.			29	4	0	0		106	22		8

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

TABLE 82

YEARLY TOTALS OF SALMONIDS COUNTED OVER McNARY DAM
1954 - 2016

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
Totals	14,723,727	8,619,698	5,291,887	840,318	29,475,630
10-Year Average	477,712	216,663	226,532	31,848	952,755

*Jacks included

TABLE 83

**MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM: 1954 - 2016**

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 83

(Continued)

**MONTHLY COUNT OF CHINOOK SALMON
McNARY DAM: 1954 - 2016**

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
Total	7	-1	995	1,064,407	2,652,119	1,739,606	1,558,119	879,008	5,545,950	1,268,004	14,749	769	14,723,732	4,067,912	3,174,670	7,500,176
10-Year Average				14,235	85,499	55,065	34,712	22,464	213,059	52,376			477,712	113,464	82,459	284,353

*Jacks included

TABLE 84
MONTHLY COUNT OF SOCKEYE SALMON
McNARY DAM: 1954 - 2016

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 84

(Continued)

**MONTHLY COUNT OF SOCKEYE SALMON
McNARY DAM; 1954 - 2016**

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					10,603	
1995					1	3,001	5,259	58		1			8,320	
1996						11,594	16,927	64					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					0	27,341	36,009	182	8				63,540	
2006					0	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					0	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	
Total					2	273	1,810,786	3,372,165	94,161	10,547	3,947	5	1	5,291,887
10-Year Average					8	113,416	112,153	828	113					226,532

TABLE 85

**MONTHLY COUNT OF COHO SALMON
McNARY DAM: 1954 - 2016**

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 85

(Continued)

**MONTHLY COUNT OF COHO SALMON
McNARY DAM; 1954 - 2016**

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
TOTAL	1	0	1	14	68	515	23,159	591,688	218,428	6,356	88		840,318
10-Year Average								304	20,600	10,858			31,848

*Jacks included

TABLE 86

MONTHLY COUNT OF STEELHEAD
McNARY DAM: 1954-2016

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

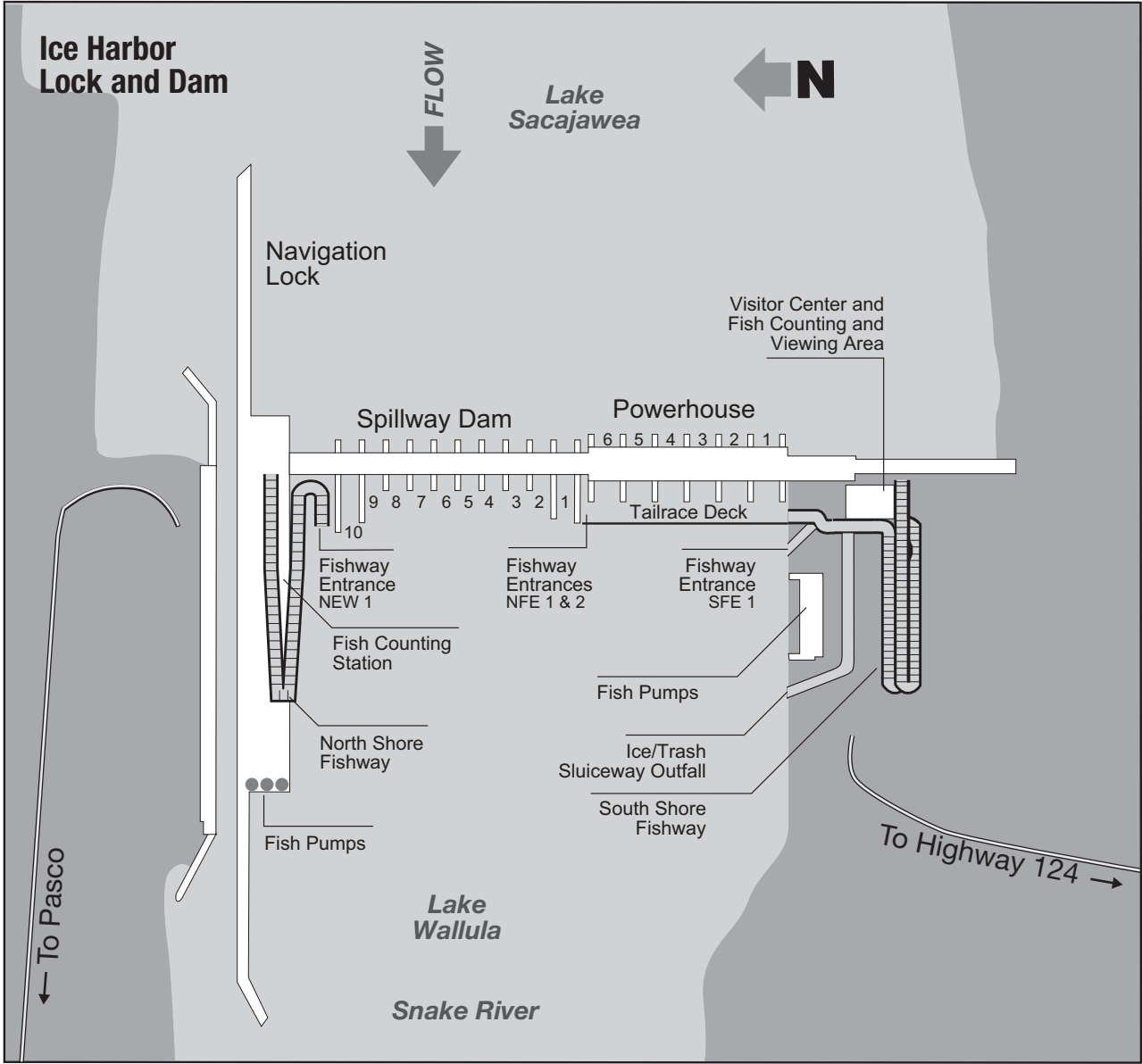
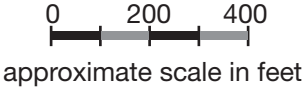
TABLE 86

(Continued)

**MONTHLY COUNT OF STEELHEAD
McNARY DAM: 1954 - 2016**

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
Total	1,195	1,013	36,732	119,394	42,442	86,485	768,094	1,459,994	4,109,966	1,902,780	74,211	17,392	8,619,698
10-Year Avg.				1,433	255	1,832	19,831	38,776	105,740	46,473			216,663

Plate 6 Ice Harbor Lock and Dam



ICE HARBOR DAM

FISH COUNTING SCHEDULE

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

FISH LADDER OPERATING SCHEDULE

North Ladder

1 January – 7 February	Ladder in service
8 February – 29 February	Ladder dewatered for annual maintenance
1 March – 31 December	Ladder in service

South Ladder

1 January – 3 January	Ladder in service
4 January – 4 February	Ladder dewatered for annual maintenance
5 February – 31 December	Ladder in service

FISHWAY ACTIVITIES

Water temperatures were recorded hourly from both fish ladder exit pools, the downstream end of both upper diffuser pools, the south fish ladder junction pool, the first bend upstream of the north fish ladder collection channel, and the downstream end of the juvenile fish collection channel. Hourly readings were taken from 1 June to 5 October.

The RSW operated from 3 April to 29 July. The RSW was closed before the end of the spill season (August 31) due to low river flows. The RSW was closed very briefly on May 17 to conduct emergency maintenance activities.

The Juvenile Fish Facility was operated for juvenile fish bypass and adult fallbacks from 24 March to 21 December. Juvenile fish were sampled from 4 April – 14 July, twice per week.

Researchers collected tissue samples from juvenile salmonids obtained from the smolt monitoring sample to study the relationship of physiological condition and the incidence of delayed mortality.

From May to early July, researchers released acoustic-tagged dead juvenile salmonids through the RSW for an assessment of whether dead tagged fish are falsely recorded as live fish downstream at the detection station.

TABLE 87

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER ICE HARBOR DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				2,708	60,972	19,249	3,930	7,881	38,408	4,662			137,810
STEELHEAD				1,254	112	547	4,699	4,033	49,702	34,126			94,473
SOCKEYE						276	610	12	0	0			898
COHO*								6	1,303	832			2,141
PINK													0
TOTAL				3,962	61,084	20,072	9,239	11,932	89,413	39,620			235,322
SHAD					37	200,314	63,884	592					264,827
LAMPREY				1	2	32	507	251	74	8			875
STURGEON													0
BULL TROUT													0

*Jacks included

TABLE 88

DISCHARGE AND WATER QUALITY DATA

ICE HARBOR PROJECT 2016

JANUARY

DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Jan 1	21.3	0.0	10.5	41.0
Jan 2	24.0	0.0	10.2	41.0
Jan 3	25.8	0.0	10.2	39.0
Jan 4	22.1	0.0	10.2	39.0
Jan 5	22.1	0.0	10.2	39.0
Jan 6	27.8	0.0	10.2	39.0
Jan 7	26.6	0.0	10.4	39.0
Jan 8	25.9	0.0	10.4	38.0
Jan 9	23.8	0.0	10.4	38.0
Jan 10	25.6	0.0	10.4	38.0
Jan 11	27.5	0.0	10.4	38.0
Jan 12	22.8	0.0	10.2	38.0
Jan 13	19.0	0.0	10.2	38.0
Jan 14	25.9	0.0	10.4	38.0
Jan 15	28.1	0.0	10.4	37.0
Jan 16	25.8	0.0	10.4	37.0
Jan 17	23.2	0.0	9.6	37.0
Jan 18	27.5	0.0	9.6	38.0
Jan 19	25.5	0.0	9.6	38.0
Jan 20	28.5	0.0	9.6	38.0
Jan 21	37.4	0.0	9.8	38.0
Jan 22	27.0	0.0	9.8	38.0
Jan 23	30.8	0.0	9.8	39.0
Jan 24	36.9	0.0	9.8	39.0
Jan 25	38.6	0.0	10.2	39.0
Jan 26	34.3	0.0	10.2	39.0
Jan 27	33.3	0.0	10.4	39.0
Jan 28	33.5	0.0	10.4	39.0
Jan 29	34.2	0.0	10.4	39.0
Jan 30	36.7	0.0	10.4	39.0
Jan 31	39.0	0.0	10.4	39.0

AVG. 28.4 0.0 10.2 38.5

FEBRUARY

DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Feb 1	35.2	0.0	10.4	39.0
Feb 2	31.4	0.0	10.6	39.0
Feb 3	30.1	0.0	10.6	39.0
Feb 4	18.7	0.0	10.6	39.0
Feb 5	29.0	0.0	10.6	39.0
Feb 6	20.0	0.0	10.6	40.0
Feb 7	26.0	0.0	10.6	40.0
Feb 8	25.1	0.0	10.6	40.0
Feb 9	22.1	0.0	10.4	40.0
Feb 10	21.9	0.0	10.4	40.0
Feb 11	26.9	0.0	10.5	40.0
Feb 12	22.0	0.0	10.5	40.0
Feb 13	31.9	0.0	6.5	40.0
Feb 14	24.8	0.0	6.5	40.0
Feb 15	35.7	0.0	6.5	40.0
Feb 16	59.7	0.0	6.5	41.0
Feb 17	58.7	0.0	6.8	41.0
Feb 18	58.3	0.0	6.8	41.0
Feb 19	57.1	0.0	6.8	41.0
Feb 20	62.1	0.0	6.8	42.0
Feb 21	51.0	0.0	6.8	42.0
Feb 22	51.5	0.0	6.8	42.0
Feb 23	50.1	0.5	7.1	42.0
Feb 24	41.4	0.0	7.1	42.0
Feb 25	40.3	0.0	7.1	42.0
Feb 26	34.8	0.0	7.1	42.0
Feb 27	40.8	0.0	7.1	42.0
Feb 28	43.5	0.0	7.1	42.0
Feb 29	42.3	0.0	7.1	42.0

AVG. 37.7 0.0 8.4 40.7

MARCH

DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F
Mar 1	40.5	0.0	6.4	42.0
Mar 2	37.8	0.0	6.2	43.0
Mar 3	33.8	0.0	6.2	43.0
Mar 4	40.1	0.1	6.0	43.0
Mar 5	49.0	0.0	6.0	43.0
Mar 6	51.7	0.0	6.0	44.0
Mar 7	51.6	0.0	5.8	44.0
Mar 8	63.9	0.0	6.0	44.0
Mar 9	59.5	0.0	6.0	44.0
Mar 10	57.1	3.6	6.0	44.0
Mar 11	64.0	0.0	6.0	44.0
Mar 12	59.5	0.0	6.0	44.0
Mar 13	53.2	0.0	6.0	44.0
Mar 14	61.9	0.0	6.0	44.0
Mar 15	65.0	0.0	6.0	44.0
Mar 16	57.2	0.0	6.0	44.0
Mar 17	58.6	0.0	6.4	44.0
Mar 18	58.1	0.0	6.4	44.0
Mar 19	57.9	0.0	6.4	45.0
Mar 20	58.0	0.0	6.4	45.0
Mar 21	58.8	0.0	6.4	45.0
Mar 22	60.4	0.0	6.2	45.0
Mar 23	68.3	2.9	6.2	45.0
Mar 24	75.1	2.2	5.8	45.0
Mar 25	72.5	0.0	5.8	45.0
Mar 26	70.0	0.0	5.8	45.0
Mar 27	69.7	0.0	5.2	46.0
Mar 28	60.3	0.0	5.2	46.0
Mar 29	63.3	0.0	5.2	46.0
Mar 30	60.6	0.0	5.0	46.0
Mar 31	60.7	0.0	5.0	46.0

AVG. 58.0 0.3 5.9 44.4

TABLE 89

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

ICE HARBOR PROJECT - FISH COUNTS

APRIL 2016

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	1			0				37	20			0		59.1	0.0	5.0	46.0
Apr 2	0			0				39	24			0		64.7	0.0	5.0	46.0
Apr 3	4			0				65	45			0		66.8	49.8	5.0	46.0
Apr 4	2			0				88	49			0		66.1	48.5	5.0	48.0
Apr 5	7			1				76	41			0		70.7	55.1	5.2	48.0
Apr 6	1			6				67	48			0		66.8	50.1	5.2	48.0
Apr 7	8			0				57	38			0		71.8	51.5	5.2	48.0
Apr 8	2			0				80	51			0		67.9	50.7	5.2	48.0
Apr 9	6			0				61	26			0		71.8	52.7	4.2	49.0
Apr 10	12			0				64	26			0		86.7	57.8	4.7	50.0
Apr 11	8			0				83	34			0		89.8	55.9	4.7	50.0
Apr 12	26			0				41	31			0		96.2	63.0	4.7	50.0
Apr 13	15			0				38	24			0		99.8	66.3	4.7	50.0
Apr 14	21			1				33	30			0		103.9	66.2	4.7	52.0
Apr 15	30			0				48	20			0		107.5	67.4	4.7	52.0
Apr 16	28			0				42	19			0		102.0	65.0	4.7	52.0
Apr 17	30			0				42	25			0		96.6	63.2	4.7	52.0
Apr 18	52			0				77	29			1		90.8	63.5	4.7	52.0
Apr 19	89			0				27	12			0		94.1	53.9	6.1	53.0
Apr 20	53			0				23	9			0		93.9	45.6	6.1	53.0
Apr 21	62			0				22	10			0		99.0	53.6	6.2	53.0
Apr 22	121			0				13	8			0		105.8	66.8	6.2	53.0
Apr 23	69			0				19	15			0		115.4	86.3	6.2	53.0
Apr 24	138			0				5	2			0		132.4	80.0	6.2	53.0
Apr 25	150			0				22	8			0		124.0	82.9	6.2	53.0
Apr 26	177			0				41	9			0		110.4	75.9	6.2	53.0
Apr 27	199			11				7	-9			0		105.6	69.1	6.2	53.0
Apr 28	327			7				16	4			0		104.1	66.6	6.2	53.0
Apr 29	569			8				10	9			0		97.9	53.0	6.4	53.0
Apr 30	467			0				11	6			0		91.6	50.4	6.4	53.0
TOTAL	2,674			34				1,254	663			1					
AVG.	89			1				42	22			0		91.8	57.0	5.4	50.8

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 90

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

ICE HARBOR PROJECT - FISH COUNTS

MAY 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		PINK	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	STEELHEAD	unclipped STEELHEAD							KCFS	KCFS
May 1	365			7			3	2		0	0		83.8	57.1	6.4	54.0
May 2	509			12			11	1		0	0		87.7	57.4	6.0	54.0
May 3	408			6			3	1		0	0		85.2	59.9	6.0	54.0
May 4	960			9			10	8		0	0		83.8	38.4	6.0	54.0
May 5	2,462			46			10	3		0	0		92.3	37.3	5.3	54.0
May 6	3,582			55			12	10		0	0		100.2	55.5	5.3	54.0
May 7	4,456			69			7	5		0	0		108.6	71.3	5.6	54.0
May 8	6,763			200			6	4		0	0		119.3	69.1	5.6	54.0
May 9	4,925			251			2	0		0	0		120.5	65.2	6.1	54.0
May 10	3,327			194			1	1		0	0		118.2	62.8	6.1	55.0
May 11	2,154			144			5	1		0	0		94.6	40.2	6.1	56.0
May 12	3,099			202			-1	-1		0	0		93.1	49.8	5.8	56.0
May 13	2,079			169			4	1		0	0		85.0	58.3	5.8	56.0
May 14	2,061			189			4	1		0	0		89.8	44.1	6.7	57.0
May 15	1,188			203			-1	-1		0	0		96.3	41.0	6.7	57.0
May 16	1,029			175			2	0		0	0		102.6	58.6	6.7	57.0
May 17	1,229			178			0	0		0	0		97.8	68.0	6.7	57.0
May 18	1,279			225			-1	-1		1	0		86.2	58.1	6.7	57.0
May 19	1,559			346			9	5		1	0		91.6	62.7	6.4	56.0
May 20	1,201			146			5	1		0	0		106.1	59.9	6.4	56.0
May 21	1,435			175			8	0		0	0		92.8	37.9	6.4	56.0
May 22	1,678			161			3	0		0	0		89.8	52.9	6.4	56.0
May 23	1,991			196			1	1		0	1		83.3	56.7	6.4	56.0
May 24	1,436			183			0	0		1	0		81.7	37.9	---	---
May 25	1,471			149			1	0		0	1		78.2	24.9	6.4	56.0
May 26	1,033			91			1	0		0	0		74.3	22.2	7.0	56.0
May 27	924			100			4	2		4	0		65.9	19.7	7.0	57.0
May 28	361			60			0	-1		8	0		69.8	43.6	7.0	57.0
May 29	512			67			2	0		17	0		69.7	54.2	7.0	57.0
May 30	733			72			0	0		1	0		64.7	51.9	7.0	57.0
May 31	617			66			1	1		4	0		65.4	49.6	7.3	57.0
TOTAL	56,826			4,146			112	44		37	2					
AVG.	1833			134			4	1					89.6	50.5	6.3	55.7
RUN YEAR		CHINOOK	CHINOOK					unclipped								
TOTALS TO DATE		ADULT	JACK				STEELHEAD	STEELHEAD		SHAD	LAMPREY					
SPRING		59,500	4,180				1,366	707		37	3					

TABLE 91

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL unclipped			PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL					STEELHEAD	STEELHEAD	STEELHEAD							SECCHI	DEG F
Jun 1	846			118			0	1	1			2	0		68.2	29.2	7.3	57.0
Jun 2	875			70			1	1	0			13	0		64.3	19.2	7.4	57.0
Jun 3	939			82			0	1	0			89	-1		62.8	18.9	5.5	57.0
Jun 4	833			105			0	-1	0			93	-1		65.0	19.5	5.9	57.0
Jun 5	518			43			0	6	6			785	0		69.2	20.7	6.0	58.0
Jun 6	703			88			0	1	1			1,007	5		69.3	20.7	5.6	59.0
Jun 7	398			52			0	5	4			4,472	-2		74.4	47.1	5.6	60.0
Jun 8	515			46			0	1	0			1,715	2		75.2	54.0	5.6	60.0
Jun 9	781			114			0	4	0			5,797	1		76.5	54.8	5.6	62.0
Jun 10	1,039			85			6	20	10			7,333	0		71.7	50.3	5.6	62.0
Jun 11	537			46			0	18	7			9,116	0		61.5	48.7	5.6	62.0
Jun 12		619		58			5	14	12			6,545	1		52.8	40.9	5.6	62.0
Jun 13		817		57			6	15	14			7,403	1		53.0	20.3	6.6	62.0
Jun 14		1,004		72			6	10	6			12,245	0		51.6	15.5	6.6	62.0
Jun 15		625		63			4	11	6			3,076	-1		57.8	36.4	6.0	62.0
Jun 16		834		69			2	18	10			1,691	0		49.9	37.2	6.0	64.0
Jun 17		593		65			6	17	14			11,517	0		50.8	21.6	6.0	64.0
Jun 18		779		80			7	3	1			10,207	0		48.3	14.3	6.2	64.0
Jun 19		387		47			7	10	10			4,369	0		50.3	35.3	6.2	64.0
Jun 20		565		70			4	17	14			8,553	0		42.5	31.5	6.3	64.0
Jun 21		282		40			14	18	6			12,462	0		45.7	17.3	6.3	64.0
Jun 22		372		40			11	22	6			14,343	3		41.6	12.4	6.4	65.0
Jun 23		325		27			9	36	24			4,847	1		44.1	29.9	6.4	65.0
Jun 24		427		83			18	32	20			3,016	1		38.4	27.4	6.4	65.0
Jun 25		366		77			21	51	30			17,762	2		34.9	13.8	6.4	65.0
Jun 26		199		35			19	35	23			12,088	3		33.4	10.0	7.4	65.0
Jun 27		227		33			29	58	37			6,242	0		36.1	22.1	7.4	65.0
Jun 28		269		25			25	32	18			7,125	6		45.9	34.7	7.4	65.0
Jun 29		342		41			36	37	18			14,162	2		39.4	14.3	7.4	65.0
Jun 30		345		57			40	54	36			12,239	9		39.3	11.8	8.3	66.0
TOTAL	7,984	9,377		1,888			276	547	334			200,314	32					
AVG.	726	494		63			9	18	11			6,677	1		53.8	27.7	6.4	62.3

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	67,484	5,029
SUMMER	9,377	1,039
TOTAL	76,861	6,068

unclipped				
SOCKEYE	STEELHEAD	STEELHEAD	SHAD	LAMPREY
276	1,913	1,041	200,351	35

TABLE 92

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

ICE HARBOR PROJECT - FISH COUNTS

JULY 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			PINK	SHAD	LAMPREY	STURGEON	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped							KCFS	KCFS
Jul 1		182		14			45	51	20		3,508	12		39.6	25.7	8.3	66.0
Jul 2		155		17			63	67	23		5,621	7		43.4	33.0	6.4	66.0
Jul 3		206		31			62	149	68		12,964	11		39.3	15.5	7.3	66.0
Jul 4		259		23			61	131	51		9,931	54		40.9	12.2	7.0	66.0
Jul 5		302		46			52	165	79		2,736	30		29.0	16.2	7.0	66.0
Jul 6		221		22			48	160	66		2,766	12		33.3	22.7	7.0	66.0
Jul 7		186		17			54	163	79		5,455	27		34.7	12.5	7.0	66.0
Jul 8		197		19			40	164	67		6,131	8		27.8	8.9	7.1	66.0
Jul 9		113		15			31	153	75		1,345	8		31.8	18.5	7.0	67.0
Jul 10		109		9			15	134	70		1,094	10		29.4	18.4	7.0	67.0
Jul 11		161		14			24	171	73		2,759	4		31.7	12.8	7.0	67.0
Jul 12		131		7			21	121	53		2,584	6		34.6	10.4	7.0	67.0
Jul 13		82		8			18	163	77		620	5		36.3	22.9	7.0	68.0
Jul 14		59		9			5	185	75		838	1		35.2	24.6	9.0	68.0
Jul 15		90		12			15	197	80		645	18		36.6	26.2	9.0	68.0
Jul 16		61		18			6	153	70		1,339	22		31.8	21.1	9.0	68.0
Jul 17		67		12			5	147	55		462	21		27.1	16.2	9.0	68.0
Jul 18		72		11			6	139	61		670	32		33.0	22.1	9.0	68.0
Jul 19		76		8			7	187	81		389	13		34.5	23.5	9.0	69.0
Jul 20		66		9			4	123	45		205	8		31.4	20.1	9.0	69.0
Jul 21		72		6			4	148	42		162	19		32.2	21.2	9.0	69.0
Jul 22		93		6			6	132	48		238	15		32.6	21.3	9.0	70.0
Jul 23		52		4			2	140	54		466	23		29.7	18.7	9.0	70.0
Jul 24		34		3			2	115	42		300	7		28.8	18.2	9.0	70.0
Jul 25		64		3			5	153	52		36	11		31.7	21.3	8.8	70.0
Jul 26		58		11			4	192	88		92	23		32.0	21.3	8.8	70.0
Jul 27		79		6			1	157	61		66	39		31.6	20.6	8.8	70.0
Jul 28		41		4			2	131	40		107	10		28.9	18.2	8.8	70.0
Jul 29		37		5			1	144	45		77	2		28.8	17.8	8.0	70.0
Jul 30		144		12			0	295	83		190	25		28.7	17.6	8.0	70.0
Jul 31		69		11			1	169	75		88	24		29.5	18.6	11.4	70.0

TOTAL	3,538	392	610	4,699	1,898	63,884	507	32.8	19.3	8.2	68.1
AVG.	114	13	20	152	61	2,061	16				

RUN YEAR	CHINOOK	CHINOOK
TOTALS TO DATE	ADULT	JACK
SPRING	67,484	5,029
SUMMER	12,915	1,431
TOTAL	80,399	6,460

		unclipped
SOCKEYE	STEELHEAD	STEELHEAD
886	6,612	2,939

SHAD	LAMPREY
264,235	542

TABLE 93

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL			unclipped				DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Aug 1		71		5	0	0	1	146	48		76	10		27.3	16.4	11.4	70.0
Aug 2		116		9	0	0	0	200	75		131	13		26.8	15.9	8.5	70.0
Aug 3		112		12	0	0	3	217	91		36	4		27.9	17.1	8.5	70.0
Aug 4		73		2	0	0	1	177	44		36	6		26.6	15.8	8.6	71.0
Aug 5		71		10	0	0	1	116	41		40	9		27.5	16.6	8.7	71.0
Aug 6		83		11	0	0	1	158	62		26	5		28.7	17.7	8.7	71.0
Aug 7		87		13	0	0	1	163	61		34	6		26.5	15.7	8.9	71.0
Aug 8		103		10	0	0	0	171	60		39	3		27.6	16.7	9.1	71.0
Aug 9		114		12	0	0	0	156	59		18	9		26.6	15.7	9.1	71.0
Aug 10		113		10	0	0	0	99	28		22	3		25.1	14.3	9.1	71.0
Aug 11		122		13	0	0	1	54	12		25	39		27.1	16.1	9.1	71.0
Aug 12			110	18	0	0	3	76	26		4	8		26.1	15.1	9.1	71.0
Aug 13			115	19	0	0	0	87	27		2	5		26.1	15.1	9.1	71.0
Aug 14			130	15	0	0	0	65	23		16	10		23.3	12.5	9.1	71.0
Aug 15			204	20	0	0	0	69	30		15	17		21.3	10.5	9.2	71.0
Aug 16			149	21	0	0	0	93	22		6	11		28.9	18.1	9.2	71.0
Aug 17			196	28	0	0	0	96	27		4	10		28.2	17.2	9.2	71.0
Aug 18			253	32	0	0	0	104	27		9	15		24.1	12.9	9.2	71.0
Aug 19			194	22	0	0	0	102	38		4	1		32.4	21.3	9.4	71.0
Aug 20			353	49	0	0	0	116	39		1	5		23.9	13.0	9.4	71.0
Aug 21			292	48	0	0	0	119	28		5	5		24.4	13.6	9.4	70.0
Aug 22			468	60	0	0	0	224	55		0	11		22.9	12.1	6.9	70.0
Aug 23			344	60	4	0	0	202	48		0	4		21.9	11.1	---	---
Aug 24			382	79	1	0	0	154	53		3	1		22.0	11.1	---	---
Aug 25			242	85	0	0	0	149	38		14	1		21.9	11.1	6.9	70.0
Aug 26			218	80	1	0	0	182	53		10	3		20.5	9.6	6.9	69.0
Aug 27			250	65	0	1	0	105	29		8	11		22.9	12.3	6.9	69.0
Aug 28			394	120	0	0	0	108	30		3	3		24.8	14.0	6.9	69.0
Aug 29			401	104	0	0	0	112	29		5	0		23.0	12.6	6.9	69.0
Aug 30			400	112	-1	0	0	104	19		0	11		20.9	11.0	7.2	69.0
Aug 31			463	114	0	0	0	109	22		0	12		19.9	10.1	7.2	69.0
TOTAL		1,065	5,558	1,258	5	1	12	4,033	1,244		592	251					
AVG.		97	278	41	0	0	0	130	40		19	8		25.1	14.3	8.5	70.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	67,484	5,029
SUMMER	13,980	1,538
FALL	5,558	1,151
TOTAL	87,022	7,718

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	STURGEON
5	1	898	10,645	4,183	264,827	793	0

TABLE 94

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL				unclipped			DISCH	SPILL	TURBIDITY		
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	SHAD	LAMPREY	STURGEON	KCFS	KCFS	SECCHI	DEG F
Sep 1			455	178	0	0		116	30			10		21.8	0.0	7.3	69.0
Sep 2			758	162	0	0		179	52			8		20.5	0.0	7.3	69.0
Sep 3			642	147	0	0		168	27			3		17.0	0.0	7.3	69.0
Sep 4			468	158	1	0		170	28			2		16.7	0.0	7.3	68.0
Sep 5			906	249	4	0		307	50			2		13.0	0.0	7.5	68.0
Sep 6			1,525	283	2	0		369	88			7		18.8	0.0	7.3	68.0
Sep 7			1,780	335	10	2		494	107			1		16.6	0.0	7.3	68.0
Sep 8			1,488	360	5	2		756	144			2		20.1	0.0	7.5	68.0
Sep 9			1,393	302	5	1		727	149			9		20.9	0.0	7.5	68.0
Sep 10			1,777	472	12	6		1,270	221			1		14.1	0.0	7.5	68.0
Sep 11			985	301	17	8		1,002	144			0		18.4	0.0	7.5	68.0
Sep 12			1,875	440	24	2		1,466	217			5		17.1	0.0	7.8	68.0
Sep 13			2,079	562	34	9		2,220	431			2		20.8	0.0	7.8	68.0
Sep 14			1,572	351	32	4		1,641	315			1		24.3	0.0	7.8	68.0
Sep 15			1,559	442	37	19		2,124	446			1		22.6	0.0	8.0	68.0
Sep 16			966	443	67	2		1,762	392			1		33.3	0.0	8.0	68.0
Sep 17			1,317	600	107	2		3,144	683			5		19.9	0.0	8.0	66.0
Sep 18			961	230	117	18		2,203	509			2		18.6	0.0	7.5	66.0
Sep 19			1,163	641	129	4		3,397	708			5		24.6	0.0	7.3	66.0
Sep 20			944	426	105	5		2,738	489			-1		15.4	0.0	7.3	66.0
Sep 21			754	374	43	1		2,148	395			0		19.4	0.0	7.2	66.0
Sep 22			529	333	60	2		2,380	373			0		12.1	0.0	7.2	66.0
Sep 23			326	239	40	2		1,854	305			0		13.5	0.0	7.1	65.0
Sep 24			511	254	89	4		2,659	475			0		15.5	0.0	7.2	65.0
Sep 25			438	291	69	3		1,918	362			1		10.5	0.0	7.2	64.0
Sep 26			356	203	34	2		2,044	369			1		22.0	0.0	7.4	64.0
Sep 27			352	207	35	0		2,371	496			1		16.4	0.0	7.4	64.0
Sep 28			292	180	40	2		2,161	437			4		17.1	0.0	7.4	64.0
Sep 29			302	267	41	1		2,879	579			0		19.0	0.0	7.8	64.0
Sep 30			288	217	41	2		3,035	523			1		15.3	0.0	7.8	64.0
TOTAL			28,761	9,647	1,200	103		49,702	9,544			74					
AVG.			959	322	40	3		1,657	318			2		18.5	0.0	7.5	66.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	67,484	5,029
SUMMER	13,980	1,538
FALL	34,319	10,798
TOTAL	115,783	17,365

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
1,205	104	898	60,347	13,727

SHAD	LAMPREY
264,827	867

TABLE 95

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ICE HARBOR PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	TOTAL		unclipped		PINK	SHAD	LAMPREY	STURGEON	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD							SECCHI	DEG F*
Oct 1			141	181	42	10		2,442	419			0		12.2	0.0	7.8	64.0
Oct 2			104	147	34	2		1,829	332			4		13.9	0.0	7.8	64.0
Oct 3			210	203	44	2		2,542	508			0		17.1	0.0	7.8	64.0
Oct 4			233	155	35	0		2,533	612			0		17.7	0.0	7.4	64.0
Oct 5			214	154	37	4		2,669	663			2		22.0	0.0	7.4	64.0
Oct 6			122	144	26	2		1,993	521			2		20.4	0.0	7.4	63.0
Oct 7			96	112	36	1		1,762	459			-3		19.7	0.0	7.4	63.0
Oct 8			68	119	11	1		1,423	353			0		19.4	0.0	7.4	63.0
Oct 9			75	67	9	0		937	238			0		21.9	0.0	7.4	63.0
Oct 10			74	96	19	0		1,030	235			-1		25.1	0.0	7.4	63.0
Oct 11			121	116	39	1		1,291	362			1		20.3	0.0	7.2	63.0
Oct 12			87	65	43	1		1,360	241			0		21.2	0.0	8.2	63.0
Oct 13			83	62	47	0		1,218	271			1		27.5	0.0	8.2	63.0
Oct 14			110	88	60	1		1,665	578			1		30.0	0.0	7.6	61.0
Oct 15			99	63	55	2		1,471	483			0		25.2	0.0	7.2	61.0
Oct 16			63	40	31	2		829	306			0		26.4	0.0	6.9	60.0
Oct 17			81	69	36	0		897	325			0		17.6	0.0	6.7	60.0
Oct 18			48	66	39	0		771	270			0		18.3	0.0	6.7	60.0
Oct 19			43	35	34	0		728	228			0		21.7	0.0	6.7	59.0
Oct 20			44	44	18	0		755	214			0		12.9	0.0	8.8	59.0
Oct 21			75	35	17	0		722	231			1		19.2	0.0	8.8	59.0
Oct 22			32	35	13	0		437	106			0		20.8	0.0	8.8	59.0
Oct 23			25	40	12	1		437	156			0		21.0	0.0	8.8	59.0
Oct 24			28	26	7	0		439	134			0		26.2	0.0	8.8	59.0
Oct 25			26	27	12	1		416	132			0		24.0	0.0	8.8	59.0
Oct 26			27	20	4	0		277	77			0		15.8	0.0	8.6	59.0
Oct 27			12	13	6	1		312	94			0		22.4	0.1	8.4	59.0
Oct 28			13	9	7	-1		243	70			0		23.2	0.0	8.4	59.0
Oct 29			17	13	7	4		237	85			0		26.7	0.0	8.4	59.0
Oct 30			13	7	5	0		229	92			0		25.6	0.0	8.4	58.0
Oct 31			10	17	7	5		232	64			0		22.2	0.0	8.0	58.0
TOTAL			2,394	2,268	792	40		34,126	8,859			8					
AVG.			77	73	26	1		1,101	286			0		21.2	0.0	7.9	61.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	67,484	5,029
SUMMER	13,980	1,538
FALL	36,713	13,066
TOTAL	118,177	19,633

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
1,997	144	898	94,473	22,586

SHAD	LAMPREY	STURGEON
264,827	875	0

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 96

DISCHARGE AND WATER QUALITY DATA

ICE HARBOR PROJECT 2016

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Nov 1	34.0	0.0	8.0	58.0	Dec 1	22.3	0.0	---	---
Nov 2	28.1	0.0	8.0	58.0	Dec 2	19.9	0.0	7.6	50.0
Nov 3	23.5	0.0	8.0	58.0	Dec 3	16.4	0.0	7.6	50.0
Nov 4	31.0	0.0	8.0	58.0	Dec 4	19.6	0.0	7.6	49.0
Nov 5	---	0.0	8.0	58.0	Dec 5	19.2	0.0	7.5	49.0
Nov 6	20.3	0.0	8.0	58.0	Dec 6	19.7	0.0	7.5	49.0
Nov 7	27.9	0.0	8.2	58.0	Dec 7	19.7	0.0	7.5	49.0
Nov 8	22.0	0.0	8.2	57.0	Dec 8	25.2	0.0	7.6	48.0
Nov 9	20.2	0.0	8.2	57.0	Dec 9	18.3	0.0	7.6	46.0
Nov 10	24.7	0.0	8.8	57.0	Dec 10	15.0	0.0	7.6	46.0
Nov 11	23.3	0.0	8.1	57.0	Dec 11	15.1	0.0	7.6	46.0
Nov 12	12.7	0.0	7.9	56.0	Dec 12	24.7	0.0	7.6	45.0
Nov 13	21.1	0.0	7.9	56.0	Dec 13	19.9	0.0	7.8	45.0
Nov 14	23.0	0.0	7.9	56.0	Dec 14	25.5	0.0	7.2	44.0
Nov 15	22.9	0.0	7.5	56.0	Dec 15	16.6	0.0	7.2	44.0
Nov 16	21.6	0.0	7.5	56.0	Dec 16	20.7	0.0	7.2	44.0
Nov 17	22.9	0.0	7.6	55.0	Dec 17	26.0	0.0	7.1	44.0
Nov 18	29.9	0.0	7.6	55.0	Dec 18	19.4	0.0	7.1	43.0
Nov 19	21.8	0.0	7.5	55.0	Dec 19	24.1	0.0	7.1	42.0
Nov 20	16.1	0.0	7.5	55.0	Dec 20	22.8	0.0	7.1	41.0
Nov 21	22.7	0.0	7.6	55.0	Dec 21	20.6	0.0	7.1	41.0
Nov 22	22.5	0.0	7.6	54.0	Dec 22	23.3	0.0	7.1	41.0
Nov 23	27.4	0.0	7.7	54.0	Dec 23	25.9	0.0	7.1	41.0
Nov 24	18.6	0.0	7.7	53.0	Dec 24	10.5	0.0	7.1	40.0
Nov 25	22.8	0.0	7.7	52.0	Dec 25	19.2	0.0	7.1	40.0
Nov 26	22.5	0.0	7.7	52.0	Dec 26	15.5	0.0	7.1	40.0
Nov 27	17.6	0.0	7.8	51.0	Dec 27	22.2	0.0	7.3	40.0
Nov 28	24.9	0.0	7.6	51.0	Dec 28	24.9	0.0	7.3	40.0
Nov 29	18.7	0.0	7.6	51.0	Dec 29	22.9	0.0	7.3	40.0
Nov 30	19.3	0.0	7.6	51.0	Dec 30	20.7	0.0	---	---
					Dec 31	17.5	0.0	---	---
AVG.	22.9	0.0	7.8	55.3	AVG.	20.4	0.0	7.3	44.2

TABLE 97
 YEARLY TOTALS OF SALMONIDS COUNTED OVER
 ICE HARBOR DAM
 1962 - 2016

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
Totals	4,155,316	5,751,247	20,445	98,989	10,025,997
10-Year Average	160,212	166,033	959	4,427	331,632

*Jacks included

These counts include the extended season videotaped counts that were made between 0600 and 1600 hours in November and December for the count seasons, 1996-2002.

TABLE 98
MONTHLY COUNT OF CHINOOK SALMON
ICE HARBOR DAM
1962 - 2016

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	12,829	8,353
1974				842	16,670	5,315	6,494	483	2,066	574			32,444	19,361	10,269	2,814
1975				1,314	17,796	5,817	3,972	506	1,875	406			31,686	21,401	7,727	2,558
1976				3,146	19,269	8,544	3,921	349	1,123	204			36,556	25,056	10,026	1,474
1977				24,003	17,626	9,328	3,606	297	1,370	284			56,514	44,421	10,370	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
TOTAL		1	352	556,783	1,533,235	722,091	292,255	107,682	773,792	165,352	3,681	92	4,155,316	2,335,634	790,717	1,028,386
10-Year Average				8,880	60,116	27,081	6,472	6,390	45,019	6,221			160,212	79,254	24,027	56,897

*Jacks included

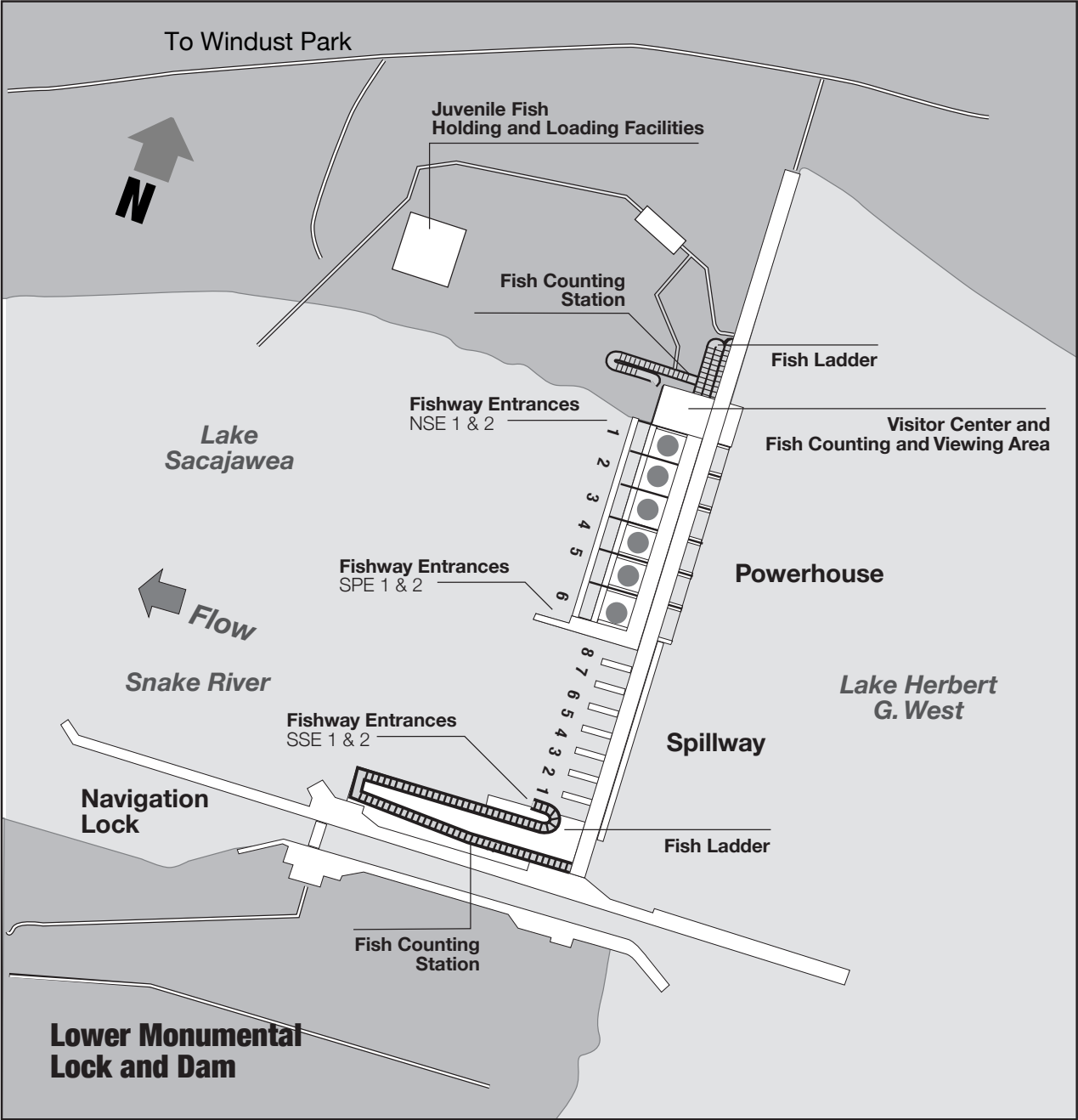
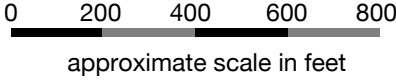
The 1996 through 2002, 2013 count seasons were extended to include video counts made between 0600 and 1600 hours daily from November 1 through December 15.

TABLE 99
MONTHLY COUNT OF STEELHEAD
ICE HARBOR DAM
1962 -2016

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
Totals	479	574	27,105	122,183	23,552	28,846	279,454	553,208	2,891,750	1,723,186	86,164	14,746	5,751,247
10-Year Average				2,087	225	897	9,821	20,590	86,467	44,808			166,033

Video daytime counts during extended count seasons are included.

Plate 7 Lower Monumental Lock and Dam



LOWER MONUMENTAL DAM

FISH COUNTING SCHEDULE

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

FISH LADDER OPERATING SCHEDULE

North Ladder

1 Jan – 4 Jan Ladder in service.
4 Jan – 22 Feb Ladder dewatered for annual maintenance.
22 Feb – 31 Dec Ladder in service.

South Ladder

1 Jan – 23 Feb Ladder in service.
23 Feb – 25 Feb Ladder dewatered for annual maintenance.
25 Feb – 31 Dec Ladder in service.

FISHWAY ACTIVITIES

Water temperatures were recorded hourly from north and south fish ladder exit pools, at upper diffusers, and at the ladder entrance transition pools. Hourly readings were taken from June 1 to September 30. The purpose is to determine if summer spill has 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 discovered.

All fish pumps were out of service from 1 January through 1 March for annual maintenance.

The juvenile fish facility was operated for juvenile fish transport/bypass and adult fallbacks from 1 April to 21 December.

Lo Mo's RSW was in service as per requirements of 2016 operating year.

TABLE 100

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LOWER MONUMENTAL DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				1,924	60,370	19,277	4,308	7,594	36,859	4,981			135,313
STEELHEAD				1,324	113	508	4,002	4,319	42,587	41,343			94,196
SOCKEYE						240	754	30	0	0			1,024
COHO*								8	1,839	1,446			3,293
PINK													0
TOTAL				3,248	60,483	20,025	9,064	11,951	81,285	47,770			233,826
LAMPREY						12	110	106	11	1			240
STURGEON													0
BULL TROUT				4	1								5

*Jacks included

TABLE 101

DISCHARGE AND WATER QUALITY DATA
LOWER MONUMENTAL PROJECT 2016

MARCH				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Jan 1	41.9	0.0	4.0	43.0
Jan 2	39.1	0.0	4.0	43.0
Jan 3	38.7	0.0	3.0	44.0
Jan 4	34.7	0.0	3.0	44.0
Jan 5	41.1	0.0	3.0	44.0
Jan 6	46.5	0.0	3.0	43.5
Jan 7	52.7	0.0	3.0	43.5
Jan 8	51.5	0.0	3.0	43.0
Jan 9	62.5	0.0	3.0	43.0
Jan 10	60.2	0.0	3.0	43.0
Jan 11	57.3	2.3	3.0	43.0
Jan 12	62.5	2.3	3.0	43.0
Jan 13	57.7	0.0	3.0	43.0
Jan 14	54.2	0.0	3.0	43.0
Jan 15	63.6	0.0	3.0	44.0
Jan 16	66.4	5.3	3.0	44.0
Jan 17	54.5	0.0	3.0	44.0
Jan 18	57.4	0.0	3.0	44.0
Jan 19	60.3	0.0	3.0	44.0
Jan 20	57.7	0.0	3.0	44.0
Jan 21	57.7	0.0	3.0	44.0
Jan 22	59.4	0.0	3.0	44.0
Jan 23	60.5	0.0	3.5	45.0
Jan 24	71.2	0.0	3.5	45.0
Jan 25	72.8	0.0	3.5	45.0
Jan 26	74.9	0.0	3.5	45.0
Jan 27	68.9	0.0	3.5	45.0
Jan 28	66.6	0.0	3.5	46.0
Jan 29	61.5	0.0	3.5	46.0
Jan 30	62.6	0.0	3.5	46.0
Jan 31	56.6	0.0	3.5	46.0
AVG	57.2	0.3	3.2	44.1

FEBRUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Feb 1	39.2	0.0	4.5	39.0
Feb 2	35.3	0.0	4.5	39.0
Feb 3	31.8	0.0	4.5	39.0
Feb 4	28.8	0.0	4.5	39.0
Feb 5	20.7	0.0	4.5	39.0
Feb 6	29.4	0.0	4.5	39.0
Feb 7	21.0	0.0	4.5	39.0
Feb 8	25.8	0.0	4.5	39.0
Feb 9	25.1	0.0	4.5	40.0
Feb 10	22.4	0.0	4.5	40.0
Feb 11	23.3	0.0	4.5	40.0
Feb 12	25.7	0.0	5.0	40.0
Feb 13	24.3	0.0	5.0	40.0
Feb 14	31.4	0.0	5.0	40.0
Feb 15	25.1	0.0	5.0	40.0
Feb 16	38.2	0.0	5.0	40.0
Feb 17	58.0	0.0	4.5	40.0
Feb 18	60.3	0.0	4.5	40.0
Feb 19	59.1	0.0	4.5	40.0
Feb 20	56.6	0.0	4.5	41.0
Feb 21	61.6	0.0	4.5	41.0
Feb 22	53.2	0.0	4.5	41.0
Feb 23	50.0	0.0	4.5	41.0
Feb 24	48.9	0.0	4.5	41.0
Feb 25	42.1	0.0	4.5	41.0
Feb 26	40.9	0.0	4.5	41.0
Feb 27	34.8	0.0	4.5	41.0
Feb 28	41.7	0.0	4.5	42.0
Feb 29	43.3	0.0	4.0	42.0
AVG	37.9	0.0	4.6	40.1

MARCH				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
Mar 1	41.9	0.0	4.0	43.0
Mar 2	39.1	0.0	4.0	43.0
Mar 3	38.7	0.0	3.0	44.0
Mar 4	34.7	0.0	3.0	44.0
Mar 5	41.1	0.0	3.0	44.0
Mar 6	46.5	0.0	3.0	43.5
Mar 7	52.7	0.0	3.0	43.5
Mar 8	51.5	0.0	3.0	43.0
Mar 9	62.5	0.0	3.0	43.0
Mar 10	60.2	0.0	3.0	43.0
Mar 11	57.3	2.3	3.0	43.0
Mar 12	62.5	2.3	3.0	43.0
Mar 13	57.7	0.0	3.0	43.0
Mar 14	54.2	0.0	3.0	43.0
Mar 15	63.6	0.0	3.0	44.0
Mar 16	66.4	5.3	3.0	44.0
Mar 17	54.5	0.0	3.0	44.0
Mar 18	57.4	0.0	3.0	44.0
Mar 19	60.3	0.0	3.0	44.0
Mar 20	57.7	0.0	3.0	44.0
Mar 21	57.7	0.0	3.0	44.0
Mar 22	59.4	0.0	3.0	44.0
Mar 23	60.5	0.0	3.5	45.0
Mar 24	71.2	0.0	3.5	45.0
Mar 25	72.8	0.0	3.5	45.0
Mar 26	74.9	0.0	3.5	45.0
Mar 27	68.9	0.0	3.5	45.0
Mar 28	66.6	0.0	3.5	46.0
Mar 29	61.5	0.0	3.5	46.0
Mar 30	62.6	0.0	3.5	46.0
Mar 31	56.6	0.0	3.5	46.0
AVG	57.2	0.3	3.2	44.1

TABLE 102

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

LOWER MONUMENTAL PROJECT - FISH COUNTS											APRIL 2016						
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				52	30			0		56.6	0.0	3.5	46.0
Apr 2	2			-1				20	20			0		58.0	0.0	3.0	46.0
Apr 3	5			0				74	42			0		63.5	0.0	3.0	46.0
Apr 4	5			0				86	47			0		65.2	27.9	2.5	47.0
Apr 5	2			0				58	31			0		67.6	27.8	2.5	47.5
Apr 6	4			0				64	40			0		68.9	28.0	3.5	47.0
Apr 7	5			0				72	52			1		64.4	28.0	3.0	48.0
Apr 8	1			0				55	42			0		67.8	28.0	3.5	49.0
Apr 9	4			0				71	52			1		66.7	28.0	3.5	49.0
Apr 10	10			0				88	70			0		70.2	28.0	4.0	50.0
Apr 11	11			0				79	54			0		82.3	28.0	4.5	50.0
Apr 12	14			0				70	47			1		88.3	28.0	4.5	50.0
Apr 13	14			0				36	31			0		93.8	28.0	4.5	50.0
Apr 14	19			0				57	47			0		96.6	28.0	4.5	50.0
Apr 15	18			0				47	36			0		101.0	29.1	4.5	51.0
Apr 16	23			1				58	41			0		101.8	28.6	4.5	51.0
Apr 17	29			0				39	28			1		97.6	28.0	4.5	51.0
Apr 18	28			0				40	26			0		90.4	28.0	4.5	52.0
Apr 19	32			0				29	22			0		86.0	27.9	4.5	52.0
Apr 20	40			0				22	13			0		87.3	27.4	4.5	52.0
Apr 21	75			1				28	19			0		85.5	26.9	4.5	51.0
Apr 22	41			1				27	15			0		95.2	26.5	4.5	51.0
Apr 23	98			2				18	12			0		99.8	25.9	4.0	52.0
Apr 24	107			4				38	32			0		108.8	26.0	4.0	52.0
Apr 25	127			7				19	14			0		122.8	30.4	3.5	52.0
Apr 26	143			0				13	10			0		118.8	29.4	3.5	52.0
Apr 27	128			-1				24	17			0		103.7	26.3	3.0	53.0
Apr 28	213			10				17	10			0		100.6	27.0	3.0	53.5
Apr 29	325			6				9	6			0		98.8	26.4	3.0	54.0
Apr 30	360			11				14	8			0		91.7	26.4	3.0	54.0
TOTAL	1,883			41				1,324	914			4					
AVG.	63			1				44	30			0		86.7	24.9	3.8	50.3

Note: Official Spring Chinook run started April 1.

TABLE 103

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

LOWER MONUMENTAL PROJECT - FISH COUNTS														MAY 2016			
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	557			2				8	7			0	0	88.3	26.9	3.0	54.0
May 2	359			5				10	8			0	0	79.2	27.0	3.0	54.0
May 3	333			7				8	7			0	0	81.5	25.8	3.0	54.0
May 4	547			11				8	4			0	0	80.3	25.1	3.0	54.0
May 5	745			15				11	8			0	0	79.2	25.1	3.0	54.0
May 6	2,422			74				10	6			0	0	87.1	24.0	3.0	55.0
May 7	3,524			88				3	3			0	0	96.3	24.9	4.0	56.0
May 8	4,325			136				14	13			0	0	103.7	25.2	4.0	56.0
May 9	6,184			221				3	2			0	0	111.0	24.4	4.0	56.0
May 10	4,821			268				3	3			0	0	115.0	25.0	4.0	56.0
May 11	3,800			242				2	1			0	0	110.5	25.3	4.0	56.0
May 12	2,215			174				2	1			0	0	91.4	25.6	4.0	56.0
May 13	3,090			287				2	2			0	1	88.5	26.3	4.0	57.0
May 14	2,224			228				3	1			0	0	80.5	28.5	4.0	57.0
May 15	1,814			241				1	0			0	0	85.2	35.8	3.0	56.0
May 16	1,337			237				1	1			0	0	92.3	37.3	2.0	56.0
May 17	928			163				1	1			0	0	97.4	41.0	2.0	56.0
May 18	1,119			233				0	0			0	0	91.3	40.6	2.0	56.0
May 19	1,664			344				2	1			0	0	82.0	40.3	2.0	56.0
May 20	1,783			329				0	0			0	0	88.6	40.5	2.0	56.0
May 21	1,089			172				1	1			0	0	102.2	40.8	2.0	56.0
May 22	1,524			216				3	2			0	0	89.0	40.5	3.0	56.0
May 23	1,282			186				3	1			0	0	85.0	40.3	3.0	56.0
May 24	1,886			226				5	2			0	0	78.4	42.4	2.5	56.0
May 25	1,220			213				0	0			1	0	79.0	45.0	4.0	56.0
May 26	1,430			199				0	0			0	-1	74.3	45.0	4.0	56.5
May 27	995			159				2	1			0	0	71.9	27.1	3.5	57.0
May 28	793			119				0	0			0	0	63.1	45.3	3.5	57.0
May 29	477			98				2	0			0	0	66.2	47.0	3.5	57.0
May 30	422			91				4	5			0	0	65.1	45.5	4.0	57.0
May 31	415			62				1	1			0	0	61.1	47.0	3.5	56.0
TOTAL	55,324			5,046				113	82			1	0				
AVG.	1,785			163				4	3			0	0	86.0	34.2	3.2	55.9
RUN YEAR		CHINOOK	CHINOOK						unclipped			BULL					
TOTALS TO DATE		ADULT	JACK					STEELHEAD	STEELHEAD			TROUT	LAMPREY				
SPRING		57,207	5,087					1,437	996			5	0				

TABLE 104

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

LOWER MONUMENTAL PROJECT - FISH COUNTS											JUNE 2016				
DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL			BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL				SOCKEYE	STEELHEAD	unclipped STEELHEAD					PINK	STURGEON
Jun 1	737			87			0	2	0			62.3	45.1	3.5	56.0
Jun 2	847			122			0	2	2			63.3	47.1	4.0	56.5
Jun 3	770			105			0	1	0		1	62.6	45.0	4.0	57.0
Jun 4	1,035			104			0	1	0		0	60.2	41.1	4.0	57.0
Jun 5	792			109			0	-1	0		0	61.9	26.5	4.0	58.5
Jun 6	559			72			0	2	1		1	65.6	26.4	4.0	60.0
Jun 7	735			109			0	4	3		0	65.8	24.6	4.0	60.0
Jun 8	331			77			0	5	5		0	70.7	23.9	4.0	63.0
Jun 9	539			81			0	4	1		1	69.2	23.0	4.0	63.0
Jun 10	614			106			0	6	5		0	71.0	23.9	4.0	63.0
Jun 11	932			85			0	10	3		1	71.0	23.9	4.0	62.0
Jun 12	490			65			0	5	2		0	56.6	24.0	4.0	62.0
Jun 13	527			57			0	25	11		1	47.8	23.9	4.0	62.0
Jun 14		650		77			2	14	12		0	50.9	24.5	5.0	62.0
Jun 15		697		75			1	8	3		0	50.0	24.2	5.0	62.0
Jun 16		529		72			0	12	7		0	53.4	25.0	5.0	62.0
Jun 17		725		126			0	26	9		0	47.5	24.8	5.0	64.0
Jun 18		390		73			2	19	12		0	47.1	26.4	5.0	64.0
Jun 19		793		131			7	19	9		1	45.7	26.3	4.0	65.0
Jun 20		513		79			5	23	15		1	46.2	26.6	4.0	65.0
Jun 21		789		114			0	32	22		0	42.5	26.2	4.0	65.0
Jun 22		368		75			7	28	21		0	42.8	17.0	4.0	65.0
Jun 23		345		84			9	23	18		0	41.2	16.4	4.0	65.0
Jun 24		356		66			21	17	12		1	42.8	17.0	4.0	65.0
Jun 25		420		78			21	22	8		2	36.0	16.7	4.0	65.0
Jun 26		277		71			23	35	19		1	32.9	16.4	4.0	65.0
Jun 27		152		56			21	27	17		0	33.3	16.6	4.0	65.0
Jun 28		230		51			29	37	17		1	36.0	17.0	4.0	65.0
Jun 29		296		74			39	55	30		0	42.3	16.7	3.5	65.0
Jun 30		269		89			53	45	33		0	39.1	17.1	3.5	65.0
TOTAL	8,908	7,799		2,570			240	508	297		12				
AVG.	685	459		86			8	17	10		0	51.9	25.1	4.1	62.5
RUN YEAR															
TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK					SOCKEYE	STEELHEAD	unclipped STEELHEAD		BULL TROUT	LAMPREY			
SPRING	66,115	6,266					240	1,945	1,293		5	12			
SUMMER	7,799	1,391													
TOTAL	73,914	7,657													

TABLE 105

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

LOWER MONUMENTAL PROJECT - FISH COUNTS

JULY 2016

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		254		58			65	56	43				1	39.2	16.8	4.5	66.0
Jul 2		211		49			60	60	35				1	39.1	17.0	5.0	66.0
Jul 3		270		44			76	66	37				2	41.3	16.9	5.0	66.0
Jul 4		160		44			72	72	43				0	38.0	17.0	5.0	66.0
Jul 5		230		66			50	100	51				4	40.9	16.6	5.0	67.5
Jul 6		198		53			49	99	61				7	28.8	15.4	5.0	67.5
Jul 7		146		36			37	103	54				5	31.5	16.6	5.0	67.5
Jul 8		166		44			45	137	68				1	33.0	16.3	5.0	68.0
Jul 9		192		41			52	134	69				0	28.2	13.6	5.0	68.0
Jul 10		76		23			30	76	43				2	29.8	17.0	5.0	68.0
Jul 11		163		29			43	214	112				2	28.2	16.2	5.0	68.0
Jul 12		134		34			33	156	73				4	31.2	16.6	5.0	68.0
Jul 13		130		20			24	153	80				6	34.7	16.2	5.0	68.0
Jul 14		117		30			15	143	60				0	34.7	17.0	5.0	68.0
Jul 15		83		15			11	168	89				9	33.6	16.9	5.0	68.0
Jul 16		67		13			16	186	87				3	34.0	17.0	5.0	68.0
Jul 17		59		20			9	174	85				7	31.6	16.5	6.0	68.0
Jul 18		63		16			6	113	53				4	25.7	13.4	7.0	69.0
Jul 19		70		23			9	128	55				1	30.7	16.7	7.0	69.0
Jul 20		57		14			6	165	79				3	32.8	16.9	7.0	69.0
Jul 21		60		11			8	151	83				2	31.5	16.5	7.0	69.0
Jul 22		73		25			12	156	72				3	30.8	17.0	7.0	69.0
Jul 23		68		8			5	158	63				3	31.2	16.3	7.0	68.0
Jul 24		48		8			5	134	56				1	26.4	14.0	6.0	68.0
Jul 25		19		9			2	60	29				2	28.7	15.5	6.0	68.0
Jul 26		56		14			4	187	65				2	29.5	17.0	6.0	68.0
Jul 27		72		10			7	169	73				6	30.4	16.5	5.5	68.0
Jul 28		49		7			1	111	48				3	29.2	17.0	5.5	69.0
Jul 29		40		4			0	66	37				5	27.4	13.9	5.5	69.0
Jul 30		75		15			1	147	54				13	28.0	17.0	5.5	69.0
Jul 31		106		13			1	160	69				8	25.8	14.5	5.5	69.0
TOTAL		3,512		796			754	4,002	1,926				110				
AVG.		113		26			24	129	62				4	31.8	16.2	5.6	68.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE	66,115	6,266
SPRING	11,311	2,187
SUMMER	77,426	8,453
TOTAL		

SOCKEYE	STEELHEAD	unclipped STEELHEAD
994	5,947	3,219

BULL TROUT	LAMPREY
5	122

TABLE 106

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

LOWER MONUMENTAL PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL	unclipped		BULL		DISCH KCFS	SPILL KCFS	TURBIDITY SECCH	TEMP DEG F
	SPRING	SUMMER	FALL					SOCKEYE	STEELHEAD	STEELHEAD	PINK				
Aug 1		61		8	0	0	121		54						26.2
Aug 2		75		11	0	0	181		67						15.2
Aug 3		81		8	0	0	145		59						5.5
Aug 4		82		17	0	0	196		92						70.0
Aug 5		120		14	0	0	284		119						24.2
Aug 6		78		7	0	0	238		92						12.6
Aug 7		61		6	0	0	179		62						5.5
Aug 8		119		12	0	0	235		91						70.0
Aug 9		99		20	0	0	245		99						24.1
Aug 10		114		17	0	0	153		57						13.4
Aug 11		79		6	0	0	121		41						5.5
Aug 12		90		18	0	0	81		39						70.0
Aug 13		90		13	0	0	39		7						24.5
Aug 14			121	12	0	0	76		35						12.2
Aug 15			205	24	0	0	88		33						5.0
Aug 16			208	18	0	0	68		29						69.0
Aug 17			193	37	0	0	86		32						24.7
Aug 18			128	12	0	0	46		12						10.5
Aug 19			230	31	0	0	75		30						5.5
Aug 20			170	24	0	0	82		37						69.0
Aug 21			234	38	0	0	90		33						21.0
Aug 22			408	77	0	0	175		60						8.8
Aug 23			468	72	0	0	138		60						5.5
Aug 24			371	79	0	1	155		53						69.0
Aug 25			358	83	0	2	107		39						19.9
Aug 26			350	75	2	1	195		71						7.6
Aug 27			270	88	0	0	157		45						5.5
Aug 28			266	84	0	1	180		55						68.0
Aug 29			309	109	0	0	126		34						19.1
Aug 30			483	121	1	0	137		33						6.9
Aug 31			411	121	0	0	120		25						7.9
TOTAL		1,149	5,183	1,262	3	5	4,319		1,595						19.2
AVG.		88	288	41	0	0	139		51						7.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	66,115	6,266
SUMMER	12,460	2,344
FALL	5,183	1,105
TOTAL	83,758	9,715

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
3	5	1,024	10,266	4,814

BULL TROUT	LAMPREY
5	228

22.5	10.5	5.4	69.1
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TABLE 107

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

LOWER MONUMENTAL PROJECT - FISH COUNTS													SEPTEMBER 2016				
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			537	150	1	0		165	38			4	19.2	6.9	5.0	70.0	
Sep 2			455	186	0	0		168	52			1	23.1	0.0	5.0	70.0	
Sep 3			645	239	1	0		185	58			2	21.8	0.0	5.0	70.0	
Sep 4			491	158	0	0		177	45			1	18.7	0.0	5.0	70.0	
Sep 5			434	204	1	0		180	46			0	17.4	0.0	5.0	69.0	
Sep 6			613	305	0	0		209	38			1	15.2	0.0	5.0	69.0	
Sep 7			1,298	437	1	0		294	59			1	18.9	0.0	5.0	69.0	
Sep 8			1,551	498	0	0		543	127			2	16.3	0.0	5.0	68.0	
Sep 9			1,326	428	5	0		628	145			0	19.6	0.0	5.0	68.0	
Sep 10			1,120	399	4	1		523	102			0	20.5	0.0	5.5	67.5	
Sep 11			1,723	596	7	3		841	162			-1	14.2	0.0	5.5	6.8	
Sep 12			1,207	491	10	2		1,290	256			-1	18.8	0.0	5.5	67.5	
Sep 13			1,789	690	19	2		1,712	343			0	15.8	0.0	5.0	67.5	
Sep 14			1,631	611	10	0		1,289	234			0	21.7	0.0	5.0	67.0	
Sep 15			1,392	635	56	6		1,675	360			0	23.9	0.0	5.0	67.0	
Sep 16			1,259	472	84	11		1,537	272			1	22.6	0.0	5.0	67.0	
Sep 17			774	414	33	12		1,854	323			-1	32.8	0.0	5.0	67.0	
Sep 18			1,079	666	96	13		2,172	405			0	17.9	0.0	5.0	67.0	
Sep 19			1,015	522	136	50		2,827	530			0	15.4	0.0	5.0	67.0	
Sep 20			1,043	615	227	39		2,986	504			1	25.0	0.0	5.0	67.0	
Sep 21			854	377	140	32		2,355	399			1	18.4	0.0	5.0	67.0	
Sep 22			877	550	137	12		2,742	485			-2	18.9	0.0	5.0	67.0	
Sep 23			459	330	89	11		2,539	448			0	15.6	0.0	5.0	65.0	
Sep 24			363	300	104	13		2,674	522			1	13.4	0.0	5.0	65.0	
Sep 25			298	184	69	2		1,648	318			-1	15.4	0.0	5.0	65.0	
Sep 26			326	209	65	9		1,581	309			0	12.2	0.0	5.0	65.0	
Sep 27			227	157	51	20		1,698	302			1	20.7	0.0	5.0	65.0	
Sep 28			247	114	60	21		1,780	287			0	16.9	0.0	5.0	65.0	
Sep 29			264	115	54	21		2,086	348			0	17.7	0.0	5.0	64.0	
Sep 30			266	244	76	23		2,229	395			0	16.6	0.0	5.0	64.0	
TOTAL			25,563	11,296	1,536	303		42,587	7,912			11					
AVG.			852	377	51	10		1,420	264			0	18.8	0.2	5.1	65.1	
RUN YEAR																	
TOTALS TO DATE			CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD			BULL TROUT	LAMPREY				
SPRING			66,115	6,266	1,539	308	1,024	52,853	12,726			5	239				
SUMMER			12,460	2,344													
FALL			30,746	12,401													
TOTAL			109,321	21,011													

TABLE 108

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

LOWER MONUMENTAL PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT		CHINOOK		COHO		TOTAL		unclipped		BULL		DISCH SPILL TURBIDITY			
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD	PINK	STURGEON	TROUT	LAMPREY	KCFS	KCFS	SECCH
Oct 1			326	257	102	10		3,558	617			-1	16.7	0.0	5.0	64.0
Oct 2			135	227	64	7		2,794	534			0	13.0	0.0	5.0	64.0
Oct 3			195	311	103	20		3,222	632			2	13.4	0.0	5.0	64.0
Oct 4			171	246	73	9		2,830	544			0	18.0	0.0	5.0	64.0
Oct 5			176	238	62	4		2,571	542			0	17.2	0.0	5.0	64.0
Oct 6			126	98	48	7		2,457	587			-1	22.6	0.0	5.0	64.0
Oct 7			125	150	53	15		2,650	579			0	21.4	0.0	5.0	64.0
Oct 8			64	94	51	9		1,740	394			0	19.9	0.0	5.0	64.0
Oct 9			86	64	39	8		1,617	343			0	19.1	0.0	5.0	63.0
Oct 10			54	48	28	11		1,010	191			0	22.2	0.0	5.0	63.0
Oct 11			95	135	47	3		1,484	336			0	23.7	0.0	5.0	62.0
Oct 12			85	84	32	11		1,310	272			0	20.9	0.0	5.0	62.0
Oct 13			63	58	27	2		1,030	202			0	20.6	0.0	5.0	62.0
Oct 14			51	47	28	4		1,229	270			0	26.5	0.0	5.0	62.0
Oct 15			88	78	88	9		1,769	401			0	27.4	0.0	5.0	61.0
Oct 16			45	39	42	4		871	211			0	23.0	0.0	5.0	61.0
Oct 17			39	52	70	9		1,245	312			1	25.6	0.0	5.0	61.0
Oct 18			68	39	46	11		982	226			-1	20.2	0.0	5.0	60.0
Oct 19			58	48	49	7		918	218			0	19.8	0.0	5.0	60.0
Oct 20			36	34	31	5		728	175			0	24.0	0.0	4.5	61.0
Oct 21			26	25	24	6		560	147			0	13.2	0.0	4.5	61.0
Oct 22			33	33	38	2		674	184			0	20.4	0.0	4.5	61.0
Oct 23			37	53	29	2		860	267			0	20.5	0.0	4.5	60.0
Oct 24			28	46	20	1		592	150			0	21.6	0.0	4.5	60.0
Oct 25			30	35	23	0		672	165			1	22.8	0.0	4.5	60.0
Oct 26			12	20	16	1		568	182			0	23.4	0.0	4.5	60.0
Oct 27			17	12	6	1		265	93			0	18.6	0.0	4.5	60.0
Oct 28			20	19	12	1		222	70			0	22.2	0.0	4.5	60.0
Oct 29			15	18	6	1		453	127			0	22.3	0.0	4.5	59.0
Oct 30			16	13	6	0		240	59			0	25.4	0.0	4.5	59.0
Oct 31			24	16	2	1		222	61			0	25.5	0.0	4.5	59.0
TOTAL			2,344	2,637	1,265	181		41,343	9,091			1				
AVG.			76	85	41	6		1,334	293			0	21.0	0.0	4.8	61.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	66,115	6,266
SUMMER	12,460	2,344
FALL	33,090	15,038
TOTAL	111,665	23,648

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	
TOTALS TO DATE					
	2,804	489	1,024	94,196	21,817

BULL TROUT	LAMPREY	
TOTALS TO DATE		
	5	240

TABLE 109
DISCHARGE AND WATER QUALITY DATA
LOWER MONUMENTAL PROJECT 2016

NOVEMBER					DECEMBER				
DATE	DISCH	SPILL	TURBIDITY		DATE	DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Nov 1	23.4	0.0	4.5	59.0	Dec 1	18.9	0.0	4.0	49.0
Nov 2	29.7	0.0	4.5	59.0	Dec 2	21.6	0.0	4.0	49.0
Nov 3	29.5	0.0	4.5	58.0	Dec 3	21.3	0.0	4.0	48.0
Nov 4	24.9	0.0	4.5	57.5	Dec 4	17.0	0.0	4.0	48.0
Nov 5	28.2	0.0	4.5	57.5	Dec 5	19.4	0.0	4.0	47.0
Nov 6	22.7	0.0	4.0	57.0	Dec 6	19.2	0.0	4.0	47.0
Nov 7	20.4	0.0	4.0	57.0	Dec 7	20.4	0.0	4.0	47.0
Nov 8	25.0	0.0	4.0	57.0	Dec 8	21.0	0.0	4.0	47.0
Nov 9	24.5	0.0	4.0	57.0	Dec 9	22.9	0.0	4.0	47.0
Nov 10	20.2	0.0	4.0	57.0	Dec 10	18.9	0.0	4.5	45.0
Nov 11	26.1	0.0	4.0	56.0	Dec 11	13.4	0.0	4.5	45.0
Nov 12	23.5	0.0	4.0	56.0	Dec 12	16.1	0.0	5.0	45.0
Nov 13	12.5	0.0	4.0	55.0	Dec 13	23.1	0.0	5.0	44.0
Nov 14	19.7	0.0	4.0	55.0	Dec 14	21.0	0.0	5.0	44.0
Nov 15	22.6	0.0	4.0	54.0	Dec 15	24.2	0.0	5.0	44.0
Nov 16	21.0	0.0	4.0	54.0	Dec 16	17.9	0.0	5.0	43.0
Nov 17	22.3	0.0	4.0	54.0	Dec 17	19.3	0.0	5.0	43.0
Nov 18	20.6	0.0	4.0	54.0	Dec 18	23.1	0.0	5.0	43.0
Nov 19	28.7	0.0	4.0	54.0	Dec 19	19.6	0.0	5.0	41.0
Nov 20	23.0	0.0	4.0	54.0	Dec 20	22.7	0.0	5.0	40.0
Nov 21	23.0	0.0	4.5	53.0	Dec 21	23.0	0.0	5.0	40.0
Nov 22	23.1	0.0	4.0	52.0	Dec 22	21.7	0.0	5.0	40.0
Nov 23	22.1	0.0	4.0	52.0	Dec 23	24.7	0.0	5.0	40.0
Nov 24	26.8	0.0	4.0	52.0	Dec 24	24.7	0.0	5.0	40.0
Nov 25	18.1	0.0	4.0	52.0	Dec 25	11.6	0.0	4.5	39.0
Nov 26	27.6	0.0	4.0	52.0	Dec 26	18.0	0.0	4.5	39.0
Nov 27	17.5	0.0	4.0	51.0	Dec 27	18.3	0.0	4.5	39.0
Nov 28	19.7	0.0	4.0	51.0	Dec 28	22.7	0.0	4.5	39.0
Nov 29	23.7	0.0	4.0	51.0	Dec 29	24.2	0.0	4.5	39.0
Nov 30	19.1	0.0	4.0	50.0	Dec 30	21.0	0.0	4.5	39.0
					Dec 31	20.4	0.0	4.5	38.5
AVG.	23.0	0.0	4.1	54.6	AVG.	20.4	0.0	4.6	43.2

TABLE 110
YEARLY TOTALS OF SALMONIDS COUNTED OVER
LOWER MONUMENTAL DAM
1969 - 2016

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
Total	3,490,381	4,995,072	16,289	75,193	8,576,935
10-Year Average	159,674	166,263	1,119	4,852	331,909

*Jacks included

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

TABLE 111
MONTHLY COUNT OF CHINOOK SALMON
LOWER MONUMENTAL DAM
1969-2016

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
Total	2	0	60	400,242	1,354,576	678,920	228,201	77,701	611,617	136,194	1,838	30	3,489,381
10-Year Average				6,604	59,560	29,697	8,191	5,285	43,308	6,994			159,674

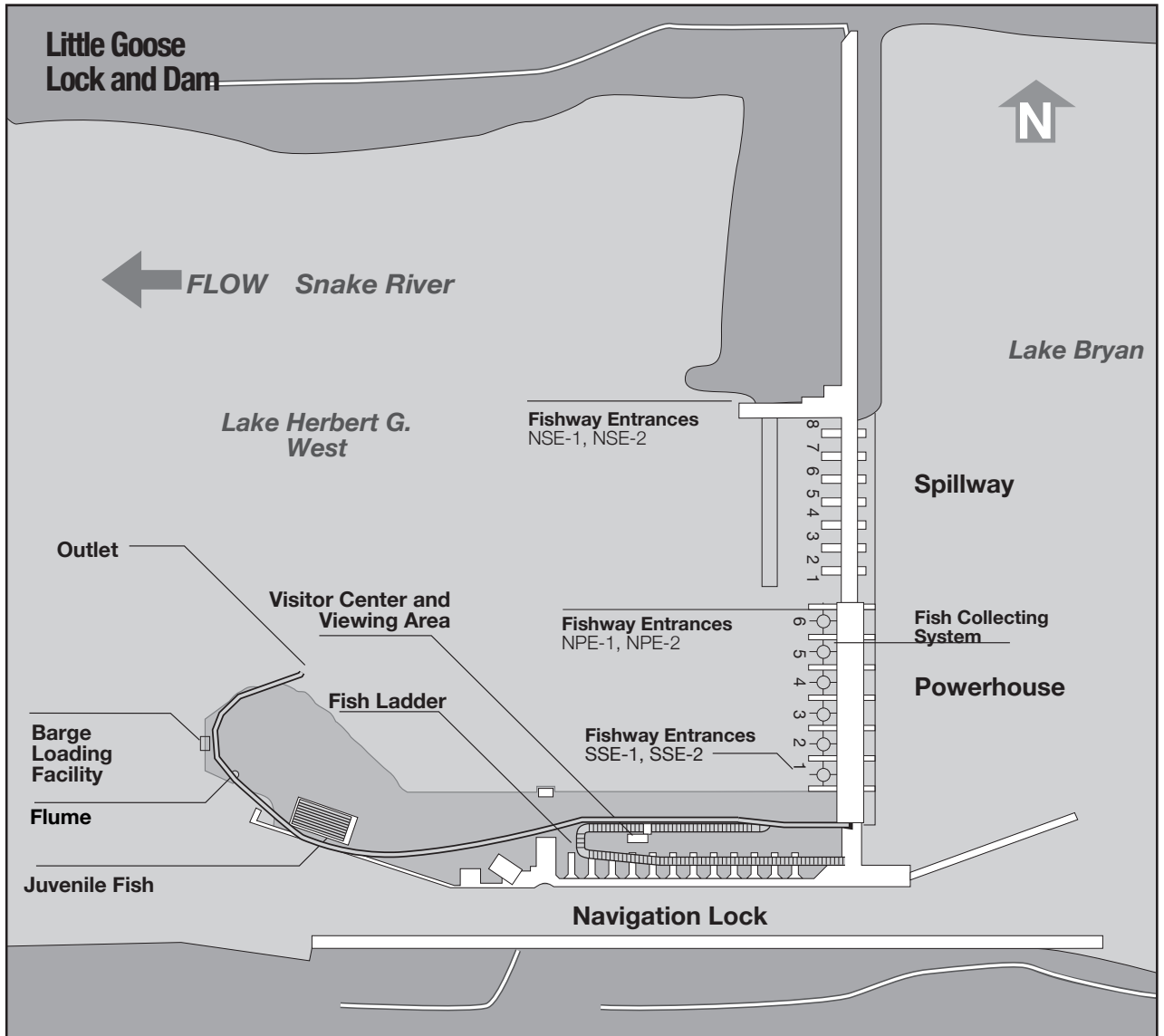
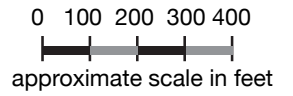
*Jacks included
2001-2004 and 2014 - 2015 extended season video counts are included.

TABLE 112
MONTHLY COUNT OF STEELHEAD
LOWER MONUMENTAL DAM
1969 - 2016

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
Total	5,252	8,850	18,442	113,327	22,387	19,771	217,572	434,213	2,339,584	1,741,006	58,017	16,651	4,995,072
10-Year Average				2,652	354	769	8,116	16,773	82,944	53,024			166,263

Note - Counts include 2001-04 and 2014 - 2016 extended season video counts.

Plate 8 Little Goose Lock and Dam



LITTLE GOOSE DAM

FISH COUNTING SCHEDULE

01 January – 29 February	No counting
01 March – 31 March	Video counting daily from 0400-2000 hours PST
01 April – 31 October	Visual counting daily from 0400-2000 hours PST
01 November – 31 December	Video counting daily from 0400-2000 hours PST

FISH LADDER OPERATING SCHEDULE

January 01-03	Ladder in service
04 January	Ladder dewatered for annual maintenance
22 February – 03 January	Ladder in service

FISHWAY ACTIVITIES

Adult fishways were inspected for proper operating criteria on average three times per week during fish passage season.

As in previous years water temperature in the ladder at several points was recorded on an hourly basis in an ongoing trend study in support of safe fish passage.

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

Auxiliary fish pump 1 was sent out for repairs, but complications with the shaft alignment prevented it from being in service during 2015. Fish pumps 2 and 3 were operated at higher RPMs during 2016. Fish pump #1 returned to service on August 02. From August 02 to January 03 all three pumps were running.

Collection channel subsurface water velocities were measured monthly using a hydrologic current 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.

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. The fish ladder water supply is gravity fed from the forebay and is representative of river conditions.

Fish ladder cooling pumps were installed for the 2016 season. Three pumps were installed at the ladder exit and pumped cooler water from the bottom of the reservoir into the ladder exit. Pumps ran from July 01 to September 09.

Normandeau Associates Inc. 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.

TABLE 113

MONTHLY TOTALS OF SALMONIDS, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LITTLE GOOSE DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*			4	1,201	56,569	18,814	5,413	6,530	34,090	5,871	664	3	129,159
STEELHEAD			2,077	1,151	181	252	2,751	3,278	36,658	43,067	5267	722	95,404
SOCKEYE						110	810	28	13	1	0	0	962
COHO								1	1,132	1,259	126		2,518
PINK													0
TOTAL			2,081	2,352	56,750	19,176	8,974	9,837	71,893	50,198	6,057	725	228,043
LAMPREY					-1	1	91	103	-3	1			192
STURGEON													0
BULL TROUT				4	10	3							17

*Jacks included

TABLE 114

DISCHARGE AND WATER QUALITY DATA
LITTLE GOOSE PROJECT 2016

JANUARY					FEBRUARY				
DATE	DISCH KCFS	SPILL KCFS	TURBIDITY		DATE	DISCH KCFS	SPILL KCFS	TURBIDITY	
			SECCHI	DEG F				SECCHI	DEG F
Jan 1	21.1	0.0			Feb 1	33.7	0.0		
Jan 2	23.7	0.0			Feb 2	29.0	0.0		
Jan 3	23.0	0.0			Feb 3	25.9	0.0		
Jan 4	19.8	0.0			Feb 4	20.5	0.0		
Jan 5	24.8	0.0			Feb 5	25.9	0.0		
Jan 6	24.3	0.0			Feb 6	19.5	0.0		
Jan 7	26.2	0.0			Feb 7	22.8	0.0		
Jan 8	24.8	0.0			Feb 8	22.8	0.0		
Jan 9	24.2	0.0			Feb 9	20.4	0.0		
Jan 10	23.5	0.0			Feb 10	21.7	0.0		
Jan 11	27.5	0.0			Feb 11	21.0	0.0		
Jan 12	20.6	0.0			Feb 12	23.7	0.0		
Jan 13	20.3	0.0			Feb 13	28.9	0.0		
Jan 14	24.6	0.0			Feb 14	24.0	0.0		
Jan 15	26.0	0.0			Feb 15	34.1	0.0		
Jan 16	23.5	0.0			Feb 16	54.9	0.0		
Jan 17	23.8	0.0			Feb 17	56.5	0.0		
Jan 18	24.5	0.0			Feb 18	56.0	0.0		
Jan 19	25.3	0.0			Feb 19	53.8	0.0		
Jan 20	25.4	0.0			Feb 20	58.2	0.0		
Jan 21	30.7	0.0			Feb 21	49.2	0.0		
Jan 22	26.9	0.0			Feb 22	47.6	3.6		
Jan 23	28.5	0.0			Feb 23	46.5	0.0		
Jan 24	36.2	0.0			Feb 24	39.7	0.0		
Jan 25	34.3	0.0			Feb 25	38.6	0.0		
Jan 26	33.2	0.0			Feb 26	32.9	0.0		
Jan 27	31.1	0.0			Feb 27	38.4	0.0		
Jan 28	30.5	0.0			Feb 28	42.9	0.0		
Jan 29	33.6	0.0			Feb 29	40.6	0.0		
Jan 30	33.2	0.0							
Jan 31	35.0	0.0							
AVG.	26.8	0.0			AVG.	35.5	0.1		

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

TABLE 115

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

LITTLE GOOSE PROJECT - FISH COUNTS

MARCH 2016

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	
Mar 1	0			0				58	29				37.0	0.0			
Mar 2	0			0				51	31				37.6	0.0	43.3	3.5	
Mar 3	0			0				37	13				33.7	0.0	42.9	3.7	
Mar 4	0			0				34	14				40.8	0.0			
Mar 5	1			1				103	54				45.2	0.0			
Mar 6	0			0				101	50				52.4	0.0			
Mar 7	0			0				29	10				50.1	0.0	43.3	4.6	
Mar 8	0			0				34	15				57.9	0.0	43.6	4.6	
Mar 9	0			0				56	28				56.0	0.0	43.8	5.0	
Mar 10	0			0				69	38				56.9	2.4			
Mar 11	0			0				145	75				60.8	0.0			
Mar 12	0			0				38	16				57.2	0.0			
Mar 13	0			0				89	46				53.2	0.0			
Mar 14	0			0				50	29				61.3	0.0			
Mar 15	0			0				68	48				60.4	0.0	45.2	3.9	
Mar 16	0			0				71	41				53.9	0.0	45.2	3.7	
Mar 17	0			0				80	38				54.7	0.0	45.1	3.6	
Mar 18	0			0				27	7				57.3	0.0			
Mar 19	0			0				116	56				57.0	0.0			
Mar 20	0			0				94	42				57.1	0.0			
Mar 21	0			0				82	37				56.3	0.0	46.0	3.4	
Mar 22	1			0				63	37				58.7	0.0			
Mar 23	0			0				70	34				67.5	0.0	45.7	2.9	
Mar 24	0			0				44	32				67.7	0.0	45.8	2.8	
Mar 25	1			0				83	36				71.0	0.0			
Mar 26	0			0				68	43				65.1	0.0			
Mar 27	0			0				74	50				63.2	0.0			
Mar 28	0			0				57	31				59.2	0.0	47.3	4.0	
Mar 29	0			0				64	22				58.2	0.0	48.5	2.8	
Mar 30	0			0				66	20				55.5	0.0	48.5	2.8	
Mar 31	0			0				56	20				54.9	0.0			
TOTAL	3			1				2,077	1,042								
AVG.	0			0				67	34				55.4	0.1	45.3	3.7	

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

TABLE 116

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

LITTLE GOOSE PROJECT - FISH COUNTS

APRIL 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped		PINK	BULL		DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE	STEELHEAD		STEELHEAD	TROUT			LAMPREY	KCFS
Apr 1	1			0			41		28			0	57.1	0.0		
Apr 2	2			0			41		29			0	59.5	0.0		
Apr 3	1			0			27		14			0	62.8	18.7	48.9	4.7
Apr 4	1			0			50		25			0	64.8	19.3		
Apr 5	2			0			55		30			0	67.2	20.2	48.7	3.4
Apr 6	4			0			42		24			0	63.7	19.1		
Apr 7	4			0			33		20			0	65.5	19.5	49.8	4.8
Apr 8	5			0			42		24			0	66.7	20.0		
Apr 9	5			1			51		41			0	69.9	21.0		
Apr 10	4			0			58		35			0	80.3	24.2		
Apr 11	0			0			51		40			0	89.0	26.7	52.5	5.6
Apr 12	4			0			53		41			0	92.4	27.7	50.9	3.4
Apr 13	10			0			57		43			1	96.9	29.1		
Apr 14	8			0			60		46			1	100.0	30.0	52.1	3.5
Apr 15	20			0			78		60			1	102.6	30.9		
Apr 16	17			0			40		28			0	98.7	29.7		
Apr 17	16			0			36		25			0	90.4	27.1	52.0	3.8
Apr 18	20			0			42		37			0	89.1	26.7		
Apr 19	18			0			35		29			0	88.3	26.3	50.3	2.8
Apr 20	19			0			30		24			0	87.6	26.3		
Apr 21	35			0			30		22			0	96.7	28.9	51.8	3.8
Apr 22	50			0			47		37			0	101.8	30.5		
Apr 23	84			0			35		25			0	111.9	38.1		
Apr 24	83			2			24		13			0	123.9	37.2		
Apr 25	122			1			30		23			1	118.9	35.7	53.3	4.0
Apr 26	97			1			28		23			0	106.2	31.9	52.6	2.8
Apr 27	100			4			12		12			0	101.6	30.4		
Apr 28	107			5			14		13			0	101.9	30.5	51.8	2.9
Apr 29	155			6			2		1			0	92.3	27.7		
Apr 30	180			7			7		2			0	90.6	27.2		
TOTAL	1,174			27			1,151		814			4				
AVG.	39			1			38		27			0	87.9	25.3	51.2	3.8

*April 2-Oct 31 water temps collected from juvenile fish collection channel.

Visual fish counting started April 1.

TABLE 117

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

MAY 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER	FALL								TROUT	LAMPREY			SECCHI	DEG F
May 1	119			2				8	8		0	0	81.8	24.4	51.7	3.3
May 2	200			4				7	6		0	0	82.3	24.5		
May 3	515			13				12	11		0	0	83.2	25.0	52.7	3.3
May 4	516			4				15	10		0	0	79.2	23.7		
May 5	562			16				8	7		0	0	91.5	27.4	53.0	3.7
May 6	629			11				9	5		0	0	97.4	29.1		
May 7	1,796			94				16	11		0	0	106.0	31.8		
May 8	2,652			136				12	10		0	0	112.8	31.1	56.6	4.7
May 9	4,382			232				9	8		0	0	117.3	29.0		
May 10	5,858			262				37	12		0	0	110.8	29.5	56.5	3.6
May 11	4,021			244				18	7		0	0	93.8	28.1		
May 12	3,911			286				2	2		1	0	89.6	26.9	55.6	3.2
May 13	2,083			152				1	0		1	0	82.8	24.8		
May 14	2,690			204				4	4		1	0	86.6	26.0		
May 15	1,176			151				4	4		0	0	93.8	28.1	---	3.5
May 16	826			163				2	1		0	0	97.3	29.2		
May 17	2,804			302				1	1		0	0	91.4	27.4	53.5	2.8
May 18	1,498			173				3	2		0	0	85.1	25.5		
May 19	1,259			210				2	1		0	0	89.1	26.8	55.5	3.8
May 20	1,756			304				0	0		1	0	102.1	30.8	55.3	3.2
May 21	1,330			304				1	1		1	0	90.5	27.1		
May 22	566			150				1	1		0	0	85.9	25.8		
May 23	607			178				1	1		1	0	80.6	24.1		
May 24	1,529			274				0	0		2	0	81.0	24.3	57.1	3.8
May 25	3,475			304				0	0		1	0	76.2	22.8		
May 26	1,396			203				4	2		0	0	73.8	22.1	56.0	3.9
May 27	1,309			212				1	1		0	0	65.8	19.8		
May 28	820			154				1	0		1	0	68.5	20.4		
May 29	330			71				1	1		0	0	65.7	19.8	56.3	4.2
May 30	462			102				0	0		0	0	62.9	18.8		
May 31	487			90				1	1		0	-1	65.0	19.5	57.7	4.8
TOTAL	51,564			5,005				181	118		10	-1				
AVG.	1,663			161				6	4		0	0	86.8	25.6	55.2	3.7
RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK						STEELHEAD	unclipped STEELHEAD		BULL TROUT	LAMPREY				
SPRING	52,738	5,032						1,332	932		14	-1				

TABLE 118

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

LITTLE GOOSE PROJECT - FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL													
Jun 1	506			85			0	0	0		1	-1	63.9	19.2		
Jun 2	520			66			0	-1	-1		0	1	63.1	18.9	59.7	5.1
Jun 3	1,033			149			0	2	1		0	0	61.4	18.3		
Jun 4	703			112			0	1	1		0	2	62.4	18.7		
Jun 5	1,079			122			0	0	0		2	0	66.6	19.9	64.9	4.9
Jun 6	866			91			0	2	1		0	0	68.3	20.4		
Jun 7	648			70			0	0	0		0	0	72.5	21.6		
Jun 8	674			103			1	4	4		0	0	71.1	21.4		
Jun 9	526			83			0	4	4		0	0	72.6	21.9	63.6	4.7
Jun 10	284			32			0	2	1		0	0	68.3	20.5		
Jun 11	857			149			0	3	2		0	0	57.4	17.2		
Jun 12	589			92			0	1	1		0	0	49.3	14.9	64.9	6.0
Jun 13	341			29			0	4	4		0	0	52.5	15.7		
Jun 14	650			85			0	4	2		0	-1	52.2	15.4	65.0	5.1
Jun 15	581			64			0	6	4		0	0	53.5	16.0		
Jun 16		622		72			0	5	5		0	0	50.2	15.0	64.4	5.0
Jun 17		384		56			0	8	7		0	0	47.7	14.3		
Jun 18		424		66			2	6	4		0	0	46.3	13.9		
Jun 19		425		88			0	10	6		0	0	46.5	14.0	63.8	4.5
Jun 20		620		108			1	3	2		0	1	41.3	12.4		
Jun 21		402		80			1	10	6		0	0	43.5	13.1	63.0	4.8
Jun 22		709		85			4	11	10		0	0	40.9	12.3		
Jun 23		624		104			4	11	6		0	0	42.4	12.8		
Jun 24		469		72			2	22	11		0	0	36.5	10.8		
Jun 25		469		83			19	11	7		0	0	32.8	9.9		
Jun 26		410		77			12	24	23		0	0	33.9	10.2	62.8	5.7
Jun 27		239		70			14	14	8		0	0	35.7	10.7		
Jun 28		257		53			13	44	25		0	-1	41.7	12.6	66.3	4.8
Jun 29		149		42			5	21	11		0	0	40.0	12.1		
Jun 30		308		58			32	20	14		0	0	38.3	11.4	67.0	6.0
TOTAL	9,857	6,511		2,446			110	252	169		3	1				
AVG.	657	434		82			4	8	6		0	0	51.8	15.5	64.1	5.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,595	6,364
SUMMER	6,511	1,114
TOTALS	69,106	7,478

SOCKEYE	STEELHEAD	unclipped STEELHEAD
110	1,584	1,101

BULL TROUT	LAMPREY
17	0

TABLE 119

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

LITTLE GOOSE PROJECT - FISH COUNTS

JULY 2016

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER													
Jul 1		275	68			55	41	23			1	39.1	11.7		
Jul 2		254	62			44	30	13			1	39.7	11.9		
Jul 3		252	47			68	39	23			0	38.1	11.4	68.5	5.7
Jul 4		281	28			42	60	35			1	39.5	11.8		
Jul 5		164	36			61	34	22			1	30.7	9.1	68.9	5.7
Jul 6		250	50			72	62	38			1	29.2	10.8		
Jul 7		172	34			48	21	20			4	33.4	10.8	69.1	4.9
Jul 8		149	13			48	40	23			2	28.2	8.5		
Jul 9		142	29			48	55	35			2	30.7	10.8		
Jul 10		140	12			36	22	11			1	28.4	10.8	68.2	6.0
Jul 11		744	60			65	146	86			2	31.6	10.7	68.1	6.0
Jul 12		334	29			40	115	59			2	35.7	10.7	68.4	4.8
Jul 13		190	37			55	117	74			6	35.3	10.6		
Jul 14		140	41			18	139	71			1	33.6	10.1	67.8	6.0
Jul 15		137	26			11	128	78			6	33.8	10.0	67.8	6.0
Jul 16		91	14			16	100	44			0	33.5	10.1		
Jul 17		103	19			13	126	61			10	27.5	8.2	68.2	6.0
Jul 18		52	8			16	95	42			4	30.6	8.8		
Jul 19		61	11			4	63	28			4	31.9	10.6		
Jul 20		97	10			5	104	48			5	32.0	10.6		
Jul 21		44	8			5	88	46			0	31.7	10.6	68.5	3.9
Jul 22		61	6			2	127	62			2	31.4	10.5		
Jul 23		104	16			5	133	71			5	27.8	10.6		
Jul 24		71	8			11	163	86			6	30.0	9.0	69.2	6.0
Jul 25		47	7			1	90	40			0	30.8	10.5	70.3	6.0
Jul 26		37	5			8	110	40			7	30.2	10.5		
Jul 27		53	6			2	71	42			2	30.2	10.5		
Jul 28		76	7			4	119	53			4	28.6	10.6	69.1	6.0
Jul 29		64	1			2	91	44			5	28.2	10.5		
Jul 30		64	2			4	126	47			4	26.9	10.5		
Jul 31		60	4			1	96	44			2	27.0	8.9	67.5	6.0
TOTAL		4,709	704			810	2,751	1,409			91				
AVG.		152	23			26	89	45			3	31.8	10.3	68.5	5.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,595	6,364
SUMMER	11,220	1,818
TOTAL	73,815	8,182

SOCKEYE	STEELHEAD	unclipped STEELHEAD
920	4,335	2,510

BULL TROUT	LAMPREY
17	91

TABLE 120

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

LITTLE GOOSE PROJECT - FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	TOTAL SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TURBIDITY DEG F
	SPRING	SUMMER	FALL								TROUT	LAMPREY				
Aug 1		84		4	0		2	118	48				25.3	8.9		
Aug 2		67		6	0		0	122	50				25.5	8.9	69.8	4.6
Aug 3		84		8	0		2	116	50				25.1	8.9	69.6	
Aug 4		67		10	0		12	117	56				24.6	8.9	69.6	4.2
Aug 5		80		8	0		0	148	59				26.1	8.8		
Aug 6		116		7	0		0	109	47			10	26.1	8.9		
Aug 7		95		11	0		0	153	77			7	25.2	8.9	69.0	6.0
Aug 8		62		1	0		1	163	60			6	24.6	8.9		
Aug 9		89		5	0		0	162	61			2	25.1	8.9		
Aug 10		140		4	0		1	248	78			7	24.8	9.0	69.2	4.2
Aug 11		80		6	0		1	113	23			4	24.5	8.9	68.5	6.0
Aug 12		71		11	0		1	88	38			6	24.2	8.8		
Aug 13		88		10	0		0	110	55			4	24.3	8.8		
Aug 14		30		5	0		0	86	38			0	22.1	8.8	71.5	6.0
Aug 15		107		5	0		1	40	10			2	19.5	8.9		
Aug 16			180	14	0		0	82	36			6	27.6	7.2	70.1	6.0
Aug 17			121	6	0		1	67	24			5	26.3	8.8		
Aug 18			241	18	0		0	42	8			1	24.0	13.5	68.5	4.7
Aug 19			187	16	0		0	96	34			1	29.3	8.9		
Aug 20			82	8	0		0	43	12			2	23.4	10.7		
Aug 21			232	31	0		0	113	29			5	22.6	7.4	70.5	6.0
Aug 22			209	18	0		0	70	28			2	21.4	7.3		
Aug 23			341	41	0		0	104	20			2	21.3	7.3	68.4	6.0
Aug 24			410	52	1		0	86	32			0	20.2	7.3		
Aug 25			424	62	0		6	98	37			1	19.9	7.3	70.0	6.0
Aug 26			372	59	0		0	95	31			0	20.7	7.3		
Aug 27			348	67	0		0	101	25			1	23.2	7.3		
Aug 28			342	76	0		0	114	31			2	22.5	7.3	67.9	6.0
Aug 29			264	60	1		0	92	28			2	20.3	7.3		
Aug 30			217	91	0		0	71	22			-1	19.9	7.3		
Aug 31			449	131	-1		0	111	40			1	20.1	7.3		
TOTAL		1,260	4,419	851	1		28	3,278	1,187			103				
AVG.		84	276	27	0		1	106	38			3	23.5	8.5	69.4	5.5

RUN YEAR	CHINOOK		COHO ADULT	TOTAL			BULL	
	ADULT	JACK		SOCKEYE	STEELHEAD	unclipped STEELHEAD	TROUT	LAMPREY
TOTALS TO DATE								
SPRING	62,595	6,364	1	948	7,613	3,697	17	194
SUMMER	12,480	1,919						
FALL	4,419	750						
TOTALS	79,494	9,033						

TABLE 121

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

LITTLE GOOSE PROJECT - FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	PINK	BULL	LAMPREY	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE		STEELHEAD		STEELHEAD	TROUT	KCFS	
Sep 1			389	94	0	0	110	36			-7	24.2	0.0	67.4	3.6
Sep 2			472	115	0	1	201	73			4	22.4	0.0		
Sep 3			473	137	0	0	189	64			1	19.6	0.0		
Sep 4			576	182	4	0	157	49			0	17.1	0.0	67.8	4.0
Sep 5			544	191	1	0	174	49			1	15.7	0.0		
Sep 6			296	89	0	0	82	26			-4	20.3	0.1		
Sep 7			738	250	0	2	210	50			-2	17.0	0.0		
Sep 8			1,330	344	4	0	399	95			0	21.2	0.0	66.7	3.6
Sep 9			1,489	388	4	2	471	124			-2	20.6	0.0		
Sep 10			1,240	271	0	1	456	80			0	14.7	0.0		
Sep 11			1,140	386	1	0	608	126			1	18.3	0.0	66.7	6.0
Sep 12			1,290	421	0	0	723	146			0	15.3	0.0		
Sep 13			1,178	469	0	2	1,096	224	13		2	21.2	0.0	66.3	4.8
Sep 14			1,795	476	7	5	1,326	266	0		0	24.5	0.0		
Sep 15			1,429	414	6	6	1,328	258	0		-2	23.6	0.0	66.3	5.4
Sep 16			1,679	460	5	1	1,300	268	0		0	29.9	0.0		
Sep 17			1,315	212	10	1	1,421	276	0		0	18.4	0.0		
Sep 18			876	205	28	11	1,826	355	0		4	15.5	0.0	65.3	4.9
Sep 19			1,213	312	40	8	1,966	348	0		1	23.0	0.0		
Sep 20			1,110	406	67	32	2,625	481	0		0	17.4	0.0		
Sep 21			1,042	378	58	31	2,151	413	0		0	18.3	0.0	64.9	4.2
Sep 22			664	248	67	20	1,971	341	0		1	15.4	0.0	64.6	5.3
Sep 23			1,122	394	97	29	2,757	475	0		1	15.3	0.0		
Sep 24			524	286	97	35	2,447	454	0		0	15.8	0.0		
Sep 25			431	174	86	16	2,246	416	0		-1	13.0	0.0	64.1	5.0
Sep 26			311	193	66	26	1,591	301	0		-1	19.1	0.0		
Sep 27			391	160	73	16	1,670	348	0		0	17.4	0.0		
Sep 28			268	102	38	4	1,694	284	0		0	17.9	0.0		
Sep 29			299	137	44	10	1,626	295	0		1	17.0	0.0	63.5	5.8
Sep 30			370	202	50	20	1,837	319	0		-1	16.2	0.0		
TOTAL			25,994	8,096	853	279	13	36,658	7,040		-3				

AVG.	866	270	28	9	0	1,222	235	0	18.8	0.0	65.8	4.8
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,595	6,364
SUMMER	12,480	1,919
FALL	30,413	8,846
TOTALS	105,488	17,129

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
854	279	961	44,271	10,737

BULL TROUT	LAMPREY
17	191

TABLE 122

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

LITTLE GOOSE PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL		DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TEMP DEG F
	SPRING	SUMMER	FALL								TROUT	LAMPREY				
Oct 1			354	154	47	18	0	2,248	390			-1	12.8	0.0		
Oct 2			301	160	25	16	0	2,816	524			0	13.4	0.0	62.9	6.0
Oct 3			313	224	47	17	0	2,787	538			0	17.8	0.0		
Oct 4			184	132	40	7	0	2,351	438			0	17.6	0.0		
Oct 5			313	196	59	7	0	3,224	613			0	21.4	0.0		
Oct 6			198	140	55	4	0	2,408	493			0	22.3	0.0	63.0	5.4
Oct 7			110	67	36	18	1	2,638	485			1	18.8	0.0		
Oct 8			161	88	66	12	0	2,802	523			1	18.8	0.0		
Oct 9			77	40	19	7	0	1,600	276			0	21.8	0.0	62.8	5.2
Oct 10			92	62	34	6	0	1,643	275			-1	23.3	0.0		
Oct 11			139	97	34	14	0	1,769	391			0	21.1	0.0	62.4	4.8
Oct 12			112	90	34	11	0	1,351	301			1	21.3	0.0		
Oct 13			77	58	16	13	0	903	170			0	26.0	0.0	62.3	3.8
Oct 14			94	106	52	11	0	1,523	281			-1	25.7	0.0		
Oct 15			91	294	37	10	0	1,427	293			1	23.2	0.0		
Oct 16			107	73	58	12	0	1,367	312			0	22.5	0.0	61.8	5.5
Oct 17			112	88	53	11	0	1,230	263			0	21.5	0.0	61.7	4.8
Oct 18			78	59	55	23	0	1,568	340			0	20.6	0.0		
Oct 19			80	49	46	11	0	1,124	226			0	23.6	0.0		
Oct 20			36	19	28	4	0	759	191			0	12.8	0.0	60.9	6.0
Oct 21			38	34	13	4	0	542	92			1	20.3	0.0	60.9	5.0
Oct 22			49	22	19	7	0	584	82			0	19.4	0.0		
Oct 23			44	37	30	11	0	744	145			0	22.2	0.0	60.4	6.0
Oct 24			38	30	22	10	0	702	136			-1	22.3	0.0		
Oct 25			58	37	14	7	0	570	103			0	22.6	0.0		
Oct 26			44	43	12	4	0	587	96			0	18.1	0.0		
Oct 27			28	14	6	2	0	240	43			0	22.5	0.0	57.3	4.5
Oct 28			17	17	4	6	0	481	120			0	23.2	0.0		
Oct 29			20	13	2	2	0	348	110			0	25.4	0.0		
Oct 30			16	14	5	1	0	311	96			0	25.0	0.0	58.6	5.8
Oct 31			13	20	5	0	0	420	125			0	22.6	0.0		
TOTAL			3,394	2,477	973	286	1	43,067	8,471			1				

AVG.	109	80	31	9	0	1,389	273	0	21.0	0.0	61.3	5.2
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,595	6,364
SUMMER	12,480	1,919
FALL	33,807	11,323
TOTALS	108,882	19,606

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD
1,827	565	962	87,338	19,208

BULL TROUT	LAMPREY
17	192

TABLE 123

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

LITTLE GOOSE PROJECT - FISH COUNTS

NOVEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	TOTAL	unclipped	PINK	BULL	LAMPREY	DISCH	SPILL	TURBIDITY	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		STEELHEAD	STEELHEAD		TROUT		KCFS	KCFS	SECCHI	
Nov 1			40	5	4	4		323	99				27.1	0.0		
Nov 2			72	22	13	11		287	56				31.6	0.0	57.2	5.0
Nov 3			46	20	13	5		310	83				22.8	0.0	56.9	6.0
Nov 4			32	17	4	3		304	88				27.2	0.0		
Nov 5			24	16	10	1		326	99				19.6	0.0		
Nov 6			27	9	10	2		269	78				22.0	0.0	55.5	6.0
Nov 7			23	19	4	5		265	63				24.7	0.0	55.5	5.9
Nov 8			15	8	2	5		233	70				24.8	0.0	55.1	6.0
Nov 9			11	6	3	0		236	73				20.4	0.0		
Nov 10			16	18	2	2		249	79				25.7	0.0		
Nov 11			10	4	0	3		163	42				22.8	0.0		
Nov 12			12	8	1	1		144	38				14.3	0.0		
Nov 13			11	5	1	0		219	59				18.9	0.0		
Nov 14			5	3	1	0		119	33				22.1	0.0	54.5	6.0
Nov 15			17	2	2	1		134	35				19.5	0.0	54.6	5.2
Nov 16			6	3	0	3		193	56				22.1	0.0	54.0	5.4
Nov 17			16	3	0	2		104	33				21.3	0.0		
Nov 18			7	9	3	0		140	40				27.3	0.0		
Nov 19			2	1	0	0		93	33				21.5	0.0		
Nov 20			0	2	0	0		107	29				20.2	0.0		
Nov 21			3	1	1	0		136	35				21.3	0.0	52.0	5.8
Nov 22			66	1	1	1		85	24				21.3	0.0	51.9	5.6
Nov 23			6	1	0	0		135	36				26.4	0.0	51.2	5.9
Nov 24			1	0	1	1		138	33				18.0	0.0		
Nov 25			7	1	0	0		74	22				25.2	0.0		
Nov 26			3	1	0	0		115	41				17.9	0.0		
Nov 27			0	0	0	0		111	31				19.7	0.0		
Nov 28			1	-1	0	0		90	30				23.5	0.0	49.5	6.0
Nov 29			1	-1	0	0		92	32				18.8	0.0	49.5	6.0
Nov 30			1	0	0	0		73	25				18.1	0.0	49.0	6.0
TOTAL			481	183	76	50		5,267	1,495							
AVG.			16	6	3	2		176	50				22.2	0.0	53.3	5.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	BULL TROUT	LAMPREY
TOTALS TO DATE									
SPRING	62,595	6,364	1,827	565	962	87,338	19,208	17	192
SUMMER	12,480	1,919							
FALL	33,807	11,323							
TOTALS	108,882	19,606							

Note: November 1 - Dec 31 counts were from video tape. The counts are 16-hour counts and occurred between 0400-2000 PST. Visual counting ended October 31. Official Fall Chinook run ended October 31. November and December Chinook counts were not added to fall totals.

TABLE 124

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LITTLE GOOSE PROJECT - FISH COUNTS

DECEMBER 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	DEG F
	SPRING	SUMMER	FALL													
Dec 1			1	0				113	32				21.2	0.0		
Dec 2			0	0				55	17				20.0	0.0		
Dec 3			-1	2				47	5				17.4	0.0		
Dec 4			0	0				79	37				17.9	0.0		
Dec 5			0	1				67	22				16.2	0.0	47.5	5.8
Dec 6			0	0				54	16				20.6	0.0	47.1	6.0
Dec 7			0	0				35	11				19.8	0.0	46.5	6.0
Dec 8			0	0				47	15				23.5	0.0		
Dec 9			0	0				37	7				17.6	0.0		
Dec 10			0	0				30	9				14.6	0.0		
Dec 11			0	0				27	9				14.9	0.0		
Dec 12			0	0				13	3				21.1	0.0	44.1	6.0
Dec 13			0	0				18	7				21.2	0.0	43.7	6.0
Dec 14			0	0				5	3				23.2	0.0	43.2	6.0
Dec 15			0	0				9	6				17.5	0.0		
Dec 16			0	0				9	3				20.2	0.0		
Dec 17			0	0				6	3				21.2	0.0		
Dec 18			0	0				7	1				18.9	0.0		
Dec 19			0	0				2	1				20.8	0.0	40.8	6.0
Dec 20			0	0				7	4				22.3	0.1	40.5	6.0
Dec 21			0	0				5	2				19.2	0.1	40.8	6.0
Dec 22			0	0				3	1				23.4	0.0		
Dec 23			0	0				11	1				24.4	0.0		
Dec 24			0	0				5	1				13.1	0.0		
Dec 25			0	0				10	5				16.0	0.0		
Dec 26			0	0				6	5				16.3	0.0		
Dec 27			0	0				3	0				21.6	0.0	38.0	6.0
Dec 28			0	0				4	0				22.8	0.0	38.6	6.0
Dec 29			0	0				2	1				21.5	0.0	38.2	6.0
Dec 30			0	0				4	1				20.5	0.0		
Dec 31			0	0				2	1				18.7	0.0		
TOTAL			0	3				722	229							
AVG.			0	0				23	7				19.6	0.0	42.4	6.0

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,595	6,364
SUMMER	12,480	1,919
FALL	33,807	11,323
TOTALS	108,882	19,606

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	PINK	BULL TROUT	LAMPREY
1,827	565	962	87,338	19,208	0	17	192

Note: November 1 - Dec 31 counts were from video tape. The counts are 16-hour counts and occurred between 0400-2000 PST. Visual counting ended October 31. Official Fall Chinook run ended October 31. November and December Chinook counts were not added to fall totals.

TABLE 125

YEARLY TOTALS OF SALMONIDS COUNTED OVER
LITTLE GOOSE DAM
1970 - 1981, 1991 - 2016

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	129,159	95,404	962	2,518	228,043
Total	2,919,101	3,849,125	14,972	67,537	6,850,735
10-Yr Avg	152,855	153,898	1,060	4,882	312,693

*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 126

**MONTHLY COUNT OF CHINOOK SALMON
LITTLE GOOSE DAM; 1970-1981, 1991-2016**

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		4		1,201	56,569	18,814	5,413	6,530	34,090	5,871	664	3	129,159
Total	7			273,111	1,120,666	606,908	216,902	58,320	507,579	133,181	2,396	31	2,919,101
10-Year Average				4,298	55,872	30,809	9,438	4,281	39,216	8,874			152,855

**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.

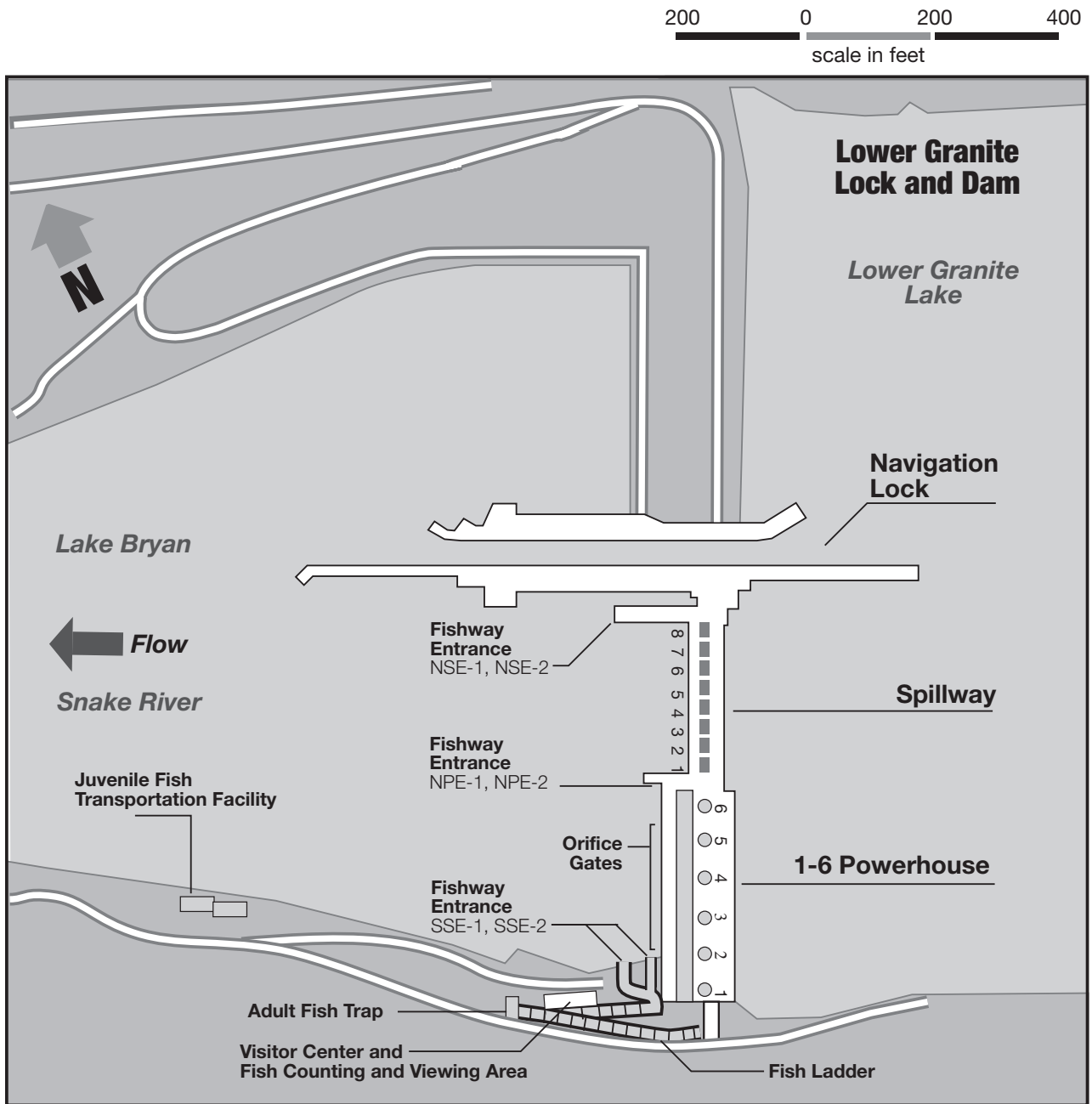
Includes 2016 extended season counts for March, November, and December 0400-2000 PST.

TABLE 127
 MONTHLY COUNT OF STEELHEAD
 LITTLE GOOSE DAM
 1970 - 1981, 1991 - 2016

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
Total	1,084	5,065	21,392	73,614	13,957	9,387	99,778	254,159	1,751,922	1,530,758	73,583	14,426	3,849,125
10-Year Average				2,640	374	320	3,994	10,791	77,434	57,538			153,898

** 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

FISH COUNTING SCHEDULE

1 Jan – 29 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 – 31 Aug	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 – 3 Jan	Ladder in service
4 Jan – 22 Feb	Ladder dewatered for annual maintenance
22 Mar – 31 Dec	Ladder in service

FISHWAY ACTIVITIES

Fish ladder water temperatures were monitored hourly at the ladder exit, diffuser 14, turn pool, and junction pool from June 1 – September 30. Project temperatures were also monitored with eight digital loggers activated during winter maintenance. Lower Granite permanent fish ladder temperature control system was installed during the 2015 – 2016 winter outage. The temperature control system was operated for testing from June 6 – 9 and remained in normal operation from June 9 – September 8.

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

The fish ladder AWS pumps were out of service for annual maintenance from January 2 – February 23. AWS Fish pump 1 outage was extended to February 25 for lower guide bearing replacement.

Lower Granite adult fish trap was operated March 3 – November 20. Fish ladder water temperatures did not impact adult trap operations this season. Adult fall Chinook were collected and transported by Nez Perce Tribe and WDFW August 18 – October 11 for hatchery broodstock. Emergency trapping and transport of adult Coho for Nez Perce run reconstruction occurred from September 22 to November 4.

The juvenile fish facility was operated for fish transport/bypass from March 21 – October 31. Secondary bypass occurred November 1 – November 17 to eliminate fish stranding on the dewatering incline screen during primary bypass operation. The juvenile collection gallery and facility were dewatered early for juvenile bypass/collection facility Phase 1 construction.

TABLE 128

MONTHLY TOTALS OF SALMONIDS, SHAD, LAMPREY, STURGEON, AND BULL TROUT COUNTED OVER LOWER GRANITE DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*			3	785	54,283	19,137	5,884	5,769	35,122	7,087	763	0	128,833
STEELHEAD			3,843	1,463	167	194	2,180	3,313	34,143	47,401	6,763	709	100,176
SOCKEYE						67	721	24	3	1			816
COHO*								1	1,122	1,781	265	1	3,170
PINK													0
TOTAL			3,846	2,248	54,450	19,398	8,785	9,107	70,390	56,270	7,791	710	232,995
SHAD					17	4,541	35,897	2,031					42,486
LAMPREY					-1	4	44	51	9	-1			106
STURGEON													0
BULL TROUT				1	1	5							7

*Jacks included

TABLE 129
DISCHARGE AND WATER DATA
LOWER GRANITE PROJECT 2016

JANUARY				FEBRUARY					
	DISCH	SPILL	TURBIDITY			DISCH	SPILL	TURBIDITY	
	KCFS	KCFS	SECCHI	DEG F		KCFS	KCFS	SECCHI	DEG F
Jan 1	22.9	0.0		39.3	Feb 1	33.8	0.0		39.4
Jan 2	23.3	0.0		39.1	Feb 2	28.6	0.0		39.6
Jan 3	22.7	0.0		38.7	Feb 3	26.8	0.0		39.6
Jan 4	19.9	0.0		37.9	Feb 4	23.5	0.0		39.5
Jan 5	24.6	0.0		37.7	Feb 5	26.0	0.0		39.5
Jan 6	26.5	0.0		37.5	Feb 6	19.9	0.0		39.5
Jan 7	27.1	0.0		37.2	Feb 7	24.2	0.0		39.3
Jan 8	27.1	0.0		37.0	Feb 8	22.5	0.0		39.3
Jan 9	23.9	0.0		36.6	Feb 9	21.8	0.0		39.1
Jan 10	23.5	0.0		36.5	Feb 10	21.6	0.0		39.1
Jan 11	26.3	0.0		36.7	Feb 11	21.6	0.0		39.1
Jan 12	23.9	0.0		37.2	Feb 12	22.9	0.0		39.2
Jan 13	19.5	0.0		38.0	Feb 13	24.5	0.0		39.5
Jan 14	25.7	0.0		38.6	Feb 14	27.9	0.0		39.9
Jan 15	27.0	0.0		38.7	Feb 15	27.4	0.0		40.2
Jan 16	23.9	0.0		38.6	Feb 16	35.1	0.0		40.4
Jan 17	24.8	0.0		38.7	Feb 17	57.4	0.0		40.9
Jan 18	24.9	0.0		38.5	Feb 18	58.3	0.0		41.4
Jan 19	27.0	0.0		38.4	Feb 19	56.4	0.0		41.5
Jan 20	26.3	0.0		38.6	Feb 20	56.5	0.0		41.2
Jan 21	28.9	0.0		39.1	Feb 21	59.0	0.0		41.1
Jan 22	28.8	0.0		39.3	Feb 22	51.2	0.0		41.3
Jan 23	29.8	0.0		39.5	Feb 23	45.2	0.0		41.4
Jan 24	38.6	0.0		39.6	Feb 24	49.7	0.0		41.3
Jan 25	34.2	0.0		39.7	Feb 25	41.3	0.0		40.9
Jan 26	33.9	0.0		39.7	Feb 26	36.0	0.0		40.6
Jan 27	33.1	0.0		39.6	Feb 27	38.8	0.0		40.6
Jan 28	31.7	0.0		39.7	Feb 28	44.8	0.0		40.7
Jan 29	33.7	0.0		39.6	Feb 29	44.8	0.0		40.7
Jan 30	34.4	0.0		39.5					
Jan 31	35.7	0.0		39.4					
AVG.	27.5	0.0			AVG.	36.1	0.0		

TABLE 130
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

MARCH 2016

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	0							30	15				41.2	0.0	5.0	40.9	
Mar 2	0							52	23				41.8	0.0	4.8	41.2	
Mar 3	0							54	20				49.2	0.0	4.1	41.5	
Mar 4	0							55	19				40.4	0.0		41.9	
Mar 5	0							100	36				42.7	0.0		42.2	
Mar 6	0							323	137				47.7	0.0		42.3	
Mar 7	0							81	38				48.5	0.0	3.7	42.7	
Mar 8	0							94	39				62.0	0.0	4.5	43.0	
Mar 9	0							65	24				57.0	0.0	4.7	43.5	
Mar 10	0							135	54				57.0	2.8	4.5	44.2	
Mar 11	0							155	74				58.3	0.0		44.0	
Mar 12	0							155	81				58.9	0.0		43.9	
Mar 13	0							159	64				59.4	0.0		44.0	
Mar 14	0							156	80				64.4	0.0	3.4	44.0	
Mar 15	0							164	80				62.4	0.0	4.0	44.2	
Mar 16	0							177	84				55.7	0.0	4.2	44.4	
Mar 17	0							123	70				59.2	0.0	3.3	44.5	
Mar 18	0							170	91				61.5	0.0		44.3	
Mar 19	0							123	66				57.1	0.0		44.0	
Mar 20	0							107	54				57.1	0.0		44.3	
Mar 21	0							83	39				56.6	0.0	4.1	44.6	
Mar 22	0							90	53				61.9	0.0	4.0	44.7	
Mar 23	0							145	81				71.2	0.0	4.4	45.3	
Mar 24	0							135	74				72.4	0.0	3.9	46.3	
Mar 25	1							294	169				72.5	0.0	2.5	46.1	
Mar 26	0							170	102				66.2	0.0	2.0	45.8	
Mar 27	1							166	102				65.3	0.0	2.5	45.9	
Mar 28	0							83	54				61.0	0.0	2.1	45.6	
Mar 29	-1							50	29				59.8	0.0	2.3	45.4	
Mar 30	1							67	47				52.1	0.0	3.8	45.6	
Mar 31	1							82	54				50.5	0.0	3.7	45.7	
TOTAL	3							3,843	1,953								
AVG.								124	63				57.1	0.1	3.7	44.1	

Note: Video counting began on March 1. The counts are 16-hour counts and occurred between 0400-2000 PST.

TABLE 131
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

APRIL 2016

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			0				93	55			0	59.2	0.0	3.9	46.2	
Apr 2	0			0				57	61			0	61.2	0.0	4.9	47.1	
Apr 3	0			0				105	62			0	61.3	20.1	5.0	48.1	
Apr 4	0			0				121	85			0	65.7	20.1	4.7	48.3	
Apr 5	1			0				95	53			0	68.6	20.0	5.0	48.8	
Apr 6	1			0				55	30			0	66.2	20.0	4.8	49.5	
Apr 7	2			0				90	58			0	65.9	20.2	4.0	49.4	
Apr 8	5			1				55	38			0	68.6	20.5	4.8	48.8	
Apr 9	1			0				48	38			0	72.7	20.4	4.9	48.8	
Apr 10	2			0				56	40			0	82.3	20.5	4.8	49.7	
Apr 11	4			0				46	29			0	91.3	20.5	5.0	50.5	
Apr 12	2			0				42	32			0	94.5	20.3	4.5	50.7	
Apr 13	4			0				48	35			0	100.4	20.3	4.0	50.5	
Apr 14	4			0				48	32			0	104.0	20.4	3.0	49.7	
Apr 15	10			0				35	28			0	106.0	20.3	3.0	49.0	
Apr 16	5			0				42	36			0	100.6	20.3	3.2	48.9	
Apr 17	18			0				42	34			0	94.2	20.3	3.4	48.9	
Apr 18	13			0				42	30			0	91.9	20.4		49.2	
Apr 19	19			0				47	36			0	89.7	20.3	3.7	50.3	
Apr 20	10			0				41	35			0	94.0	20.4	4.0	51.2	
Apr 21	17			0				38	28			0	99.4	20.4	4.7	52.1	
Apr 22	24			0				33	23			0	106.1	20.3	4.2	52.5	
Apr 23	34			1				33	25			0	115.9	38.7	4.5	52.5	
Apr 24	65			0				42	36			0	129.3	46.5	3.7	51.6	
Apr 25	35			1				17	13			0	125.1	38.1	3.5	50.2	
Apr 26	97			2				24	19			1	110.5	23.6	2.6	49.6	
Apr 27	77			0				21	16			0	105.3	20.5	3.1	50.1	
Apr 28	84			4				19	13			0	105.2	20.6	4.2	50.4	
Apr 29	127			2				12	8			0	96.3	20.6	3.6	51.0	
Apr 30	112			1				16	14			0	94.4	20.6	4.3	51.0	
TOTAL	773			12				1,463	1,042			1					
AVG.	26			0				49	35				90.9	21.2	4.1	49.8	
RUN YEAR																	
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	unclipped STEELHEAD			BULL TROUT					
		776	12					5,306	2,995			1					

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

TABLE 132

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

LOWER GRANITE PROJECT - FISH COUNTS

MAY 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL		SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY SECCHI	TURBIDITY DEG F
	SPRING	SUMMER	FALL					STEELHEAD	unclipped STEELHEAD							
May 1	200			4				7	6	0	0	0	84.6	20.7	4.0	51.0
May 2	108			2				9	8	0	0	0	85.3	20.5	4.4	50.9
May 3	103			4				12	6	0	0	0	85.9	20.5	5.0	51.5
May 4	239			4				9	8	0	0	0	83.1	20.3	5.0	52.7
May 5	425			4				14	8	0	0	0	94.9	20.9	5.0	53.7
May 6	454			16				14	10	0	-1	0	103.0	25.5	4.5	54.8
May 7	839			10				26	19	0	0	0	110.5	22.0	4.5	55.2
May 8	1,670			47				13	7	0	0	0	117.1	27.8	5.0	55.0
May 9	2,246			55				11	7	0	0	0	120.7	31.5	3.5	54.4
May 10	4,234			112				8	8	0	0	0	115.8	28.3	3.3	54.2
May 11	5,622			170				8	8	0	0	0	97.3	20.5	3.0	53.4
May 12	3,592			160				6	5	0	0	0	91.5	20.4	2.8	52.4
May 13	3,602			192				6	4	0	0	0	86.9	20.4	3.2	52.2
May 14	3,246			208				5	4	0	0	0	91.8	20.3	3.6	52.2
May 15	2,188			112				2	1	0	0	0	96.1	20.5	3.1	53.2
May 16	906			101				2	1	1	0	0	102.7	20.4	3.8	54.0
May 17	1,045			102				1	1	0	0	0	94.0	20.5	4.8	53.7
May 18	1,679			222				2	1	4	0	0	89.6	20.4	5.0	53.6
May 19	1,750			211				1	0	0	0	0	93.5	20.4	4.7	54.3
May 20	2,072			283				2	2	0	0	0	107.0	20.4	3.9	56.0
May 21	1,639			268				0	0	1	0	0	94.1	20.4	3.8	56.4
May 22	1,859			324				2	2	0	0	0	89.9	20.4	3.9	55.0
May 23	334			113				1	1	0	0	0	83.0	20.3	4.0	53.7
May 24	502			122				0	0	0	0	0	84.1	20.4	3.3	53.3
May 25	763			182				0	0	0	0	0	78.5	20.4	4.0	53.2
May 26	2,116			209				1	1	0	0	0	76.6	20.5	4.7	53.6
May 27	2,508			277				2	2	0	0	0	69.7	20.6	4.7	54.6
May 28	2,291			244				1	1	4	0	1	68.8	20.6	4.6	55.8
May 29	1,096			124				0	0	1	0	0	68.7	20.6	5.0	56.8
May 30	522			86				1	0	2	0	0	64.5	20.6	5.0	57.1
May 31	382			83				1	0	4	0	0	67.8	20.6	5.0	57.9
TOTAL	50,232			4,051				167	121	17	-1	1				
AVG.	1620			131				5	4	1	0	0	90.2	21.5	4.2	54.1
RUN YEAR																
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT				
SPRING		51,008	4,063					5,473	3,116	17	-1	2				

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

LOWER GRANITE PROJECT - FISH COUNTS

JUNE 2016

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	528			109			0	0	0	1	0	0	66.4	20.6	5.0	58.8
Jun 2	551			85			0	1	1	1	0	0	67.2	20.6	5.0	59.1
Jun 3	664			52			0	0	0	1	0	0	65.4	20.6	4.7	59.6
Jun 4	980			109			0	0	0	17	0	0	66.3	20.5	3.8	60.3
Jun 5	817			116			0	3	2	17	0	0	70.6	20.5	5.0	60.4
Jun 6	737			80			0	0	0	7	0	0	72.4	20.4	5.0	61.2
Jun 7	845			96			0	0	0	8	0	1	76.3	20.4	5.0	62.3
Jun 8	583			53			0	0	-1	6	0	0	75.1	20.4	5.0	63.3
Jun 9	904			85			0	2	1	10	1	1	76.2	20.3	5.0	64.3
Jun 10	588			83			0	1	1	10	1	0	71.7	20.2	4.5	64.5
Jun 11	397			46			0	1	1	8	0	0	61.2	20.4	4.7	64.1
Jun 12	797			130			0	3	2	30	0	1	54.0	20.5	5.0	63.8
Jun 13	407			65			0	1	1	22	0	0	54.8	20.4	4.2	63.0
Jun 14	494			66			0	5	4	28	0	0	55.1	20.3	4.1	62.5
Jun 15	613			89			0	6	5	25	0	0	56.0	20.5	5.0	62.2
Jun 16	601			76			0	8	7	44	0	1	53.6	20.5	4.8	62.2
Jun 17	536			77			0	7	5	66	0	0	54.1	20.6	5.0	61.7
Jun 18		468		61			0	6	7	53	0	0	49.7	20.5	4.6	60.4
Jun 19		557		80			0	5	5	95	0	0	48.9	20.5	5.0	59.9
Jun 20		456		79			2	7	6	172	0	0	47.2	20.4	5.0	59.7
Jun 21		571		122			4	14	12	127	0	0	45.5	18.6	5.0	59.5
Jun 22		401		70			0	9	5	48	0	0	43.0	18.7	5.0	61.1
Jun 23		485		103			2	6	2	233	0	0	44.8	18.9	5.0	61.6
Jun 24		488		78			1	15	14	138	0	0	39.4	18.6	5.0	63.0
Jun 25		546		92			2	13	7	205	0	0	34.5	18.7	5.0	64.3
Jun 26		478		85			2	11	6	284	0	0	35.1	18.7	5.0	65.1
Jun 27		334		74			14	16	12	463	0	0	36.9	18.8	5.0	65.5
Jun 28		445		97			14	24	16	695	0	0	43.5	18.8	5.0	65.8
Jun 29		272		60			16	18	16	756	1	1	42.4	17.8	5.0	66.8
Jun 30		145		31			10	12	10	971	1	0	43.1	17.9	5.0	67.2
TOTAL	11,042	5,646		2,449			67	194	147	4,541	4	5				
AVG.	650	434		82			2	6	5	151	0	0	55.0	19.8	4.8	62.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,050	5,480
SUMMER	5,646	1,032
TOTAL	67,696	6,512

	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
TOTALS TO DATE						
SPRING	67	5,667	3,263	4,558	3	7
SUMMER						
TOTAL	67	5,667	3,263	4,558	3	7

TABLE 134

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

LOWER GRANITE PROJECT - FISH COUNTS

JULY 2016

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
Jul 1		139		50			10	13	7	900	0		42.4	17.7	5.0	67.4
Jul 2		260		72			28	22	11	1,379	0		42.9	17.9	5.0	67.6
Jul 3		272		73			48	26	16	1,484	0		40.3	17.8	5.0	67.0
Jul 4		278		60			47	33	17	1,439	0		43.3	17.7	5.0	67.5
Jul 5		244		34			52	36	25	1,225	1		33.7	17.6	5.0	67.0
Jul 6		172		35			54	37	25	1,819	1		32.0	17.8	5.0	66.6
Jul 7		133		38			44	25	19	1,746	0		35.1	17.7	5.0	66.7
Jul 8		149		37			41	40	24	1,644	0		32.1	17.7	4.9	66.7
Jul 9		224		46			42	46	30	2,659	1		32.4	17.7	5.0	66.1
Jul 10		149		41			49	44	34	1,693	1		31.0	17.6	5.0	65.5
Jul 11		126		23			38	44	25	1,709	1		33.4	17.8	5.0	65.5
Jul 12		325		36			35	53	34	1,720	0		37.7	17.6	5.0	65.4
Jul 13		458		34			44	107	59	2,018	5		35.8	17.6	5.0	64.7
Jul 14		391		41			41	96	55	2,132	0		35.3	17.8	5.0	63.7
Jul 15		172		28			29	71	37	726	-2		37.3	17.7	5.0	62.9
Jul 16		250		25			13	139	72	784	0		33.6	17.7	5.0	63.7
Jul 17		96		19			16	110	54	1,256	4		30.6	17.7	5.0	65.0
Jul 18		188		22			12	91	42	1,778	-1		31.4	17.6	5.0	65.3
Jul 19		133		22			7	92	42	1,574	1		35.2	17.8	5.0	65.1
Jul 20		79		12			13	108	55	1,188	1		34.9	17.8	5.0	65.7
Jul 21		79		20			10	78	42	1,182	2		33.0	17.9	5.0	65.9
Jul 22		104		17			7	74	26	623	-1		33.5	17.9	5.0	65.0
Jul 23		73		12			7	87	32	284	5		30.5	17.9	5.0	65.7
Jul 24		80		10			6	132	68	496	2		30.5	17.9	5.0	66.1
Jul 25		94		16			7	87	44	683	1		33.0	18.0	5.0	66.8
Jul 26		80		16			4	75	34	622	6		33.1	17.9	5.0	66.2
Jul 27		62		7			0	92	36	394	1		30.7	17.9	5.0	65.6
Jul 28		29		5			5	72	32	246	2		30.7	18.0	5.0	65.4
Jul 29		20		22			4	55	24	120	6		30.7	17.9	5.0	65.8
Jul 30		74		14			2	71	29	148	2		30.7	17.8	5.0	65.5
Jul 31		56		8			6	124	47	226	5		28.1	15.3	5.0	65.1
TOTAL		4,989		895			721	2,180	1,097	35,897	44					
AVG.		161		29			23	70	35	1158	1		34.0	17.7	5.0	65.7

RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	unclipped			BULL TROUT
			SOCKEYE	STEELHEAD	STEELHEAD	SHAD LAMPREY
SPRING	62,050	5,480	788	7,847	4,360	40,455 47
SUMMER	10,635	1,927				7
TOTAL	72,685	7,407				

TABLE 135
 MONTHLY FISH PASSAGE SUMMARY REPORT
 U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

AUGUST 2016

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
Aug 1		72		12	0		0	104	46	170	7		27.7	17.9	5.0	66.3
Aug 2		61		5	0		2	79	30	260	-4		27.0	14.2	5.0	65.5
Aug 3		67		12	0		2	109	49	209	4		27.3	14.7	5.0	66.5
Aug 4		70		11	0		2	136	64	169	4		26.1	13.4	5.0	66.0
Aug 5		48		7	0		1	101	54	106	5		29.1	16.4	5.0	66.9
Aug 6		94		14	0		1	138	56	122	4		26.9	14.0	5.0	65.6
Aug 7		76		10	0		1	128	52	120	2		27.5	14.9	5.0	65.0
Aug 8		65		5	0		0	56	10	23	2		25.6	16.1	5.0	65.4
Aug 9		59		10	0		2	113	49	78	1		26.2	15.8	5.0	65.8
Aug 10		61		6	0		0	122	46	86	4		25.1	14.9	5.0	65.3
Aug 11		76		8	0		4	100	40	109	1		25.1	15.1	5.0	65.0
Aug 12		142		13	0		2	235	91	160	2		25.1	10.8	5.0	65.1
Aug 13		108		18	0		1	175	49	104	0		26.0	12.1	5.0	65.2
Aug 14		148		14	0		0	156	48	62	1		22.6	9.7	5.0	64.6
Aug 15		101		7	1		0	60	23	47	4		23.6	10.6	5.0	64.9
Aug 16		66		10	0		0	70	18	68	0		29.5	16.1	5.0	65.4
Aug 17		161		24	0		0	86	25	12	4		25.8	13.1	5.0	65.1
Aug 18			98	6	0		0	64	26	20	0		26.8	14.0	5.0	65.3
Aug 19			210	26	0		0	74	25	22	2		28.8	16.1	5.0	66.0
Aug 20			114	18	0		1	93	28	14	0		26.5	13.8	5.0	66.5
Aug 21			126	17	0		0	90	28	6	-2		24.7	12.0	5.0	66.1
Aug 22			181	32	0		1	92	25	22	1		21.3	8.4	5.0	65.4
Aug 23			148	25	0		1	101	36	19	2		21.4	8.6	5.0	65.6
Aug 24			227	34	0		1	113	41	11	1		21.3	8.6	5.0	65.8
Aug 25			226	55	0		1	89	28	6	1		21.5	8.6	5.0	65.7
Aug 26			414	60	0		1	75	31	5	0		22.3	9.8	5.0	66.0
Aug 27			436	67	0		0	102	26	2	-1		23.4	10.4	5.0	66.1
Aug 28			577	98	0		0	186	72	5	2		21.5	8.7	5.0	65.7
Aug 29			203	47	0		0	78	24	2	2		21.5	8.6	5.0	65.6
Aug 30			282	62	0		0	101	31	-4	1		21.3	8.6	5.0	65.4
Aug 31			246	73	0		0	87	20	-4	1		21.3	8.6	5.0	65.3
TOTAL		1,475	3,488	806	1		24	3,313	1,191	2,031	51					
AVG		87	249	26			1	107	38	66	2		24.8	12.4	5.0	65.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE	TOTALS TO DATE
SPRING	62,050	5,480	1	812	11,160	5,551	42,486	98	7
SUMMER	12,110	2,113							
FALL	3,488	620							
TOTAL	77,648	8,213							

TABLE 136

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

SEPTEMBER 2016

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													
Sep 1			402	154	0	0	156	48		0		23.0	0.0	5.0	65.0
Sep 2			521	172	0	0	201	65		2		23.2	0.0	5.0	65.8
Sep 3			557	173	0	0	203	60		0		20.2	0.0	5.0	65.5
Sep 4			391	125	0	0	160	52		0		19.0	0.0	5.0	65.4
Sep 5			718	211	0	0	188	54		2		16.8	0.0	5.0	65.5
Sep 6			319	120	0	0	107	29		0		20.9	0.0	5.0	65.7
Sep 7			322	91	0	0	114	22		2		21.9	0.0	5.0	65.6
Sep 8			800	294	4	0	210	48		0		22.6	0.0	5.0	65.3
Sep 9			1,160	379	1	0	280	76		1		21.4	0.0	5.0	64.6
Sep 10			818	212	-1	0	201	44		0		20.4	0.0	5.0	64.5
Sep 11			1,704	414	1	0	425	84		0		20.6	0.0	5.0	64.4
Sep 12			752	253	0	0	410	85		0		17.2	0.0	5.0	64.0
Sep 13			1,898	540	0	0	743	167		0		22.7	0.0	4.7	63.6
Sep 14			1,007	365	1	0	777	152		1		24.8	0.0	5.0	64.0
Sep 15			1,612	492	5	0	956	198		0		23.8	0.0	5.0	64.3
Sep 16			1,698	407	5	5	1,223	221		0		23.3	0.0	5.0	63.8
Sep 17			1,768	350	14	12	1,176	218		1		19.5	0.0	5.0	63.3
Sep 18			1,783	359	40	12	2,351	408		0		17.7	0.0	5.0	63.1
Sep 19			1,306	301	60	18	1,801	353		0		25.5	0.0	5.0	62.6
Sep 20			1,094	307	41	4	2,066	358		0		17.8	0.0	5.0	62.3
Sep 21			943	364	47	5	1,585	288		0		18.4	0.0	5.0	62.3
Sep 22			1,018	385	109	1	1,825	319		0		16.0	0.0	5.0	61.9
Sep 23			1,021	400	104	19	2,772	502		0		19.6	0.0	5.0	61.9
Sep 24			768	284	82	11	2,750	460		0		15.9	0.0	5.0	62.2
Sep 25			432	202	52	8	2,246	426		0		12.9	0.0	5.0	62.5
Sep 26			433	182	34	4	1,692	289		0		18.9	0.0	5.0	63.0
Sep 27			462	312	110	16	2,739	469		0		19.9	0.0	5.0	62.8
Sep 28			418	241	124	8	1,857	329		0		18.5	0.0	5.0	62.7
Sep 29			300	202	65	23	1,572	304		0		20.4	0.0	5.0	63.0
Sep 30			264	142	76	2	1,357	216		0		18.3	0.0	5.0	63.1
TOTAL			26,689	8,433	974	148	34,143	6,344		9					
AVG.			890	281	32	5	1,138	211		0		20.0	0.0	5.0	63.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	62,050	5,480
SUMMER	12,110	2,113
FALL	30,177	9,053
TOTAL	104,337	16,646

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
975	148	815	45,303	11,895	42,486	107	7

TABLE 137

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY	
	SPRING	SUMMER												FALL	SECCHI
Oct 1			278	130	60	6	0	1,301	241		0	17.1	0.0	5.0	63.0
Oct 2			265	178	85	1	0	2,291	377		0	20.0	0.0	5.0	63.5
Oct 3			365	227	73	5	0	2,821	499		0	22.6	0.0	5.0	63.3
Oct 4			206	149	59	2	0	2,308	416		0	18.0	0.0	5.0	63.2
Oct 5			158	137	77	4	0	2,392	378		0	22.0	0.0	5.0	63.2
Oct 6			272	212	78	2	0	2,705	514		0	23.9	0.0	5.0	63.2
Oct 7			318	212	114	11	0	2,969	527		0	19.3	0.0	5.0	63.1
Oct 8			248	121	72	18	0	3,409	653		0	19.5	0.0	5.0	63.3
Oct 9			299	167	74	12	0	2,835	524		0	22.7	0.0	5.0	62.9
Oct 10			118	96	76	6	0	1,887	397		-1	24.1	0.0	5.0	62.1
Oct 11			88	73	52	1	0	1,850	344		0	21.6	0.0	5.0	61.7
Oct 12			106	65	34	5	0	1,731	341		0	21.3	0.0	5.0	61.5
Oct 13			137	108	44	0	0	1,524	306		0	26.6	0.0	5.0	61.2
Oct 14			103	72	60	1	0	1,531	325		0	23.6	0.0	5.0	60.6
Oct 15			126	97	53	23	0	1,559	334		0	22.4	0.0	5.0	60.2
Oct 16			74	80	49	2	0	1,587	358		0	20.2	0.0	5.0	59.8
Oct 17			138	76	52	6	0	1,253	268		0	23.0	0.0	5.0	59.4
Oct 18			155	92	101	7	0	1,836	426		0	25.5	0.0	5.0	58.7
Oct 19			100	70	84	11	0	1,794	396		0	24.2	0.1	5.0	58.3
Oct 20			83	50	56	2	0	1,070	242		0	18.5	0.0	5.0	58.0
Oct 21			55	62	41	0	0	738	164		0	22.5	0.0	5.0	57.8
Oct 22			25	31	26	1	0	532	130		0	21.9	0.0	5.0	57.3
Oct 23			90	70	49	1	0	1,080	275		0	23.1	0.0	5.0	56.9
Oct 24			38	62	29	4	0	677	166		0	22.8	0.0	5.0	56.6
Oct 25			40	50	30	0	0	635	163		0	22.8	0.0	5.0	55.6
Oct 26			65	52	31	2	0	720	160		0	18.7	0.0	5.0	55.5
Oct 27			55	68	25	2	0	619	161		0	23.5	0.0	5.0	54.7
Oct 28			37	35	10	2	0	601	152		0	23.7	0.0	5.0	54.6
Oct 29			32	40	24	5	0	455	114		0	25.4	0.0	5.0	54.4
Oct 30			40	26	7	5	0	390	83		0	25.9	0.0	5.0	54.3
Oct 31			24	41	8	1	1	301	78		0	24.5	0.0	5.0	54.2
TOTAL			4,138	2,949	1,633	148	1	47,401	9,512		-1				

AVG.	133	95	53	5	0	1,529	307	0	22.3	0.0	5.0	59.4
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
TOTALS TO DATE	62,050	5,480	2,608	296	816	92,704	21,407	42,486	106	7
SPRING	12,110	2,113								
SUMMER	34,315	12,002								
FALL	108,475	19,595								
TOTAL										

Note: Visual counts ended October 31.

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

LOWER GRANITE PROJECT - FISH COUNTS

NOVEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL	unclipped	SHAD	LAMPREY	BULL	DISCH	SPILL	TURBIDITY	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK		SOCKEYE			STEELHEAD			STEELHEAD	TROUT
Nov 1			28	34	16	0	468	150				26.8	0.0	5.0	54.2
Nov 2			41	33	16	2	496	176				31.1	0.0	5.0	54.2
Nov 3			18	28	13	0	400	124				26.2	0.0	5.0	54.2
Nov 4			45	36	11	3	556	116				25.1	0.0	5.0	54.1
Nov 5			28	25	11	1	483	122				21.7	0.0	5.0	53.9
Nov 6			24	25	14	3	390	109				22.8	0.0	5.0	53.7
Nov 7			22	24	14	6	283	96				24.7	0.0	5.0	53.5
Nov 8			25	41	13	2	357	102				24.6	0.0		53.3
Nov 9			9	22	18	7	296	93				20.5	0.0	5.0	52.8
Nov 10			14	14	16	4	292	104				26.2	0.0		52.6
Nov 11			10	14	5	0	281	98				21.9	0.0		52.2
Nov 12			7	10	5	1	153	44				18.1	0.0		51.9
Nov 13			8	7	11	2	250	92				18.7	0.0		51.7
Nov 14			11	9	4	0	128	53				22.6	0.0	5.0	51.5
Nov 15			1	7	4	0	97	25				20.6	0.0	4.3	51.2
Nov 16			3	6	15	2	155	65				22.2	0.0		51.1
Nov 17			6	1	8	0	170	52				23.1	0.0	2.6	50.7
Nov 18			6	16	7	0	185	66				26.6	0.0		50.3
Nov 19			10	6	0	0	173	57				23.7	0.0		50.1
Nov 20			0	-1	9	0	135	46				22.2	0.0		50.0
Nov 21			1	0	3	0	141	40				21.3	0.0	5.0	49.7
Nov 22			2	3	6	0	105	30				22.3	0.0	5.0	49.6
Nov 23			42	1	1	0	114	32				25.6	0.0	5.0	49.3
Nov 24			22	3	1	0	131	40				18.8	0.0		48.8
Nov 25			12	-1	2	0	102	33				25.5	0.0		48.1
Nov 26			1	0	8	0	112	35				17.4	0.0		47.6
Nov 27			0	0	1	0	93	35				22.1	0.0		46.8
Nov 28			1	0	0	0	67	19				22.6	0.0	4.2	46.6
Nov 29			2	1	0	0	75	20				19.3	0.0	5.0	46.5
Nov 30			0	0	0	0	75	28				17.7	0.0	3.8	46.3

TOTAL			399	364	232	33		6,763	2,102							
AVG.			13	12	8	1		225	70			22.7	0.0	4.7	50.9	

RUN YEAR	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
TOTALS TO DATE										
SPRING	62,050	5,480	2,840	329	816	99,467	23,509	42,486	106	7
SUMMER	12,110	2,113								
FALL	34,714	12,366								
TOTAL	108,874	19,959								

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

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

LOWER GRANITE PROJECT - FISH COUNTS

DECEMBER 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	TOTAL STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	TURBIDITY		
	SPRING	SUMMER	FALL												SECCHI	DEG F	
Dec 1			0		0			90	35				23.5	0.0	4.7	46.1	
Dec 2			0		1			109	44				20.3	0.0		45.8	
Dec 3			1		0			69	27				20.7	0.0		45.4	
Dec 4			0		0			96	39				20.3	0.0		45.1	
Dec 5			0		0			66	22				16.9	0.0	5.0	44.9	
Dec 6			-1		0			21	9				20.8	0.0	5.0	44.6	
Dec 7			0		0			22	11				18.3	0.0		44.3	
Dec 8			0		0			40	14				20.8	0.0	5.0	43.7	
Dec 9			0		1			16	3				18.1	0.0		43.3	
Dec 10			0		-1			16	7				15.8	0.0		42.9	
Dec 11			0		0			41	15				16.8	0.0		42.6	
Dec 12			0		0			14	6				22.8	0.0	5.0	42.2	
Dec 13			0		0			6	1				20.4	0.0		42.0	
Dec 14			0		0			8	6				23.0	0.0	5.0	41.4	
Dec 15			0		0			5	2				17.8	0.0	5.0	40.8	
Dec 16			0		0			2	1				21.1	0.0	5.0	39.7	
Dec 17			0		0			8	3				21.1	0.0		39.1	
Dec 18			0		0			8	4				20.0	0.0		38.3	
Dec 19			0		0			6	2				20.4	0.0	5.0	38.1	
Dec 20			0		0			7	4				23.5	0.0	5.0	38.2	
Dec 21			0		0			2	2				20.7	0.0	5.0	38.2	
Dec 22			0		0			10	6				23.3	0.0		38.0	
Dec 23			0		0			16	4				25.6	0.0		37.5	
Dec 24			0		0			3	1				13.5	0.0		37.1	
Dec 25			0		0			3	1				17.4	0.0		37.0	
Dec 26			0		0			3	1				19.8	0.0		36.4	
Dec 27			0		0			0	1				21.4	0.0	5.0	36.4	
Dec 28			0		0			1	1				23.9	0.0	5.0	36.5	
Dec 29			0		0			6	1				21.1	0.0	5.0	36.8	
Dec 30			0		0			7	3				19.2	0.0	5.0	37.2	
Dec 31			0		0			8	2				20.0	0.0	5.0	37.3	
TOTAL			0		1			709	278								

AVG.

0

0

23

9

20.3	0.0	5.0	40.5
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RUN YEAR

TOTALS TO DATE

	CHINOOK ADULT	CHINOOK JACK
SPRING	62,050	5,480
SUMMER	12,110	2,113
FALL	34,714	12,366
TOTAL	108,874	19,959

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD	SHAD	LAMPREY	BULL TROUT
2,841	329	816	100,086	23,750	42,486	106	7

Note: From November 1 to December 31, counts were from video. The counts are 16-hour counts and occurred between 0400-2000 PST.
 Official Fall Chinook run ended December 15.

TABLE 140

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Jun 1	12			1			0	0	0		1
Jun 2	7			0			0	1	1		1
Jun 3	20			2			0	0	0		0
Jun 4	5			0			0	0	0		-1
Jun 5	13			3			0	0	0		1
Jun 6	24			0			0	0	0		0
Jun 7	14			2			0	0	0		0
Jun 8	8			0			0	0	0		0
Jun 9	27			4			0	1	1		2
Jun 10	22			3			0	0	0		0
Jun 11	40			13			0	0	0		0
Jun 12	20			3			0	0	0		0
Jun 13	38			8			0	0	0		0
Jun 14	62			6			0	0	0		0
Jun 15	56			5			0	0	0		0
Jun 16	99			8			0	0	0		0
Jun 17	32			6			1	0	0		0
Jun 18		24		2			0	0	0		0
Jun 19		40		5			0	0	0		0
Jun 20		39		4			0	0	0		0
Jun 21		43		4			0	0	0		0
Jun 22		33		6			1	0	0		1
Jun 23		36		0			0	0	0		0
Jun 24		93		13			1	1	1		0
Jun 25		64		7			3	0	0		0
Jun 26		24		4			3	1	0		0
Jun 27		20		0			3	1	1		0
Jun 28		35		3			1	3	2		1
Jun 29		37		8			8	3	1		0
Jun 30		13		3			5	2	1		0
TOTAL	499	501		123			26	13	8		6
AVG.	29	39		4			1	0	0		0

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

TABLE 141

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

July 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Jul 1		34		4			10	2	1		1
Jul 2		16		5			13	2	2		-1
Jul 3		16		3			5	6	4		2
Jul 4		27		0			10	0	0		1
Jul 5		18		2			9	2	2		6
Jul 6		13		1			5	3	3		1
Jul 7		8		1			6	0	0		4
Jul 8		17		3			6	0	0		6
Jul 9		20		2			6	3	2		6
Jul 10		10		3			12	2	2		5
Jul 11		6		3			7	0	0		16
Jul 12		14		1			5	0	0		12
Jul 13		22		0			3	0	0		16
Jul 14		38		3			1	2	2		18
Jul 15		13		2			2	1	1		13
Jul 16		2		0			4	2	1		9
Jul 17		6		3			1	5	0		28
Jul 18		12		2			1	1	1		18
Jul 19		5		0			2	3	2		14
Jul 20		1		2			1	0	0		29
Jul 21		7		3			2	0	-1		21
Jul 22		6		0			1	-1	0		20
Jul 23		1		1			1	3	1		24
Jul 24		9		1			2	5	5		6
Jul 25		4		1			1	3	2		27
Jul 26		4		0			0	7	4		23
Jul 27		-1		1			0	3	2		31
Jul 28		0		0			0	2	2		20
Jul 29		0		0			0	2	2		15
Jul 30		0		0			1	1	0		25
Jul 31		2		1			0	2	0		23
TOTAL		330		48			117	61	40		439
AVG.		11		2			4	2	1		14

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

TABLE 142

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL			SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	unclipped STEELHEAD		
Aug 1		1		0			1	4	3		16
Aug 2		2		0			0	2	2		19
Aug 3		-2		0			0	2	2		46
Aug 4		2		0			2	8	6		30
Aug 5		-1		0			0	5	3		31
Aug 6		0		0			0	0	0		12
Aug 7		0		0			0	2	0		25
Aug 8		0		0			0	2	2		9
Aug 9		0		0			0	1	1		29
Aug 10		1		0			1	2	1		23
Aug 11		0		0			0	0	0		16
Aug 12		1		0			0	4	4		19
Aug 13		1		0			0	2	2		12
Aug 14		-1		0			0	0	0		11
Aug 15		1		0			0	1	0		11
Aug 16		1		0			1	1	1		14
Aug 17		0		0			0	1	1		16
Aug 18			0	0			0	0	0		10
Aug 19			0	0			0	3	3		16
Aug 20			0	0			0	1	1		17
Aug 21			5	0			0	0	0		17
Aug 22			0	1			0	2	1		11
Aug 23			2	1			0	1	1		17
Aug 24			5	0			0	1	1		10
Aug 25			6	0			0	4	2		12
Aug 26			-1	0			0	0	0		25
Aug 27			6	0			0	0	0		28
Aug 28			1	0			0	6	2		21
Aug 29			1	0			0	3	2		14
Aug 30			4	1			1	1	0		13
Aug 31			1	0			0	3	0		10
TOTAL		6	30	3			6	62	41		560
AVG		0	2	0			0	2	1		18

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

TABLE 143

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

LOWER GRANITE PROJECT - NIGHT FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	TOTAL		unclipped	SHAD	LAMPREY
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	SOCKEYE	STEELHEAD	STEELHEAD		
Sep 1			0	0	0	0		5	1		12
Sep 2			8	3	0	0		3	2		25
Sep 3			4	3	0	0		4	0		7
Sep 4			8	3	0	0		6	3		20
Sep 5			3	1	0	0		7	2		7
Sep 6			4	3	0	0		4	1		7
Sep 7			9	3	0	0		4	0		11
Sep 8			4	0	0	0		7	5		5
Sep 9			7	2	0	0		11	2		7
Sep 10			6	3	0	0		7	1		4
Sep 11			2	0	0	0		16	9		3
Sep 12			9	3	0	0		13	4		1
Sep 13			1	1	0	0		32	5		2
Sep 14			5	4	0	0		30	10		0
Sep 15			3	4	0	0		42	8		2
Sep 16			11	7	0	0		68	16		5
Sep 17			23	13	1	0		126	24		1
Sep 18			10	8	0	0		55	8		2
Sep 19			7	8	1	0		90	16		1
Sep 20			8	3	0	0		55	13		3
Sep 21			6	10	1	0		63	15		2
Sep 22			9	4	3	1		99	22		0
Sep 23			5	5	0	0		103	15		0
Sep 24			3	6	2	0		166	34		1
Sep 25			3	2	1	0		108	28		0
Sep 26			7	7	4	0		206	35		0
Sep 27			6	10	3	0		145	35		0
Sep 28			11	4	6	0		163	30		3
Sep 29			9	5	4	0		113	22		3
Sep 30			8	1	4	0		128	24		1
TOTAL			199	126	30	1		1,879	390		135
AVG.			7	4	1	0		63	13		5

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

TABLE 144

YEARLY TOTALS OF SALMONIDS COUNTED OVER
LOWER GRANITE DAM
1975 - 2016

YEAR	CHINOOK*	STEELHEAD	SOCKEYE	COHO*	TOTALS
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
Total	2,878,127	4,723,124	13,920	62,462	7,677,633
10-Year Average	153,372	166,970	1,115	4,833	326,290

*Jacks included

TABLE 145

**MONTHLY COUNT OF CHINOOK SALMON
LOWER GRANITE DAM
1975 - 2016**

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
Total	26	219,331	1,107,751	623,553	210,789	44,072	505,019	156,443	11,041	102			2,878,127
10-Year Average	2,725	54,736	31,070	10,072	3,158	40,191	10,682	731					153,372

*Jacks included

TABLE 146

MONTHLY COUNT OF STEELHEAD

LOWER GRANITE DAM
1975 - 2016

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
Total	539	790	139,394	127,376	16,710	7,046	83,865	213,829	1,809,935	1,991,203	292,678	39,759	4,723,124
10-Yr Average			5,126	3,472	441	227	3,161	8,234	72,582	64,237	8,171	1,319	166,970

PRIEST RAPIDS AND WANAPUM DAMS

FISH COUNTING SCHEDULE – PRIEST RAPIDS DAM

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.

FISH COUNTING SCHEDULE – WANAPUM DAM

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.

FISH LADDER OPERATING AND MAINTENANCE SCHEDULE – PRIEST RAPIDS DAM

Left Bank Ladder

01 Jan. – 03 Feb.	In service (within operational criteria).
04 Feb. – 31 Mar.	Out of criteria for annual inspection, maintenance and repairs.
01 Apr. – 31 Dec.	In service (within operational criteria).

Right Bank Ladder

01 Jan. – 03 Feb.	Out of criteria for annual inspection, maintenance, and repairs.
04 Feb. – 19 Dec.	In service (within operational criteria).
20 Dec. – 31 Dec.	Out of criteria for annual inspection, maintenance, and repairs.

2016 FISH LADDER OPERATING AND MAINTENANCE SCHEDULE – WANAPUM DAM

Left Bank Ladder

01 Jan. – 10 Mar.	Out of criteria for annual inspection, maintenance, and repairs.
11 Mar. – 31 Dec.	In service (within operational criteria).

Right Bank Ladder

01 Jan. – 10 Mar.	In service (within operational criteria).
11 Mar. – 31 Mar.	Out of criteria for annual inspection, maintenance, and repairs.
01 Apr. – 09 Dec.	In service (within operational criteria).
10 Dec. – 31 Dec.	Out of criteria for annual inspection, maintenance, and repairs.

Note: Out of criteria dates provided above reflect time periods when the adult fishway was out of operational flow and/or head differential criteria. Upstream fish passage is

possible for one to several days before and after the indicated dates. “Ladder flow” are periods of reduced fishway flow that still allow fish passage.

2016 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 PCs from the fish-counting room at Wanapum Maintenance Center. The fish counting staff playback these images on a computer screen 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 counting 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, Wildlife, and Water Quality’s website: <http://www.grantpud.org/environment/fish-wildlife/fish-counts>.

This site provides several years of fish counts and a historic fish count summary for Priest Rapids and Wanapum dams. In 2016, adult fish counting occurred at Priest Rapids and Wanapum dams from April 15 – November 15.

Adult PIT Tag Detection

The PIT tag detection array 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. During the 2015 – 2016 winter outage period, the PIT tag readers were upgraded with Biomark FS2020 transceivers along with replacement of a faulty antennae. Another PIT tag monitoring site is located within the Off-Ladder Adult Fish Trap (OLAFT).

Off Ladder Adult Fish Trap (OLAFT)

The adult fish trap is located off the left bank fish ladder at Priest Rapids Dam. The trap was used by: (1) the Yakama Nation to trap adult sockeye salmon for the Lake Cle Elum and Cooper Lake sockeye reintroduction program; (2) the Washington Department of Fish and Wildlife (WDFW) for its steelhead stock assessment; (3) the WDFW for the Priest Rapids Hatchery broodstock collection feasibility program; (4) the Yakama Nation to collect Coho salmon broodstock for the Mid-Columbia Coho Reintroduction Project; and (5) the Columbia River Inter-Tribal Fish Commission to sample sockeye salmon age composition. The facility was completely dewatered and winterized on November 17, 2016.

Adult Lamprey Passage Study

In 2016, Grant PUD continued studies to identify and address potential hydro project impacts to upstream migrating adult Pacific lamprey. The study utilized strategically placed aluminum plating installed throughout the fish ladders and fish counting stations

that facilitate fish passage and installed and maintained HDX-PIT tag arrays installed to evaluate passage success and travel times within the Priest Rapids and Wanapum dam fish ladders. In 2015, HDX-PIT arrays at Priest Rapids and Wanapum dams were modified to refine detection resolution in the upper Priest Rapids left bank fishway for the purpose of determining whether a pattern of slower passage through that section continued to occur. As such, two new stations were installed in the vicinity of the OLAFT, and one station in each of the lower fishways was removed.

TABLE 147

MONTHLY TOTALS OF SALMONIDS, SHAD, AND LAMPREY COUNTED OVER PRIEST RAPIDS DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				304	12,669	36,652	48,877	8,845	29,065	10,358	1,007		147,777
STEELHEAD				11	12	354	1,334	1,212	2,905	630	40		6,498
SOCKEYE					3	163,159	146,802	1,104	4				311,072
COHO*							1	24	1,301	644	17		1,987
PINK													0
TOTAL				315	12,684	200,165	197,014	11,185	33,275	11,632	1,064		467,334
SHAD					6	940	9,251	957	143	55			11,352
LAMPREY				7	142	319	2,569	3,787	1,128	169	18		8,139

*Jacks included

TABLE 148

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

PRIEST RAPIDS PROJECT- FISH COUNTS											APRIL 2016			
DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT	KCFS	KCFS	
Apr 1												113.4	0.0	45.4
Apr 2												83.6	0.0	45.9
Apr 3												103.4	0.0	46.9
Apr 4												122.2	22.5	46.5
Apr 5												138.0	36.6	46.0
Apr 6												163.8	55.2	46.4
Apr 7												149.5	0.0	46.8
Apr 8												127.0	0.0	47.4
Apr 9												125.5	0.0	47.6
Apr 10												131.1	0.0	47.9
Apr 11												137.1	0.0	47.9
Apr 12												137.5	0.0	48.4
Apr 13												172.7	33.9	47.8
Apr 14												193.1	98.7	47.6
Apr 15	1			0				0		0		191.5	91.8	47.5
Apr 16	3			0				1		0		207.9	95.2	47.5
Apr 17	4			0				1		0		227.1	112.3	47.2
Apr 18	5			0				3		0		204.2	110.2	47.4
Apr 19	9			0				1		0		202.4	105.4	47.6
Apr 20	12			-1				1		0		152.2	72.2	48.1
Apr 21	13			0				0		0		231.1	118.8	48.8
Apr 22	15			0				0		0		230.1	153.9	49.4
Apr 23	12			0				0		3		220.6	154.2	49.8
Apr 24	17			0				1		0		227.7	111.6	50.1
Apr 25	27			0				1		0		195.3	87.4	49.8
Apr 26	22			0				1		0		188.7	94.1	49.8
Apr 27	37			0				1		0		202.5	97.9	49.9
Apr 28	44			0				0		0		204.6	104.8	
Apr 29	39			0				0		3		170.6	42.2	
Apr 30	43			2				0		1		171.5	37.4	
TOTAL	303			1				11		7		170.9	61.2	47.8
AVG.	19			0				1		0				

TABLE 149

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

MAY 2016

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	64			0			0	0	0	0	0	171.4	45.6	51.2
May 2	229			1			0	0	0	1	0	175.2	46.3	51.9
May 3	163			0			0	1	0	5	0	182.2	78.7	52.5
May 4	217			0			0	0	0	2	0	178.0	63.7	53.0
May 5	96			0			0	1	0	1	0	196.5	63.6	53.2
May 6	315			0			0	0	0	11	0	180.4	75.0	53.6
May 7	273			2			0	0	0	1	0	175.1	62.2	54.2
May 8	1,126			4			0	0	0	10	0	160.1	80.1	54.3
May 9	665			10			0	0	0	7	0	142.3	29.4	54.2
May 10	1,237			14			0	0	0	1	0	193.7	81.2	54.4
May 11	819			6			0	0	0	0	0	153.1	30.1	54.6
May 12	869			6			0	0	0	5	0	157.8	70.4	55.0
May 13	531			9			0	0	0	11	0	158.3	29.5	55.1
May 14	255			12			0	0	0	7	1	130.9	26.9	55.1
May 15	487			24			0	0	0	0	0	146.0	28.0	54.9
May 16	743			50			0	3	0	2	0	151.3	24.5	54.8
May 17	387			40			0	0	0	4	0	129.1	29.3	55.0
May 18	774			46			0	0	0	3	0	144.5	28.8	55.5
May 19	234			21			0	0	0	8	0	146.6	27.5	55.7
May 20	279			55			0	0	0	3	0	129.5	24.6	55.7
May 21	196			53			0	1	0	1	0	95.9	24.4	55.9
May 22	199			60			1	1	0	2	0	102.0	42.8	56.3
May 23	274			42			1	0	0	3	0	103.0	25.6	56.4
May 24	290			55			0	0	0	6	1	132.9	28.5	56.5
May 25	273			50			0	0	6	24	0	130.6	27.4	56.9
May 26	233			49			0	1	0	4	0	117.2	26.2	57.0
May 27	222			27			0	0	0	6	0	112.2	28.2	57.0
May 28	163			39			0	1	0	2	0	154.5	45.1	57.0
May 29	80			14			1	2	0	7	0	122.2	25.8	57.0
May 30	164			16			0	0	0	3	0	122.7	25.0	57.2
May 31	99			8			0	1	0	2	0	122.8	27.4	

TOTAL	11,956			713			3	12	6	142	2	145.7	41.0	55.0
AVG.	386			23			0	0	0	5	0			

RUN YEAR		
TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK
SPRING	12,259	714

	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
	3	23	6	149	2

TABLE 150

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

PRIEST RAPIDS PROJECT- FISH COUNTS

JUNE 2016

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	154			13		0	1	1	0	6	0	119.7	27.8	58.1
Jun 2	144			14		1	5	1	0	13	0	125.7	28.0	58.8
Jun 3	225			26		0	12	3	0	4	0	153.6	28.3	59.1
Jun 4	190			18		0	7	3	0	10	0	155.4	28.4	59.6
Jun 5	291			31		0	1	0	0	3	1	141.9	28.1	59.9
Jun 6	246			19		-1	14	2	0	5	0	150.8	27.6	60.4
Jun 7	368			24		0	29	0	0	1	0	149.6	28.0	60.7
Jun 8	296			20		0	88	0	0	5	0	131.9	27.9	60.8
Jun 9	203			16		0	99	1	0	7	0	150.1	27.8	61.0
Jun 10	274			49		0	150	1	0	6	0	112.3	28.5	61.2
Jun 11	632			15		0	475	3	0	7	0	107.2	28.2	60.7
Jun 12	814			10		0	509	3	0	6	0	124.9	28.5	60.8
Jun 13	747			34		0	885	3	0	5	0	125.4	28.0	61.0
Jun 14		932		69		0	857	9	1	11	0	107.9	29.1	60.9
Jun 15		1,020		127		0	1,090	2	0	6	0	115.7	29.5	60.4
Jun 16		1,077		26		0	1,212	3	0	5	0	126.2	29.5	60.2
Jun 17		920		88		0	1,035		0	12	0	132.2	26.8	59.8
Jun 18		503		22		0	1,164	2	0	3	0	45.1	25.4	59.7
Jun 19		2,246		87		0	5,458	22	0	9	0	127.3	26.7	59.6
Jun 20		2,079		42		0	4,514	23	0	12	0	97.3	28.8	60.0
Jun 21		1,360		101		0	6,610	26	-1	14	0	140.0	27.8	60.1
Jun 22		1,497		55		0	5,683	7	5	11	0	158.0	22.6	60.5
Jun 23		1,814		81		0	8,891	6	6	19	0	152.5	27.0	60.9
Jun 24		2,184		177		0	11,034	55	37	17	0	130.8	26.8	61.0
Jun 25		2,251		99		0	11,057	18	25	12	0	153.7	27.2	61.3
Jun 26		2,295		108		0	17,027	17	41	22	0	140.4	26.4	61.9
Jun 27		2,285		180		0	19,431	35	57	12	0	119.0	24.5	62.7
Jun 28		2,500		40		0	19,846	38	133	25	0	125.2	27.8	63.4
Jun 29		2,462		221		0	21,224	35	179	34	0	104.7	27.9	63.7
Jun 30		2,734		97		0	24,751	35	457	17	0	153.5	28.9	
TOTAL	4,584	30,159		1,909		0	163,159	354	940	319	1			
AVG.		1,774		64		0	5,439	12	31	11	0	129.3	27.6	60.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	16,843	1,003
SUMMER	30,159	1,620
TOTAL	47,002	2,623

COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
0	163,162	377	946	468	3

TABLE 151

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

JULY 2016

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		2,844		156		0	21,930	44	421	12		172.1	29.5	64.3
Jul 2		2,686		64		0	18,662	34	546	27		110.6	29.6	64.6
Jul 3		1,954		93		0	14,539	23	648	20		127.8	30.6	64.8
Jul 4		2,043		42		0	11,312	34	646	31		134.4	28.8	64.6
Jul 5		1,712		139		0	9,541	27	898	23		103.9	29.2	64.6
Jul 6		2,751		101		0	8,384	39	529	30		140.9	29.1	64.7
Jul 7		3,593		108		0	9,183	39	547	34		144.6	26.4	64.5
Jul 8		1,736		155		0	7,162	34	387	100		140.4	26.1	64.6
Jul 9		2,119		91		0	8,877	42	521	49		77.1	28.0	64.6
Jul 10		1,589		87		0	5,505	25	336	47		45.5	27.0	64.8
Jul 11		1,828		131		0	5,298	49	482	73		108.8	29.1	64.4
Jul 12		1,572		113		0	4,123	47	464	58		91.3	29.4	64.6
Jul 13		1,181		57		0	2,106	32	371	69		70.8	28.9	64.4
Jul 14		1,457		108		0	3,797	70	340	80		108.2	30.0	64.4
Jul 15		2,361		84		0	3,850	64	230	52		151.9	30.6	64.5
Jul 16		1,178		89		0	1,756	55	260	38		107.2	30.0	64.6
Jul 17		1,094		57		0	1,030	37	346	60		136.9	29.6	65.2
Jul 18		507		55		0	1,039	22	128	75		101.5	29.4	65.2
Jul 19		1,348		107		1	1,260	39	94	32		87.3	29.6	65.1
Jul 20		1,515		25		0	1,381	26	91	34		100.0	29.3	65.2
Jul 21		1,222		53		0	1,577	25	94	47		52.1	28.2	65.3
Jul 22		817		164		0	940	39	64	121		81.5	29.0	65.5
Jul 23		521		27		0	567	32	136	170		111.9	30.1	65.6
Jul 24		1,481		111		0	887	49	176	198		92.0	30.1	65.9
Jul 25		500		55		0	406	37	91	171		82.6	30.4	66.3
Jul 26		837		106		0	528	80	68	187		49.4	30.4	66.8
Jul 27		618		162		0	193	44	53	136		79.3	29.2	67.0
Jul 28		934		149		0	285	45	53	150		97.5	29.5	67.6
Jul 29		948		132		0	234	64	67	147		84.8	28.8	67.9
Jul 30		717		78		0	296	98	100	229		122.5	29.5	68.1
Jul 31		283		32		0	154	39	64	69		96.1	28.7	68.0
TOTAL		45,946		2,931		1	146,802	1,334	9,251	2,569				
AVG.		1,482		95			4,736	43	298	83		103.6	29.2	65.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
	TOTALS TO DATE	
SPRING	16,843	1,003
SUMMER	76,105	4,551
TOTAL	92,948	5,554

COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
1	309,964	1,711	10,197	3,037	3

TABLE 152

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT			
Aug 1		208		45	0	0	155	30	53	138		44.9	24.9	67.9
Aug 2		346		47	0	0	178	53	52	154		44.5	25.7	67.7
Aug 3		216		64	0	0	50	15	23	164		93.1	27.2	67.2
Aug 4		446		14	0	0	153	12	64	116		84.3	27.6	67.5
Aug 5		662		77	0	0	78	73	50	136		95.9	28.1	68.2
Aug 6		525		83	0	0	71	72	65	134		101.4	29.2	68.3
Aug 7		346		77	0	0	27	45	35	184		93.9	28.0	68.2
Aug 8		248		19	0	0	38	41	17	166		103.4	28.7	67.8
Aug 9		198		28	0	0	13	44	57	107		93.5	27.9	67.5
Aug 10		142		33	0	0	21	17	21	58		77.2	26.2	67.4
Aug 11		299		12	0	0	78	31	65	110		65.7	25.0	67.6
Aug 12		262		40	0	0	22	35	38	82		83.8	24.5	67.7
Aug 13		285		36	0	0	47	104	100	97		69.0	23.6	68.0
Aug 14			315	82	0	0	62	61	61	84		43.3	24.3	68.2
Aug 15			370	48	0	0	7	30	18	92		59.8	26.5	68.3
Aug 16			265	24	0	0	17	37	37	142		48.4	9.2	68.6
Aug 17			266	30	0	0	37	57	3	88		83.5	2.6	68.8
Aug 18			213	53	0	0	7	50	11	113		88.7	2.7	69.0
Aug 19			192	16	0	0	16	53	17	167		87.4	2.6	69.3
Aug 20			96	15	0	0	5	23	45	153		45.2	2.4	69.3
Aug 21			89	31	0	0	3	27	60	146		45.5	2.3	69.6
Aug 22			419	43	0	0	0	23	0	131		74.0	2.5	68.9
Aug 23			151	13	0	0	4	29	1	132		45.1	2.3	68.5
Aug 24			260	21	0	0	4	38	5	98		62.9	2.4	68.8
Aug 25			83	14	0	0	5	26	19	112		82.2	2.5	69.0
Aug 26			271	34	0	0	0	29	5	111		57.6	2.4	68.9
Aug 27			109	9	0	0	2	27	4	88		41.4	2.5	68.8
Aug 28			121	21	1	0	2	37	14	61		146.6	2.5	68.3
Aug 29			70	14	0	0	0	19	4	134		51.7	2.4	68.2
Aug 30			164	19	2	0	1	46	12	195		49.8	2.3	68.3
Aug 31			137	9	18	3	1	28	1	94		42.8	2.6	
TOTAL		4,183	3,591	1,071	21	3	1,104	1,212	957	3,787				
AVG.		322	200	35	1	0	36	39	31	122		71.2	14.3	68.3

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	16,843	1,003
SUMMER	80,288	5,126
FALL	3,591	496
TOTAL	100,722	6,625

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
21	4	311,068	2,923	11,154	6,824	3

TABLE 153

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	DEG F	
	SPRING	SUMMER	FALL	ADULT	JACK									
Sep 1			231	34	10	1	0	31	5	97		48.6	2.7	67.7
Sep 2			239	17	16	0	1	26	24	72		46.6	2.7	67.3
Sep 3			174	28	47	1	2	1	9	51		62.2	2.6	66.8
Sep 4			104	10	16	4	0	32	1	42		75.1	2.6	66.5
Sep 5			306	74	37	5	0	40	9	45		82.8	2.7	66.2
Sep 6			94	12	7	0	0	26	1	59		43.2	2.2	66.0
Sep 7			378	31	20	2	1	30	8	67		42.3	2.0	66.1
Sep 8			507	40	3	1	0	67	5	62		41.6	2.7	66.1
Sep 9			1,017	58	16	0	0	18	4	14		73.6	2.7	65.7
Sep 10			297	50	25	1	0	54	0	48		43.7	2.7	65.9
Sep 11			1,156	168	22	0	0	178	3	51		46.7	2.6	65.5
Sep 12			356	47	4	0	0	123	0	30		62.4	2.2	65.5
Sep 13			1,595	52	30	0	0	168	9	24		76.8	2.4	65.3
Sep 14			1,118	80	31	5	0	135	5	41		47.0	2.4	65.2
Sep 15			1,523	116	20	3	0	351	29	38		62.0	2.5	65.3
Sep 16			1,728	241	122	25	0	347	5	44		42.3	2.5	65.7
Sep 17			2,489	101	40	0	0	105	4	18		42.3	2.9	65.6
Sep 18			2,286	37	73	0	0	95	0	38		82.9	2.9	65.5
Sep 19			1,611	83	71	19	0	184	4	6		91.4	2.6	65.1
Sep 20			1,607	33	50	1	0	55	0	9		57.5	2.4	64.8
Sep 21			860	54	47	3	0	122	0	20		74.6	2.7	64.7
Sep 22			698	83	28	3	0	80	0	25		42.7	2.6	64.9
Sep 23			1,354	58	118	14	0	127	0	19		40.6	2.8	64.8
Sep 24			831	75	68	26	0	32	1	12		122.8	2.7	64.5
Sep 25			612	81	48	4	0	106	1	23		75.9	2.5	64.5
Sep 26			800	78	40	0	0	92	0	47		87.0	2.3	64.5
Sep 27			981	81	47	3	0	79	5	27		43.5	2.4	64.9
Sep 28			974	68	35	0	0	118	0	64		44.9	2.3	64.9
Sep 29			461	50	18	10	0	39	5	16		80.0	2.4	
Sep 30			679	59	49	12	0	44	6	19		47.6	2.3	
TOTAL			27,066	1,999	1,158	143	4	2,905	143	1,128				

AVG.	902	67	39	5	0	97	5	38	61.0	2.5	65.6
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	16,843	1,003
SUMMER	80,288	5,126
FALL	30,657	2,495
TOTAL	127,788	8,624

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
1,179	147	311,072	5,828	11,297	7,952	3

TABLE 154

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

PRIEST RAPIDS PROJECT- FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT	JACK					TROUT			
Oct 1			598	37	47	9		25	10	24		64.0	2.6	64.8
Oct 2			720	50	22	8		29	3	12		65.7	2.6	64.5
Oct 3			565	36	20	0		35	0	11		87.8	2.7	64.3
Oct 4			422	15	21	0		42	0	12		69.7	2.6	64.3
Oct 5			363	35	45	0		56	0	12		86.3	2.4	64.1
Oct 6			327	24	18	3		18	0	6		78.0	2.5	64.0
Oct 7			529	37	28	0		50	0	19		42.9	2.5	63.8
Oct 8			436	20	17	0		17	0	10		60.5	2.7	63.6
Oct 9			940	38	34	10		23	0	12		48.0	0.0	63.4
Oct 10			298	25	11	1		18	0	3		44.1	1.7	63.3
Oct 11			200	19	8	0		21	0	3		113.2	2.8	63.0
Oct 12			209	39	6	0		16	0	8		93.6	2.5	62.4
Oct 13			104	13	7	3		8	0	5		45.9	2.7	62.1
Oct 14			264	40	31	8		30	0	0		135.5	1.5	61.5
Oct 15			219	10	10	3		27	0	6		194.5	42.6	61.1
Oct 16			462	39	21	1		14	5	0		145.7	45.6	60.6
Oct 17			291	16	24	0		25	0	3		118.8	1.8	60.1
Oct 18			82	11	11	0		16	2	1		153.8	2.3	60.1
Oct 19			68	14	30	3		15	0	1		149.4	2.1	60.0
Oct 20			136	10	4	0		7	0	0		145.2	2.4	59.8
Oct 21			109	22	10	0		19	2	3		93.3	2.5	59.6
Oct 22			108	8	18	1		14	1	1		124.7	2.1	59.6
Oct 23			108	14	14	1		5	0	0		89.2	1.8	59.6
Oct 24			223	16	35	0		30	16	2		86.0	2.1	59.5
Oct 25			218	2	4	0		7	0	0		153.8	2.2	59.4
Oct 26			534	32	39	7		31	0	3		189.8	54.3	59.1
Oct 27			485	20	28	0		5	5	2		140.0	2.9	59.0
Oct 28			155	5	12	0		12	0	0		138.3	2.4	58.9
Oct 29			126	6	2	0		3	0	1		139.4	2.3	58.7
Oct 30			142	6	9	0		9	11	4		136.5	2.4	58.7
Oct 31			251	7	0	0		3	0	5		235.7	108.1	
TOTALS			9,692	666	586	58		630	55	169				
AVG.			313	21	19	2		20	2	5		111.9	10.1	61.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	16,843	1,003
SUMMER	80,288	5,126
FALL	40,349	3,161
TOTAL	137,480	9,290

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
1,765	205	311,072	6,458	11,352	8,121	3

TABLE 155

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

PRIEST RAPIDS PROJECT- FISH COUNTS

NOVEMBER 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL											
Nov 1			355	14	3	0		5	0	1		233.6	98.9	58.6
Nov 2			170	6	4	0		3	0	2		151.0	14.8	58.6
Nov 3			59	4	2	0		4	0	2		185.6	53.4	58.6
Nov 4			32	5	4	0		4	9	3		147.6	13.4	58.5
Nov 5			48	1	0	1		7	0	1		192.6	66.9	58.4
Nov 6			40	2	0	0		2	0	0		154.8	38.2	58.1
Nov 7			66	3	3	0		4	0	1		189.7	55.5	57.9
Nov 8			28	3	0	0		1	0	0		200.5	65.7	57.9
Nov 9			44	1	0	0		3	0	1		187.9	99.8	57.8
Nov 10			48	4	0	0		2	0	3		169.5	54.0	57.8
Nov 11			16	0	0	0		2	0	2		180.4	52.4	57.6
Nov 12			22	3	0	0		0	0	0		106.2	1.7	57.4
Nov 13			14	0	0	0		3	0	0		187.9	53.5	57.1
Nov 14			4	0	0	0		0	0	1		132.5	35.2	57.0
Nov 15			14	1	0	0		0	0	1		137.6	56.9	56.8
Nov 16												151.6	60.2	56.3
Nov 17												187.4	52.3	55.8
Nov 18												163.7	85.6	55.2
Nov 19												144.0	68.3	54.8
Nov 20												82.7	0.0	54.2
Nov 21												131.5	0.0	53.8
Nov 22												130.2	0.0	53.5
Nov 23												107.7	0.0	53.2
Nov 24												80.5	0.0	52.8
Nov 25												104.3	0.0	52.5
Nov 26												128.1	0.0	52.5
Nov 27												81.7	0.0	52.3
Nov 28												91.7	0.0	51.9
Nov 29												119.7	0.0	51.5
Nov 30												122.7	0.0	
TOTALS			960	47	16	1		40	9	18				
AVG.			64	3	1	0		3	1	1		146.2	34.2	55.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	16,843	1,003
SUMMER	80,288	5,126
FALL	41,309	3,208
TOTAL	138,440	9,337

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	SHAD	LAMPREY	BULL TROUT
1,781	206	311,072	6,498	11,361	8,139	3

TABLE 156
YEARLY TOTALS OF SALMONIDS COUNTED OVER PRIEST RAPIDS DAM
 1982 - 2016

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
Totals	3,297,755	553,240	4,165,290	145,548	8,161,833
10-Year Average	163,144	19,213	266,890	11,336	460,582

*Jacks included

TABLE 157

MONTHLY COUNT OF STEELHEAD
PRIEST RAPIDS DAM: 1960 - 2016

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
TOTAL	401	561	2881	4,3031	9,1291	8,4261	79,1141	222,9411	317,0491	79,5401	5,0201	631	725,9691
10-Year Average				321	351	1931	2,3461	6,6421	8,1191	1,7391	1081		19,2131

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 PST.
Nov 16 – Dec 31	No video recording or fish counting during this period.

Fish Ladder Operating Schedule

Left Bank Ladder

Jan 1 – Jan 4	Fishway in service.
Jan 5 – Feb 8	Fishway out of service for 2015/2016 annual maintenance period.
Feb 9 – Dec 20	Fishway in service.
Dec 21 – Dec 31	Fishway out of service for 2016/2017 annual maintenance period.

Middle Ladder

Jan 1 – Dec 5	Fishway in service.
Dec 6 – Dec 31	Fishway out of service for 2016/2017 annual maintenance period.

Right Bank Ladder

Jan 1 – Mar 8	Fishway out of service for 2015/2016 annual maintenance period.
Mar 9 – Dec 31	Fishway in service.

Fish Facility Activities

The Rock Island Bypass Trap was operated by Chelan County PUD Natural Resource Department employees from 1 April through 31 August 2016. 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 2016 adult fish migration. PIT tag detections from all three fishways were uploaded daily to PTAGIS.

In 2014, denils were installed at two of the right bank fishway entrances (tailrace entrance and left powerhouse entrance) and one of the left bank fishway entrances (west entrance) to provide continued adult fish passage during low tailwater elevations created by the Wanapum Dam spillway repair and coincidental Wanapum pool drawdown. The denils remained in place throughout 2015. All denils were detached and extracted in January 2016.

TABLE 158

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER ROCK ISLAND DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				108	12,811	29,643	51,626	11,100	8,417	7,236	1,336		122,277
STEELHEAD				24	19	114	981	1,458	3,376	1,120	74		7,166
SOCKEYE					1	106,989	200,791	2,487	61	12	0		310,341
COHO									1,004	1,455	30		2,489
PINK													0
TOTAL				132	12,831	136,746	253,398	15,045	12,858	9,823	1,440		442,273
LAMPREY						36	278	1,912	1,162	547			3,935
BULL TROUT				3	32	11	5						51

TABLE 159

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

ROCK ISLAND PROJECT- FISH COUNTS											APRIL 2016			
DATE	CHINOOK ADULT		CHINOOK FALL	CHINOOK COHO		COHO ADULT JACK	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER		STEELHEAD	TROUT									
Apr 1												132.9	0.0	44.3
Apr 2												78.5	0.0	44.9
Apr 3												135.6	0.0	45.7
Apr 4												138.3	0.0	45.8
Apr 5												147.8	0.0	45.7
Apr 6												144.0	0.0	45.4
Apr 7												105.3	0.0	45.5
Apr 8												101.3	0.0	45.7
Apr 9												122.4	0.1	46.0
Apr 10												160.7	16.8	46.2
Apr 11												152.2	17.8	46.6
Apr 12												158.5	20.5	46.7
Apr 13												180.7	24.2	46.9
Apr 14	1							5	3	0		201.0	44.5	46.9
Apr 15	4							1	0	1		188.9	37.9	46.3
Apr 16	0							2	2	0		191.7	37.0	46.2
Apr 17	3							1	0	0		220.7	66.3	46.3
Apr 18	0							5	3	0		179.4	27.6	46.6
Apr 19	0							1	1	0		196.1	40.1	47.4
Apr 20	2							0	0	0		172.9	24.1	48.0
Apr 21	5							2	2	0		220.0	66.0	48.6
Apr 22	5							1	0	0		216.5	63.7	48.6
Apr 23	11							0	0	0		215.3	78.5	48.7
Apr 24	4							1	0	0		211.3	58.2	49.0
Apr 25	10							0	0	1		185.6	41.5	49.0
Apr 26	7							2	1	0		181.1	36.5	49.2
Apr 27	12							0	0	0		196.0	41.4	49.6
Apr 28	6							1	0	1		187.5	33.3	49.6
Apr 29	16							0	0	0		165.6	20.3	50.6
Apr 30	22							2	0	0		146.4	20.2	50.5
TOTAL	108							24	12	3		167.8	27.2	47.2
AVG.	6							1	1	0				

TABLE 160

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

MAY 2016

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	42			0			0	0	0	0		177.3	25.4	51.4
May 2	38			0			1	0	0	0		168.4	20.2	51.9
May 3	47			0			0	2	0	0		170.6	20.2	52.2
May 4	59			0			0	0	0	1		178.0	23.2	52.4
May 5	161			0			0	0	0	0		189.6	33.3	52.5
May 6	183			0			0	0	0	1		172.3	24.1	53.0
May 7	179			0			0	1	1	0		170.7	20.0	53.3
May 8	107			0			0	2	0	1		143.3	17.9	53.5
May 9	174			0			0	1	1	1		160.1	22.7	53.6
May 10	637			0			0	1	1	2		171.1	23.2	53.8
May 11	765			6			0	1	0	2		160.1	20.2	53.7
May 12	913			7			0	0	0	2		169.2	22.7	54.1
May 13	1,300			12			0	2	2	1		153.0	20.3	54.1
May 14	721			9			0	0	0	0		146.6	17.8	53.5
May 15	696			15			0	0	0	2		147.9	15.9	53.7
May 16	484			8			0	0	0	0		144.9	20.2	54.5
May 17	620			20			0	0	0	2		185.5	30.2	54.8
May 18	768			25			0	1	0	2		125.5	15.9	55.2
May 19	775			53			0	0	0	1		99.7	15.9	55.5
May 20	319			17			0	0	0	3		135.9	15.9	55.4
May 21	546			29			0	1	1	0		75.3	14.1	55.2
May 22	467			31			0	0	0	3		107.6	10.1	55.2
May 23	249			14			0	1	0	1		150.1	17.5	55.5
May 24	243			58			0	1	1	2		139.7	15.9	56.1
May 25	272			50			0	0	0	0		130.9	15.9	56.1
May 26	312			34			0	0	0	0		135.0	15.9	55.9
May 27	355			24			0	1	1	3		172.8	21.1	56.1
May 28	155			16			0	0	0	1		151.6	16.1	56.2
May 29	348			25			0	1	1	0		134.2	29.2	56.3
May 30	216			30			0	3	2	1		147.7	27.8	56.9
May 31	163			14			0	0	0	0		126.7	32.6	57.4
TOTAL	12,314			497			1	19	11	32				
AVG.	397			16			0	1	0	1		149.7	20.7	54.5
RUN YEAR		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT				
TOTALS TO DATE														
SPRING		12,422	497				1	43	23	35				

TABLE 161

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCK ISLAND PROJECT- FISH COUNTS

JUNE 2016

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	131			12			0	0	0	1	0	155.2	28.9	58.1
Jun 2	132			11			1	3	1	0	0	132.5	31.8	57.8
Jun 3	199			8			0	1	1	0	1	160.5	32.0	57.9
Jun 4	180			4			0	1	1	2	0	168.8	32.1	58.4
Jun 5	141			16			3	1	0	0	1	166.8	32.6	58.9
Jun 6	177			11			1	1	0	0	1	152.0	29.1	59.6
Jun 7	201			17			6	0	0	0	7	158.4	29.9	59.9
Jun 8	356			28			7	0	0	0	0	135.6	31.4	59.8
Jun 9	158			6			11	0	0	2	1	120.0	23.2	60.0
Jun 10	344			28			22	1	0	0	2	106.5	30.0	60.0
Jun 11	341			3			70	1	1	2	1	108.9	27.4	59.8
Jun 12	434			4			133	2	1	0	2	153.3	25.4	59.7
Jun 13	535			10			238	2	0	1	0	121.6	30.1	59.5
Jun 14	765			25			403		0	0	0	143.2	30.6	59.1
Jun 15	464			9			507	1	1	1	1	136.0	29.0	58.6
Jun 16	909			17			657	2	2	1	0	121.3	25.8	58.6
Jun 17	757			9			915	1	1	0	0	108.8	25.9	58.4
Jun 18	1,164			26			1,250	6	5	0	0	72.6	23.0	58.6
Jun 19	680			5			790	2	1	0	0	116.5	23.5	58.7
Jun 20	741			20			893	3	1	0	0	104.1	25.1	58.8
Jun 21	1,911			27			2,387	3	3	0	0	129.5	24.7	58.9
Jun 22	1,837			16			4,303	9	6	0	0	148.9	31.0	59.2
Jun 23	1,635			26			5,058	7	1	0	0	111.8	30.0	60.1
Jun 24		1,670		28			6,455	3	2	1	1	149.7	29.9	60.4
Jun 25		1,929		38			8,605	11	5	0	4	136.6	29.3	60.5
Jun 26		2,112		23			8,508	7	6	0	2	165.3	33.7	60.8
Jun 27		2,029		58			10,617	15	9	0	4	150.4	33.7	61.0
Jun 28		2,629		81			16,759	11	8	0	3	132.5	33.5	61.7
Jun 29		1,985		68			19,541	6	5	0	5	147.2	34.9	62.2
Jun 30		2,428		35			18,849	14	10	0	0	155.7	34.5	62.8
TOTAL	14,192	14,782		669			106,989	114	71	11	36			
AVG.	617	2,112		22			3,566	4	2	0	1	135.7	29.4	59.6

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	14,782	331
TOTALS	41,396	1,166

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
106,990	157	94	46	36

TABLE 162

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

ROCK ISLAND PROJECT- FISH COUNTS

JULY 2016

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		3,118		74			19,242	14	10	1	4	165.7	30.5	63.1
Jul 2		2,647		54			20,750	21	9	0	3	119.9	27.0	63.3
Jul 3		2,916		100			20,150	15	5	0	3	133.2	26.8	63.3
Jul 4		2,747		94			20,123	27	14	0	6	98.5	26.9	62.9
Jul 5		2,341		83			19,693	27	20	1	0	132.2	28.8	62.8
Jul 6		1,531		57			13,220	19	11	0	2	121.6	28.7	62.8
Jul 7		1,891		53			11,459	14	7	0	1	85.7	30.0	62.8
Jul 8		1,466		67			6,844	18	7	1	6	126.8	27.1	62.7
Jul 9		2,255		100			8,473	23	11	0	1	106.3	25.2	62.5
Jul 10		2,263		56			6,907	18	6	0	1	119.2	23.0	62.0
Jul 11		2,132		83			7,281	14	5	0	1	121.6	27.5	62.0
Jul 12		1,666		84			7,582	26	12	0	2	105.6	26.2	62.3
Jul 13		1,265		58			5,718	31	14	0	3	141.8	25.1	62.8
Jul 14		1,722		31			5,291	22	11	0	2	108.5	24.3	63.3
Jul 15		1,306		57			5,099	28	10	0	1	141.9	26.0	63.5
Jul 16		1,775		61			3,186	31	18	0	7	118.8	26.2	63.3
Jul 17		1,343		51			2,639	33	16	0	2	147.1	23.0	63.2
Jul 18		1,350		74			2,313	32	20	0	8	134.2	24.9	63.2
Jul 19		1,356		94			2,050	47	25	2	20	117.7	24.7	63.4
Jul 20		1,189		66			2,132	63	22	0	6	132.0	25.3	63.6
Jul 21		1,330		49			1,581	30	13	0	6	147.8	25.0	63.7
Jul 22		1,313		62			1,638	29	12	0	41	107.4	23.0	63.9
Jul 23		1,323		43			1,638	35	9	0	8	103.5	22.8	64.2
Jul 24		1,040		63			1,181	43	16	0	11	96.9	25.8	64.7
Jul 25		1,028		75			898	25	7	0	11	114.9	25.2	65.1
Jul 26		1,405		71			1,137	43	13	0	22	130.1	26.0	65.4
Jul 27		618		24			569	36	14	0	23	156.2	25.0	65.9
Jul 28		832		57			548	59	28	0	21	134.2	25.9	66.2
Jul 29		838		44			557	46	10	0	11	133.5	25.8	65.9
Jul 30		863		42			455	56	22	0	17	106.5	24.9	65.8
Jul 31		768		62			437	56	22	0	28	133.9	23.0	65.9
TOTAL		49,637		1,989			200,791	981	419	5	278			
AVG.		1,601		64			6,477	32	14	0	9	124.0	25.8	63.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	64,419	2,320
TOTALS	91,033	3,155

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
307,781	1,138	513	51	314

TABLE 163

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

ROCK ISLAND PROJECT- FISH COUNTS

AUGUST 2016

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		970		87			377	47	23		36	131.6	29.4	66.5
Aug 2		806		60			350	74	25		43	121.6	25.8	66.7
Aug 3		362		31			221	41	24		33	108.6	26.0	66.9
Aug 4		498		44			174	39	20		33	132.6	25.1	66.7
Aug 5		247		35			148	30	11		61	122.3	22.7	66.6
Aug 6		331		44			143	34	15		43	90.0	20.8	66.2
Aug 7		396		55			161	44	20		50	85.3	20.3	65.9
Aug 8		463		61			117	44	20		32	88.6	22.8	65.9
Aug 9		431		56			105	40	19		33	92.8	23.4	65.8
Aug 10		280		37			90	59	26		53	99.7	23.2	65.7
Aug 11		490		105			79	68	36		34	129.6	23.7	66.1
Aug 12		242		80			71	69	21		68	132.5	0.0	66.5
Aug 13		317		92			51	32	15		52	104.4	0.0	66.7
Aug 14		245		36			50	57	26		44	112.7	0.0	66.7
Aug 15		134		32			39	27	13		41	90.0	0.0	67.0
Aug 16		321		78			49	26	12		103	105.4	0.0	67.3
Aug 17		333		61			64	50	25		64	121.3	0.0	67.5
Aug 18		321		59			33	46	24		72	122.4	0.0	67.9
Aug 19		263		50			30	49	25		130	117.3	0.0	67.8
Aug 20		269		77			31	62	21		57	97.6	0.0	67.6
Aug 21		172		26			18	58	22		81	79.7	0.0	67.6
Aug 22		134		46			14	46	26		99	104.5	0.0	67.4
Aug 23		158		39			17	44	15		106	118.4	0.0	67.3
Aug 24		202		82			11	37	16		74	122.5	0.0	67.3
Aug 25		119		36			9	50	17		47	115.4	0.0	67.2
Aug 26		230		66			8	45	20		73	119.5	0.0	67.1
Aug 27		167		42			7	50	26		91	59.4	0.0	67.3
Aug 28		128		17			9	39	16		69	105.4	0.0	66.9
Aug 29		165		66			4	55	20		83	90.5	0.0	66.4
Aug 30		130		25			5	56	27		58	78.5	0.0	66.1
Aug 31		95		56			2	40	17		49	43.1	0.0	66.0
TOTAL		9,419		1,681			2,487	1,458	643		1,912			
AVG.		304		54			80	47	21		62	104.6	8.5	66.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	73,838	4,001
TOTALS	100,452	4,836

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
310,268	2,596	1,156	51	2,226

TABLE 164

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

ROCK ISLAND PROJECT- FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F
	SPRING	SUMMER	FALL	JACK	ADULT									
Sep 1		50		38	0	0	0	23	11		69	103.2	0.0	66.0
Sep 2			95	40	0	0	9	48	19		69	74.7	0.0	65.8
Sep 3			74	27	1	0	5	39	17		63	69.7	0.0	65.7
Sep 4			145	14	2	0	1	48	14		55	62.9	0.0	65.5
Sep 5			118	35	0	1	6	35	10		37	41.8	0.0	65.1
Sep 6			81	29	0	1	1	28	6		28	68.4	0.0	65.1
Sep 7			83	22	1	1	5	27	15		48	59.9	0.0	65.1
Sep 8			83	18	0	0	0	35	16		30	65.8	0.0	65.1
Sep 9			181	59	0	0	3	61	19		43	122.9	0.0	65.1
Sep 10			125	30	0	0	4	60	26		137	94.9	0.0	65.4
Sep 11			201	11	2	1	2	54	12		81	68.9	0.0	65.3
Sep 12			295	37	1	2	5	87	27		28	42.3	0.0	65.3
Sep 13			255	33		0	2	137	49		15	85.1	0.0	65.0
Sep 14			271	25	5	1	1	147	59		15	49.1	0.0	64.9
Sep 15			182	19	6	0	4	105	42		19	64.5	0.0	65.0
Sep 16			241	14	8	0	2	101	35		24	64.5	0.0	65.3
Sep 17			293	33	16	3	2	144	44		63	25.4	0.0	65.7
Sep 18			325	34	15	2	1	196	60		32	58.4	0.0	65.6
Sep 19			749	50	15	0	5	258	60		33	45.5	0.0	65.6
Sep 20			666	77	37	0	0	247	66		32	77.1	0.0	65.1
Sep 21			449	31	73	3	0	222	74		18	68.3	0.0	64.6
Sep 22			382	29	68	1	0	182	52		27	49.9	0.0	64.4
Sep 23			390	38	76	6	0	133	39		10	27.3	0.0	64.6
Sep 24			250	26	86	2	0	144	60		29	54.9	0.0	64.7
Sep 25			221	19	62	4	0	175	42		50	78.5	0.0	64.9
Sep 26			237	36	64	6	1	122	40		16	66.5	0.0	65.1
Sep 27			273	25	67	7	0	134	46		13	75.8	0.0	65.3
Sep 28			227	22	130	9	0	133	29		24	62.7	0.0	65.1
Sep 29			234	16	106	2	0	108	30		32	42.0	0.0	64.9
Sep 30			326	28	110	1	2	143	28		22	46.4	0.0	65.2
TOTAL		50	7,452	915	951	53	61	3,376	1,047		1,162			
AVG.			257	31	33	2	2	113	35		39	63.9	0.0	65.2

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	73,888	4,039
FALL	7,452	877
TOTALS	107,954	5,751

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
951	53	310,329	5,972	2,203	51	3,388

TABLE 165

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

ROCK ISLAND PROJECT- FISH COUNTS

OCTOBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD		TROUT	KCFS		KCFS
Oct 1			213	17	99	4	1	112	25		61	97.1	0.0	65.1
Oct 2			360	29	64	9	2	102	20		58	42.7	0.0	64.9
Oct 3			307	35	52	8	2	64	16		26	85.3	0.0	64.6
Oct 4			235	28	64	6	0	54	24		110	31.3	0.0	64.4
Oct 5			122	10	33	2	1	52	12		19	64.6	0.0	64.2
Oct 6			293	28	39	0	0	65	21		7	56.5	0.0	64.0
Oct 7			208	21	55	2	0	55	17		4	59.6	0.0	63.6
Oct 8			221	19	46	1	0	54	14		26	66.5	0.0	63.5
Oct 9			236	15	61	10	1	57	11		39	108.5	0.0	63.4
Oct 10			267	17	22	4	0	40	7		27	75.0	0.0	62.8
Oct 11			292	18	37	2	1	47	13		20	66.9	0.0	62.4
Oct 12			190	24	34	0	1	55	15		6	81.6	0.0	61.9
Oct 13			220	16	46	3	0	47	20		2	91.2	0.0	61.7
Oct 14			267	20	52	1	0	46	11		3	79.9	0.0	61.3
Oct 15			205	13	65	0	0	26	8		2	86.7	0.0	60.9
Oct 16			223	17	51	1	0	18	7		15	70.1	0.0	60.6
Oct 17			162	20	68	3	0	26	8		26	93.6	0.0	60.4
Oct 18			144	13	51	2	1	16	3		9	78.9	0.0	60.4
Oct 19			105	10	51	2	0	15	7		6	99.5	0.0	60.2
Oct 20			131	5	62	4	0	25	8		9	87.2	0.0	60.2
Oct 21			141	2	43	1	0	24	7		4	75.9	0.0	59.5
Oct 22			123	7	57	0	0	9	5		3	68.0	0.0	59.4
Oct 23			88	7	33	1	0	10	2		3	109.5	0.0	59.6
Oct 24			118	5	38	3	0	11	4		4	83.3	0.0	59.7
Oct 25			148	3	45	0	0	16	5		3	110.5	0.0	59.7
Oct 26			242	6	39	1	0	17	5		5	90.0	0.0	59.8
Oct 27			274	6	26	0	2	10	4		21	96.8	0.0	59.6
Oct 28			165	1	15	1	0	12	1		10	88.5	0.0	59.4
Oct 29			452	6	18	0	0	8	3		5	114.4	0.0	59.3
Oct 30			347	10	12	1	0	15	9		8	115.9	0.0	59.0
Oct 31			294	15	4	1	0	12	3		6	145.5	0.0	58.9
TOTAL			6,793	443	1,382	73	12	1,120	315		547			

AVG.			219	14	45	2	0	36	10		18	84.5	0.0	61.4
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	73,888	4,039
FALL	14,245	1,320
TOTALS	114,747	6,194

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
2,333	126	310,341	7,092	2,518	51	3,935

TABLE 166

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

ROCK ISLAND PROJECT- FISH COUNTS

NOVEMBER 2016

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			182	0	8	1	0	4	0		2	108.7	0.0	58.9
Nov 2			196	3	2	1	0	9	1		0	80.5	0.0	58.6
Nov 3			139	0	4	0	0	5	1		0	94.5	0.0	58.4
Nov 4			228	3	4	0	0	5	1		2	117.1	0.0	58.3
Nov 5			176	1	1	0	0	4	2		0	116.7	0.0	58.2
Nov 6			101	0	2	0	0	6	1		0	104.0	0.0	58.2
Nov 7			59	2	1	0	0	5	3		0	115.0	0.0	58.0
Nov 8			76	1	1	1	0	3	1		0	94.9	0.0	57.7
Nov 9			40	2	1	0	0	9	3		0	145.7	0.0	57.6
Nov 10			34	0	0	0	0	7	3		0	122.4	0.0	57.5
Nov 11			39	1	0	0	0	6	5		0	120.7	0.0	57.3
Nov 12			20	0	1	0	0	4	0		0	99.2	0.0	57.1
Nov 13			16	0	0	1	0	3	1		0	90.7	0.0	56.8
Nov 14			6	0	0	0	0	2	0		0	125.0	0.0	56.4
Nov 15			11	0	1	0	0	2	0		0	101.3	0.0	56.1
Nov 16												89.2	0.0	55.5
Nov 17												120.2	0.0	55.0
Nov 18												115.7	0.0	54.7
Nov 19												114.2	0.0	54.3
Nov 20												113.5	0.0	54.0
Nov 21												103.2	0.0	53.8
Nov 22												141.3	0.0	53.5
Nov 23												112.9	0.0	53.2
Nov 24												86.8	0.0	52.9
Nov 25												106.4	0.0	52.7
Nov 26												111.8	0.0	52.7
Nov 27												105.0	0.0	52.5
Nov 28												149.6	0.0	52.3
Nov 29												118.1	0.0	52.1
Nov 30												47.1	0.0	51.8
TOTAL			1,323	13	26	4	0	74	22	0	4			
AVG.			88	1	2	0	0	5	1			109.0	0.0	55.5

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	26,614	835
SUMMER	73,888	4,039
FALL	15,568	1,333
TOTALS	116,070	6,207

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
2,359	130	310,341	7,166	2,540	51	3,939

TABLE 167

**MONTHLY COUNT OF STEELHEAD
ROCK ISLAND DAM 1981 - 2016**

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
Total				2,431	2,510	4,125	49,745	152,946	230,660	65,934	6,254		514,605
10-Year Average				84	52	96	1,522	5,720	7,732	1,834	141		17,180

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	No video recording or fish counting during this period.

Fish Ladder Operating Schedule

Jan 1 to Jan 3	Fishway in service.
Jan 4 to Feb 24	Fishway out of service for 2015/2016 annual maintenance period.
Feb 25 to Dec 11	Fishway in service.
Dec 12 – Dec 31	Fishway out of service for 2016/2017 annual maintenance period.

Fish Facility Activities

The adult fish PIT tag system was operational throughout the 2016 adult fish migration. 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 2016. Juvenile fish sampling occurred over the same time frame. The annual bypass (biological) evaluation included the collection of species composition and fish condition data.

TABLE 168

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER ROCKY REACH DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*				25	5,443	17,006	40,082	10,901	6,341	5,220	1,234		86,252
STEELHEAD				61	28	48	614	1,153	2,666	1,079	79		5,728
SOCKEYE					1	69,891	163,497	2,465	66	4	1		235,925
COHO									135	280	3		418
PINK													0
TOTAL				86	5,472	86,945	204,193	14,519	9,208	6,583	1,317		328,323
LAMPREY						6	222	1,992	1,117	214	2		3,553
BULL TROUT				1	88	28	4	3	0	5	7		136

TABLE 169

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

ROCKY REACH PROJECT- FISH COUNTS

APRIL 2016

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												126.0	0.0	43.9
Apr 2												66.0	0.0	44.7
Apr 3												131.8	0.0	45.3
Apr 4												136.0	8.6	45.5
Apr 5												145.0	2.2	45.5
Apr 6												136.8	0.0	45.3
Apr 7												76.8	0.0	45.2
Apr 8												66.7	0.0	45.3
Apr 9												82.5	0.0	45.5
Apr 10												131.8	0.0	46.0
Apr 11												138.0	0.0	46.3
Apr 12												141.8	0.0	46.5
Apr 13												173.7	20.3	46.6
Apr 14	0			0				8	2	0		195.2	46.2	46.4
Apr 15	0			0				6	3	0		176.9	27.8	45.9
Apr 16	1			0				3	2	0		187.6	30.9	46.1
Apr 17	0			1				8	2	0		204.7	49.9	46.1
Apr 18	1			0				1	1	0		169.4	15.0	46.9
Apr 19	2			0				6	2	0		196.6	42.5	47.4
Apr 20	0			0				3	2	0		148.6	2.7	47.9
Apr 21	0			0				0	0	0		219.7	61.1	48.2
Apr 22	0			0				1	0	0		206.8	52.9	48.7
Apr 23	1			0				3	2	0		202.6	46.7	48.9
Apr 24	5			0				8	0	0		198.5	41.2	48.9
Apr 25	2			0				2	1	0		171.2	15.0	49.1
Apr 26	4			0				0	0	0		172.6	15.5	49.2
Apr 27	0			0				1	0	0		186.8	31.0	49.6
Apr 28	3			0				6	0	0		182.8	26.6	49.5
Apr 29	0			0				4	1	1		150.2	0.0	50.5
Apr 30	5			0				1	0	0		150.2	0.0	50.4
TOTAL	24			1				61	18	1				
AVG.	1			0				4	1	0		155.8	17.9	47.0

TABLE 170
MONTHLY FISH PASSAGE SUMMARY REPORT
U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS											MAY 2016			
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	8			0			0	2	0	0		168.5	11.2	51.2
May 2	9			0			0	2	0	0		156.9	0.0	51.7
May 3	17			0			0	1	1	0		151.5	15.2	52.1
May 4	16			0			0	1	1	0		175.8	52.4	52.3
May 5	18			0			0	1	1	0		181.8	28.3	52.7
May 6	49			0			0	0	0	0		156.4	0.0	53.1
May 7	75			0			0	0	0	0		144.6	0.0	53.2
May 8	71			0			0	1	0	2		144.6	33.8	53.7
May 9	59			0			0	1	0	4		140.4	0.0	53.8
May 10	83			0			0	0	0	1		156.6	0.6	53.7
May 11	162			1			0	3	0	2		138.7	5.7	53.5
May 12	341			1			0	0	0	1		156.5	1.2	54.0
May 13	359			4			1	3	2	4		137.8	0.0	53.6
May 14	610			10			0	1	1	6		148.3	0.0	53.6
May 15	270			5			0	1	0	2		131.1	0.0	54.1
May 16	191			4			0	0	0	4		135.7	0.0	54.6
May 17	262			5			0	2	0	1		183.4	46.7	54.8
May 18	266			15			0	1	1	5		106.9	0.0	55.4
May 19	349			9			0	0	0	4		77.1	0.0	55.7
May 20	379			19			0	1	1	10		106.2	0.0	55.5
May 21	217			14			0	2	0	3		62.4	0.0	55.2
May 22	136			3			0	0	0	3		115.4	0.0	55.6
May 23	183			14			0	0	0	7		148.1	0.0	55.7
May 24	135			54			0	0	0	4		125.8	0.0	55.9
May 25	138			26			0	0	0	2		118.4	0.0	55.7
May 26	128			13			0	0	0	7		118.8	0.0	55.9
May 27	119			23			0	0	0	4		158.9	2.7	56.1
May 28	176			14			0	0	0	3		153.2	0.0	56.1
May 29	108			4			0	0	0	1		119.4	13.2	56.3
May 30	134			10			0	2	1	3		116.0	10.6	56.8
May 31	116			11			0	3	2	5		124.4	12.6	57.2
TOTAL	5,184			259			1	28	11	88				
AVG.	167			8				1	0	3		137.4	7.6	54.5
RUN YEAR														
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK				SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT				
SPRING		5,208	260				1	89	29	89				

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

JUNE 2016

DATE	CHINOOK ADULT		CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER											
Jun 1	105		12			0	0	0	2	0	140.8	13.2	57.6
Jun 2	63		0			1	0	0	3	0	123.2	10.8	57.5
Jun 3	61		6			0	0	0	4	0	142.7	8.2	57.8
Jun 4	74		7			1	0	0	2	0	155.7	10.8	58.1
Jun 5	42		2			0	1	1	2	0	130.3	10.8	58.7
Jun 6	87		4			2	1	1	3	0	138.9	11.8	59.5
Jun 7	96		6			0	1	1	1	0	130.7	10.7	59.3
Jun 8	78		7			3	0	0	2	1	118.0	11.0	59.8
Jun 9	105		8			11	0	0	0	1	131.2	10.9	60.0
Jun 10	150		2			14	1	0	3	0	82.9	11.3	59.9
Jun 11	99		2			13	1	0	2	0	117.6	10.6	59.7
Jun 12	201		2			31	2	1	0	0	126.8	9.2	59.5
Jun 13	163		3			96	0	0	0	0	104.7	11.0	59.2
Jun 14	354		7			112	1	0	0	0	127.9	10.7	58.8
Jun 15	528		4			297	2	1	1	1	118.8	13.2	58.8
Jun 16	167		5			299	0	0	0	0	112.8	10.4	58.4
Jun 17	742		7			611	1	1	0	0	115.5	10.3	58.5
Jun 18	301		1			554	1	0	2	0	75.3	9.0	59.0
Jun 19	825		6			1,000	0	0	0	0	133.4	9.3	58.6
Jun 20	355		1			802	0	0	0	0	84.8	12.5	58.3
Jun 21	619		3			897	1	1	0	0	121.3	9.1	58.6
Jun 22	922		14			1,532	2	2	0	0	115.4	11.6	59.5
Jun 23	1,356		10			3,965	2	1	0	0	113.9	11.2	60.1
Jun 24		1,267	43			4,840	4	0	0	0	141.4	11.1	60.3
Jun 25		961	11			4,664	4	1	1	1	127.2	10.7	60.5
Jun 26		1,312	25			6,304	2	1	0	0	149.0	12.9	60.4
Jun 27		1,289	34			7,107	5	3	0	0	148.1	13.0	60.8
Jun 28		1,420	27			9,737	6	3	0	0	116.1	12.6	61.5
Jun 29		1,724	41			14,279	8	6	0	0	135.0	13.5	61.7
Jun 30		1,206	34			12,719	2	1	0	2	140.9	13.6	62.6
TOTAL	7,493	9,179	334			69,891	48	25	28	6			
AVG.	326	1311	11			2330	2	1	1	0	124.0	11.2	59.4

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	9,179	215
TOTALS	21,880	594

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
69,892	137	54	117	6

TABLE 172

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

ROCKY REACH PROJECT- FISH COUNTS

JULY 2016

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		1,629		57			14,933	8	5	0	3	143.5	12.7	62.8
Jul 2		1,930		53			13,793	5	1	0	1	114.2	10.7	62.9
Jul 3		1,734		43			15,258	9	4	0	3	117.9	11.0	62.9
Jul 4		2,254		63			15,411	12	6	0	4	113.4	10.2	62.7
Jul 5		2,089		75			15,404	15	10	0	3	116.3	11.6	62.6
Jul 6		1,677		48			14,607	19	13	0	2	123.5	10.8	62.5
Jul 7		1,067		32			9,607	12	6	1	2	111.1	10.5	62.5
Jul 8		1,180		31			7,569	10	5	0	7	108.3	10.5	62.1
Jul 9		1,163		24			5,279	8	4	0	3	93.7	8.3	61.9
Jul 10		1,614		52			5,188	6	4	0	1	112.2	8.8	61.7
Jul 11		1,588		43			5,425	14	5	0	1	108.2	10.1	61.8
Jul 12		1,825		77			7,323	14	3	0	1	113.2	8.3	62.2
Jul 13		1,257		39			5,190	15	5	0	2	119.8	8.8	62.7
Jul 14		928		34			4,244	16	4	0	2	90.1	8.8	63.1
Jul 15		1,272		49			3,771	12	1	1	1	144.8	75.9	63.2
Jul 16		796		17			2,909	14	9	0	4	112.3	9.8	62.9
Jul 17		1,313		60			2,216	23	6	0	3	138.9	19.1	63.0
Jul 18		1,307		72			3,438	32	9	0	5	113.8	9.3	63.1
Jul 19		890		38			1,208	10	5	0	4	110.4	9.2	63.2
Jul 20		918		36			1,304	18	7	0	2	112.6	9.6	63.3
Jul 21		920		39			1,283	20	9	0	3	145.6	25.9	63.5
Jul 22		955		60			1,370	36	15	0	6	95.7	8.7	63.8
Jul 23		1,180		43			1,269	34	16	0	18	77.8	8.9	64.0
Jul 24		1,180		45			1,089	26	12	0	15	84.1	10.5	64.5
Jul 25		905		84			1,074	39	9	1	13	101.6	18.0	64.7
Jul 26		1,001		72			774	24	13	0	9	123.9	9.9	65.1
Jul 27		1,096		118			887	24	5	1	25	151.1	31.0	65.6
Jul 28		637		76			480	29	9	0	9	130.1	10.3	65.4
Jul 29		582		31			404	25	10	0	22	130.2	10.7	65.4
Jul 30		791		30			400	35	12	0	23	106.2	10.5	65.5
Jul 31		805		58			390	50	20	0	25	129.8	8.7	66.1
TOTALS		38,483		1,599			163,497	614	242	4	222			

AVG.	1241	52	5,274	20	8	0	7	115.9	13.8	63.4
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	47,662	1,814
TOTAL	60,363	2,193

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
233,389	751	296	121	228

TABLE 173

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

AUGUST 2016

DATE	CHINOOK ADULT			CHINOOK JACK	COHO COHO		SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F
	SPRING	SUMMER	FALL		ADULT	JACK								
Aug 1		807		36			381	46	14	0	14	128.3	10.1	66.5
Aug 2		1,011		75			326	52	25	1	28	107.9	10.1	66.5
Aug 3		746		70			251	55	24	1	50	104.4	10.1	66.4
Aug 4		381		70			178	33	13	0	28	130.8	10.0	66.2
Aug 5		414		45			183	39	16	0	43	90.2	8.3	65.9
Aug 6		278		32			122	50	25	1	41	94.9	8.2	65.7
Aug 7		346		33			105	27	14	0	49	90.2	8.1	65.8
Aug 8		303		35			136	35	13	0	46	80.3	9.1	65.8
Aug 9		380		59			76	12	5	0	29	98.9	8.3	65.4
Aug 10		562		46			114	44	21	0	52	104.2	9.0	65.5
Aug 11		310		45			78	39	19	0	52	129.8	10.3	65.9
Aug 12		417		107			81	51	23	0	41	130.1	10.3	66.3
Aug 13		228		55			43	47	19	0	34	99.1	8.7	66.3
Aug 14		222		67			45	30	8	0	47	96.2	8.3	66.6
Aug 15		250		28			43	38	12	0	63	80.4	10.0	66.7
Aug 16		159		27			44	43	23	0	44	100.4	0.0	66.9
Aug 17		395		64			62	20	8	0	75	120.1	0.0	67.3
Aug 18		297		21			26	35	17	0	90	151.5	34.0	67.4
Aug 19		139		70			25	35	17	0	60	100.0	0.0	67.3
Aug 20		157		28			14	28	11	0	96	82.6	0.0	67.2
Aug 21		251		72			26	40	20	0	75	77.2	0.0	67.5
Aug 22		251		28			29	44	15	0	88	109.5	0.0	67.2
Aug 23		135		53			17	33	13	0	78	98.0	0.0	67.0
Aug 24		105		8			9	29	9	0	94	104.4	0.0	66.9
Aug 25		153		44			10	39	26	0	135	94.3	0.0	66.8
Aug 26		35		24			8	16	9	0	71	118.9	0.0	66.7
Aug 27		210		73			4	41	12	0	89	49.2	0.0	66.8
Aug 28		164		25			5	46	16	0	106	96.1	0.0	66.3
Aug 29		143		48			10	37	11	0	104	78.9	0.0	65.9
Aug 30		118		35			6	36	22	0	76	72.4	0.0	65.9
Aug 31		82		29			8	33	8	0	94	62.2	0.0	65.7
TOTAL		9,449		1,452			2,465	1,153	488	3	1,992			

AVG.	305	47	80	37	16	0	64	99.4	5.6	66.5
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	57,111	3,266
TOTALS	69,812	3,645

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
235,854	1,904	784	124	2,220

TABLE 174

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

ROCKY REACH PROJECT- FISH COUNTS

SEPTEMBER 2016

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		77		42	0	0	3	23	7		47	103.1	0.0	65.9
Sep 2			80	47	0	0	3	19	4		42	74.6	0.0	65.8
Sep 3			62	24	0	0	3	48	23		85	69.6	0.0	65.5
Sep 4			51	7	0	0	3	25	6		119	39.2	0.0	65.0
Sep 5			103	36	0	0	3	31	15		58	30.8	0.0	64.9
Sep 6			86	23	0	0	4	31	10		42	48.1	0.0	64.9
Sep 7			67	18	0	0	4	25	8		42	29.8	0.0	65.0
Sep 8			76	13	0	0	4	29	10		30	60.2	0.0	65.2
Sep 9			64	23	0	1	2	25	5		30	115.4	0.0	65.2
Sep 10			62	22	0	0	3	30	10		50	48.7	0.0	65.3
Sep 11			87	9	0	1	1	58	29		41	65.8	0.0	65.3
Sep 12			151	11	0	1	5	59	13		50	47.3	0.0	65.0
Sep 13			321	34	2	0	8	80	24		77	64.1	0.0	64.9
Sep 14			171	9	0	1	2	97	51		30	53.8	0.0	64.7
Sep 15			210	14	1	2	2	103	37		19	64.5	0.0	65.0
Sep 16			181	26	1	0	1	99	32		44	52.2	0.0	65.5
Sep 17			65	19	0	0	0	68	26		20	17.5	0.0	65.7
Sep 18			389	24	0	1	0	182	60		31	43.7	0.0	65.7
Sep 19			356	19	2	0	0	173	64		47	50.3	0.0	65.4
Sep 20			587	32	1	0	4	160	43		33	63.5	0.0	64.8
Sep 21			529	52	2	0	3	186	52		17	88.2	0.0	64.5
Sep 22			259	12	6	0	1	200	49		22	42.8	0.0	64.8
Sep 23			159	13	5	0	1	91	32		19	34.3	0.0	64.9
Sep 24			270	40	12	1	0	126	23		7	57.5	0.0	64.8
Sep 25			172	22	7	0	1	163	56		22	53.4	0.0	65.0
Sep 26			217	20	17	0	0	109	37		19	60.2	0.0	65.0
Sep 27			170	31	13	1	3	129	27		26	63.7	0.0	65.0
Sep 28			182	19	16	3	1	82	25		18	58.6	0.0	64.9
Sep 29			192	17	24	2	1	117	17		11	55.5	0.0	65.1
Sep 30			251	16	12	0	0	98	14		19	34.0	0.0	65.2
TOTAL		77	5,570	694	121	14	66	2,666	809		1,117			
AVG.			192	23	4	0	2	89	27		37	56.3	0.0	65.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	57,188	3,308
FALL	5,570	652
TOTALS	75,459	4,339

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
121	14	235,920	4,570	1,593	124	3,337

TABLE 175

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

ROCKY REACH PROJECT- FISH COUNTS

OCTOBER 2016

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			283	36	10	0	0	119	27	0	28	91.2	0.0	65.2
Oct 2			200	18	12	1	0	103	19	0	19	66.9	0.0	64.9
Oct 3			250	27	21	1	0	103	22	0	17	55.4	0.0	64.6
Oct 4			228	11	15	0	1	73	21	0	12	27.4	0.0	64.4
Oct 5			191	15	12	2	0	47	10	0	22	53.2	0.0	64.3
Oct 6			147	0	13	1	0	30	7	0	13	49.1	0.0	63.9
Oct 7			197	8	8	2	0	36	9	0	17	59.1	0.0	63.6
Oct 8			212	10	7	1	0	50	16	0	12	21.6	0.0	63.5
Oct 9			154	16	25	0	0	48	11	0	10	93.7	0.0	63.3
Oct 10			149	7	18	1	0	41	11	0	13	47.6	0.0	63.0
Oct 11			249	15	10	0	0	38	3	0	4	52.5	0.0	62.5
Oct 12			105	14	4	0	0	31	9	0	4	76.6	0.0	62.2
Oct 13			171	8	3	2	1	62	21	0	8	83.1	0.0	61.8
Oct 14			207	17	4	0	0	36	9	0	1	64.6	0.0	61.6
Oct 15			125	4	8	0	0	26	6	0	5	70.3	0.0	61.4
Oct 16			136	11	11	0	0	39	5	0	3	77.2	0.0	61.0
Oct 17			160	14	5	0	0	20	7	0	1	60.0	0.0	60.9
Oct 18			104	3	5	0	0	11	2	0	6	57.8	0.0	60.7
Oct 19			166	8	10	0	0	23	9	0	1	102.7	0.0	60.6
Oct 20			103	12	9	0	0	18	5	1	8	76.8	0.0	60.5
Oct 21			93	5	14	0	0	26	4	0	0	65.6	0.0	60.6
Oct 22			111	3	6	0	0	11	3	0	1	70.7	0.0	60.5
Oct 23			98	4	5	0	1	17	5	2	1	82.4	0.0	60.3
Oct 24			87	3	5	0	0	8	1	0	2	63.0	0.0	60.3
Oct 25			127	0	6	0	0	5	2	1	0	108.3	0.0	60.2
Oct 26			93	5	4	1	0	9	1	1	0	80.3	0.0	60.2
Oct 27			97	1	6	0	1	11	3	0	1	56.6	0.0	60.1
Oct 28			134	3	8	0	0	7	1	0	4	76.7	0.0	60.0
Oct 29			139	1	2	0	0	11	4	0	1	93.3	0.0	59.8
Oct 30			201	2	1	0	0	7	2	0	0	82.7	0.0	59.5
Oct 31			219	3	1	0	0	13	6	0	0	135.5	20.2	59.4
TOTAL			4,936	284	268	12	4	1,079	261	5	214			
AVG.			159	9	9	0	0	35	8	0	7	71.0	0.7	61.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	57,188	3,308
FALL	10,506	936
TOTALS	80,395	4,623

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
389	26	235,924	5,649	1,854	129	3,551

TABLE 176

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

ROCKY REACH PROJECT- FISH COUNTS

NOVEMBER 2016

DATE	CHINOOK ADULT			CHINOOK	COHO	COHO	WILD		BULL	LAMPREY	DISCH KCFS	SPILL KCFS	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT	JACK	STEELHEAD	STEELHEAD	TROUT					
Nov 1			228	3	1	1	0	8	2	1	1	103.9	0.0	59.1
Nov 2			170	5	0	0	0	11	2	0	0	62.5	0.0	58.9
Nov 3			154	2	0	0	1	4	2	0	0	84.5	0.0	58.8
Nov 4			110	0	0	0	0	2	0	0	0	78.5	0.0	58.6
Nov 5			178	4	0	0	0	14	1	0	0	106.3	0.0	58.5
Nov 6			62	0	0	0	0	6	3	0	1	105.0	0.0	58.4
Nov 7			64	2	1	0	0	4	2	1	0	114.8	25.0	58.1
Nov 8			78	0	0	0	0	3	2	2	0	109.9	0.0	58.0
Nov 9			50	2	0	0	0	7	2	1	0	132.3	14.7	57.9
Nov 10			49	1	0	0	0	3	1	1	0	111.9	0.0	57.6
Nov 11			13	0	0	0	0	3	3	0	0	107.7	0.0	57.4
Nov 12			23	3	0	0	0	3	1	0	0	94.2	0.0	57.3
Nov 13			19	0	0	0	0	3	3	1	0	77.7	0.0	57.0
Nov 14			6	0	0	0	0	6	1	0	0	117.4	0.0	56.6
Nov 15			8	0	0	0	0	2	1	0	0	96.7	0.0	56.4
Nov 16												95.3	0.0	55.9
Nov 17												106.4	0.0	55.5
Nov 18												103.0	0.0	55.0
Nov 19												99.5	0.0	54.6
Nov 20												104.1	0.0	54.2
Nov 21												89.3	0.0	54.1
Nov 22												111.8	0.0	53.7
Nov 23												83.7	0.0	53.5
Nov 24												58.6	0.0	53.3
Nov 25												96.2	0.0	52.9
Nov 26												96.3	0.0	52.9
Nov 27												95.4	0.0	52.8
Nov 28												130.5	63.5	52.5
Nov 29												114.9	25.5	52.3
Nov 30												77.9	30.6	51.9
TOTAL			1,212	22	2	1	1	79	26	7	2			
AVG.			81	1	0	0	0	5	2	0	0	98.9	5.3	55.8

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	12,701	379
SUMMER	57,188	3,308
FALL	11,718	958
TOTALS	81,607	4,645

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
391	27	235,925	5,728	1,880	136	3,553

TABLE 177

**MONTHLY COUNT OF STEELHEAD
ROCKY REACH DAM: 1981 - 2016**

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
Total				4,060	2,846	2,741	29,855	106,083	169,363	57,362	6,744		379,054
10-Year Average				224	117	72	924	4,141	6,045	1,881	218		13,623

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.

FISH LADDER OPERATING SCHEDULE

Other than during routine wintertime inspection and maintenance (performed on only one ladder at a time), the two fishways at Wells Dam operated continuously during 2015.

East Ladder Maintenance

December 9, 2014 to February 5, 2015, outage for inspection and maintenance.

West Ladder Maintenance

March 31, 2015 to April 15, 2015, outage for inspection and maintenance. December 1, 2015 through January 28, 2016, outage for inspection, maintenance, and installation of a passage structure for Pacific Lamprey in the unused low-level entrance, along with HDX/FDX PIT-tag detection in that entrance. These temporary modifications to the low-level entrance are for Pacific Lamprey passage only, and are designed to preclude salmonid passage. The primary entrance to the west fishway remains open to all fish species, with no changes to standard operating procedures.

JUVENILE PASSAGE FACILITIES

The juvenile bypass system at Wells Dam capitalizes on the hydrocombine design by using flow to the turbines to attract fish to bypass spillways located between turbine silos and above turbine intakes. During the juvenile outmigration, bypass baffles and barriers are installed in spillway intake slots to partially constrict the five even-numbered spillways. This configuration provides up to 11,000 cfs of bypass flow in addition to any involuntary spill through the six unmodified odd-numbered spillways.

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. Due to moderate flows during the bypass season, Douglas PUD did not need to remove any bypass barriers in 2015 in order to comply with TDG standards.

Douglas PUD operated the Wells bypass system in 2015 as guided by the Wells Habitat Conservation Plan (HCP) Coordinating Committee-approved *2015 Bypass Operating Plan*. The plan was intended to provide non-turbine passage during 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 95 percent of the juvenile salmon and steelhead migration passing Wells Dam by providing bypass passage during 99.88 percent of the yearling Chinook migration, 99.69 percent of the steelhead migration, 99.99 percent of the Sockeye migration, 99.96 percent of the Coho migration, and 99.97 percent of the sub-yearling Chinook migration passing Wells Dam in 2015.

TABLE 178

MONTHLY TOTALS OF SALMONIDS AND LAMPREY COUNTED OVER WELLS DAM
2016

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
CHINOOK*					4,112	11,471	34,583	9,936	3,309	2,109	302		65,822
STEELHEAD					59	46	427	883	2,034	1,227	168		4,844
SOCKEYE						39,827	172,949	3,174	81	5			216,036
COHO									110	297	16		423
TOTAL					4,171	51,344	207,959	13,993	5,534	3,638	486		287,125
LAMPREY					1	0	0	1	4	1	0		7
BULL TROUT					30	19	0	0	0	1	1		51

*Jacks included

TABLE 179

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

MAY 2016

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				5	1	0	0	149.1	13.2	51.0
May 2	0			0				3	1	0	0	139.3	13.2	51.3
May 3	4			0				5	2	0	0	148.7	13.2	51.7
May 4	3			0				4	1	0	0	140.1	14.7	52.0
May 5	16			0				2	1	0	1	143.2	28.2	52.0
May 6	5			0				6	3	0	0	145.6	13.2	52.0
May 7	14			0				3	1	0	0	129.9	13.2	52.6
May 8	28			0				4	2	1	0	148.1	57.9	52.8
May 9	7			0				0	0	1	0	136.5	13.2	52.4
May 10	23			0				4	0	0	0	172.7	23.8	52.6
May 11	46			0				4	2	0	0	129.2	13.2	52.8
May 12	104			1				2	0	1	0	155.4	13.2	52.3
May 13	215			0				1	0	0	0	131.3	13.2	53.4
May 14	395			1				2	1	1	0	143.7	13.2	53.9
May 15	364			8				0	0	1	0	141.0	13.2	53.6
May 16	144			6				2	0	0	0	128.6	13.2	54.2
May 17	212			3				1	1	1	0	171.6	24.1	55.0
May 18	73			7				1	1	1	0	72.7	6.7	54.7
May 19	317			35				0	0	1	0	68.2	6.1	54.4
May 20	127			19				2	2	1	0	87.6	6.8	54.3
May 21	502			45				0	0	3	0	63.1	5.2	54.8
May 22	210			36				1	1	1	0	121.4	8.3	54.9
May 23	34			23				3	2	2	0	124.5	10.0	54.7
May 24	141			20				2	2	3	0	100.7	10.0	54.5
May 25	97			19				1	1	3	0	85.6	10.0	54.9
May 26	153			46				0	0	2	0	114.1	10.0	55.2
May 27	111			44				0	0	4	0	149.1	10.0	55.4
May 28	103			31				0	0	1	0	150.4	10.0	55.8
May 29	36			20				0	0	2	0	105.8	7.8	56.0
May 30	124			50				0	0	0	0	89.6	7.2	56.2
May 31	55			34				1	0	0	0	150.1	10.0	56.4
TOTAL	3,664			448				59	25	30	1			
AVG.	118			14				2	1	1		127.0	13.7	53.8
RUN YEAR														
TOTALS TO DATE		CHINOOK ADULT	CHINOOK JACK					STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY			
SPRING		3,664	448					59	25	30	1			

TABLE 180

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

JUNE 2016

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	77			44			0	2	1	1		122.2	10.0	56.6
Jun 2	36			33			0	1	0	1		109.6	10.0	56.8
Jun 3	56			21			0	0	0	0		132.2	10.0	57.0
Jun 4	48			23			0	2	1	2		135.6	10.0	57.8
Jun 5	50			12			1	0	0	0		118.3	10.0	58.2
Jun 6	32			12			0	1	1	2		137.6	10.0	58.0
Jun 7	57			22			2	0	0	1		124.3	9.0	58.5
Jun 8	38			12			1	3	0	1		93.6	7.8	58.8
Jun 9	71			29			1	1	1	0		125.8	7.8	58.7
Jun 10	59			18			1	4	2	0		90.8	5.6	58.5
Jun 11	49			19			9	0	0	0		142.6	10.0	58.2
Jun 12	130			12			9	0	0	0		136.0	10.0	57.9
Jun 13	109			13			14	5	3	2		115.7	9.6	58.0
Jun 14	88			5			40	2	1	1		137.0	10.0	57.9
Jun 15	203			6			49	2	2	1		94.1	9.0	57.7
Jun 16	243			10			122	0	0	0		121.9	10.0	58.1
Jun 17	287			11			267	2	1	1		99.0	7.7	58.0
Jun 18	143			9			119	2	0	0		48.2	5.6	57.7
Jun 19	498			14			540	2	1	0		125.9	7.8	57.7
Jun 20	116			1			414	0	0	1		93.1	7.8	58.3
Jun 21	712			4			656	0	0	1		137.5	10.0	58.9
Jun 22	460			6			1,043	2	1	0		100.9	8.2	59.5
Jun 23	596			7			874	1	1	2		140.7	10.0	59.8
Jun 24	865			8			1,743	0	0	1		151.5	10.0	59.3
Jun 25	798			7			3,206	3	1	0		141.2	10.0	59.8
Jun 26	503			9			3,957	2	0	0		157.4	10.0	60.2
Jun 27	1,063			11			4,173	4	1	0		116.9	10.0	60.5
Jun 28	738			7			5,167	2	0	0		119.4	10.0	61.1
Jun 29		1,493		16			7,802	0	0	1		135.2	10.0	61.3
Jun 30		1,418		34			9,617	3	2	0		148.6	10.0	61.3

TOTAL	8,125	2,911		435			39,827	46	20	19		121.8	9.2	58.7
AVG.	290	1456		15			1328	2	1	1				

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	11,789	833
SUMMER	2,911	50
TOTAL	14,700	883

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
39,827	105	45	49	1

TABLE 181

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

JULY 2016

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		1,272		37			12,308	4	2			112.7	10.0	
Jul 2		1,394		37			12,960	6	3			83.8	6.8	
Jul 3		1,730		39			13,036	7	3			114.0	10.0	
Jul 4		1,611		42			16,581	4	2			132.4	7.8	
Jul 5		1,364		27			14,007	1	0			83.9	6.6	
Jul 6		1,582		29			11,904	4	0			116.5	10.0	
Jul 7		954		55			12,224	7	5			121.8	10.0	
Jul 8		722		42			10,686	6	3			109.0	7.8	
Jul 9		1,054		53			7,773	12	5			92.8	7.8	61.3
Jul 10		883		41			7,624	12	7			107.3	8.8	61.2
Jul 11		855		37			5,233	4	1			127.1	18.8	61.7
Jul 12		1,408		59			5,444	9	5			73.9	5.6	62.0
Jul 13		1,508		66			6,633	7	6			142.5	10.0	
Jul 14		1,148		74			5,941	14	3			77.5	6.5	62.0
Jul 15		1,083		44			4,419	13	6			121.2	10.0	62.0
Jul 16		1,053		59			3,378	11	2			87.9	6.6	62.5
Jul 17		709		41			3,149	19	12			117.4	10.0	62.7
Jul 18		830		32			2,495	10	2			103.6	10.0	
Jul 19		1,233		77			3,067	13	5			79.3	7.7	62.2
Jul 20		580		51			2,359	11	2			128.0	10.0	62.6
Jul 21		1,183		58			1,540	14	6			130.5	10.0	63.2
Jul 22		1,090		64			1,544	18	6			70.2	8.9	63.2
Jul 23		1,225		68			1,590	30	14			84.3	10.0	63.4
Jul 24		1,059		76			1,411	19	2			92.2	10.0	64.1
Jul 25		1,098		88			1,190	28	13			87.0	7.8	64.4
Jul 26		874		78			974	23	10			78.8	6.6	64.0
Jul 27		702		72			977	24	8			139.6	10.0	64.0
Jul 28		1,084		92			792	19	5			139.8	10.0	64.4
Jul 29		637		45			783	27	9			111.6	10.0	65.2
Jul 30		478		22			497	29	9			81.8	7.2	65.5
Jul 31		551		24			430	22	7			109.9	10.0	65.4
TOTAL		32,954		1,629			172,949	427	163					

AVG.	1063	53	5579	14	5	105.1	9.1	63.2
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	11,789	833
SUMMER	35,865	1,679
TOTAL	47,654	2,512

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
212,776	532	208	49	1

TABLE 182

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

AUGUST 2016

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		748		89			379	35	14		0	137.5	10.0	65.4
Aug 2		835		61			391	30	13		0	114.1	10.0	65.3
Aug 3		814		62			293	23	12		0	106.5	10.0	64.7
Aug 4		586		51			228	27	10		0	131.2	10.0	64.5
Aug 5		468		58			245	34	15		0	65.9	5.6	
Aug 6		345		46			205	36	20		0	59.6	6.2	65.0
Aug 7		308		35			154	22	12		0	79.3	5.6	65.1
Aug 8		317		28			145	24	10		0	88.8	5.6	
Aug 9		370		31			127	27	13		0	66.4	5.6	
Aug 10		370		35			149	21	10		0	82.8	7.8	65.1
Aug 11		227		30			106	25	9		0	103.2	7.8	65.0
Aug 12		277		25			83	28	12		0	79.1	7.9	65.4
Aug 13		325		32			86	28	8		0	71.0	7.5	65.6
Aug 14		306		22			79	37	24		0	93.5	7.8	66.1
Aug 15		248		17			45	29	15		0	75.0	7.8	66.3
Aug 16		149		28			54	19	10		0	104.4	7.8	66.4
Aug 17		150		17			68	25	11		0	117.6	10.0	66.3
Aug 18		140		19			64	37	15		0	112.7	8.6	66.2
Aug 19		274		20			46	31	16		0	84.0	7.1	66.5
Aug 20		256		8			44	36	15		0	64.5	0.0	66.6
Aug 21		183		12			32	30	16		0	69.8	0.0	66.6
Aug 22		242		14			24	24	14		0	74.0	0.0	66.1
Aug 23		152		6			17	18	10		0	59.5	0.0	65.8
Aug 24		179		14			25	26	9		0	80.6	0.0	66.0
Aug 25		192		17			21	36	14		0	81.7	0.0	65.6
Aug 26		122		15			17	32	10		0	117.7	0.0	65.3
Aug 27		88		13			14	42	26		0	56.6	0.0	65.4
Aug 28		110		8			11	23	14		0	78.9	0.0	65.2
Aug 29			92	20			8	26	10		0	53.9	0.0	65.7
Aug 30			107	10			8	20	9		0	47.0	0.0	65.7
Aug 31			84	29			6	32	12		1	43.3	0.0	65.5

TOTAL	8,781	283	872				3,174	883	408		1			
AVG.	314	94	28				102	28	13		0	83.9	4.8	65.7

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	11,789	833
SUMMER	44,646	2,492
FALL	283	59
TOTAL	56,718	3,384

SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
215,950	1,415	616	49	2

TABLE 183

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

SEPTEMBER 2016

DATE	CHINOOK ADULT		CHINOOK	COHO	COHO	SOCKEYE	STEELHEAD	WILD	BULL	LAMPREY	DISCH	SPILL	DEG F	
	SPRING	SUMMER	FALL	JACK	ADULT			JACK	STEELHEAD		TROUT	KCFS		KCFS
Sep 1			47	12	0	0	3	30	12		0	65.2	0.0	64.8
Sep 2			93	12	0	0	5	27	10		0	45.7	0.0	64.7
Sep 3			30	4	0	0	8	17	4		0	81.9	0.0	64.9
Sep 4			59	8	1	0	4	38	14		0	62.5	0.0	65.0
Sep 5			28	11	1	1	5	27	11		0	22.2	0.0	65.1
Sep 6			32	9	0	1	3	34	9		1	34.1	0.0	65.3
Sep 7			69	6	0	0	4	21	9		0	30.4	0.0	65.1
Sep 8			81	16	0	0	5	22	11		0	60.6	0.0	64.7
Sep 9			71	13	0	0	4	43	19		0	36.7	0.0	64.6
Sep 10			27	6	0	0	1	30	12		0	33.2	0.0	64.8
Sep 11			68	12	0	0	3	34	10		1	71.0	0.0	64.4
Sep 12			89	13	0	0	2	33	15		0	40.2	0.0	65.1
Sep 13			48	11	1	1	3	38	13		0	48.4	0.0	65.3
Sep 14			69	13	1	1	4	35	13		0	35.9	0.0	65.5
Sep 15			162	17	1	0	6	62	26		0	45.5	0.0	65.7
Sep 16			125	23	1	2	1	56	25		0	30.9	0.0	65.5
Sep 17			84	10	1	0	1	72	23		0	38.4	0.0	64.9
Sep 18			52	8	0	0	1	79	19		0	56.0	0.0	65.0
Sep 19			57	18	1	0	4	56	23		0	33.3	0.0	65.1
Sep 20			203	21	2	0	3	91	33		0	49.0	0.0	65.1
Sep 21			261	29	1	0	0	121	53		0	59.8	0.0	65.4
Sep 22			251	29	6	0	0	127	44		1	38.2	0.0	65.4
Sep 23			141	26	6	0	1	159	46		0	29.0	0.0	64.9
Sep 24			146	16	9	0	0	170	50		0	33.9	0.0	64.5
Sep 25			110	15	7	0	1	120	31		0	42.5	0.0	64.7
Sep 26			55	18	7	0	2	78	27		0	25.9	0.0	65.2
Sep 27			106	14	9	1	1	76	19		0	45.1	0.0	65.3
Sep 28			126	12	13	0	2	107	31		1	30.9	0.0	65.3
Sep 29			80	12	20	0	1	122	32		0	52.9	0.0	65.3
Sep 30			114	11	15	0	3	109	42		0	24.3	0.0	65.4
TOTAL			2,884	425	103	7	81	2,034	686		4			
AVG.			96	14	3		3	68	23		0	43.5	0.0	65.1

RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	11,789	833
SUMMER	44,646	2,492
FALL	3,167	484
TOTAL	59,602	3,809

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
103	7	216,031	3,449	1,302	49	6

TABLE 184

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

OCTOBER 2016

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			64	10	25	1	0	117	44	0	0	66.7	0.0	65.0
Oct 2			55	7	14	0	0	92	22	0	0	59.9	0.0	64.8
Oct 3			52	3	4	0	0	72	21	0	1	36.4	0.0	64.5
Oct 4			85	13	13	1	0	52	14	0	0	38.7	0.0	64.3
Oct 5			71	18	14	1	0	65	17	0	0	35.8	0.0	64.1
Oct 6			78	10	8	2	0	73	19	0	0	34.7	0.0	64.0
Oct 7			46	5	19	1	0	57	19	0	0	77.4	0.0	63.7
Oct 8			55	11	20	3	0	66	18	0	0	24.4	0.0	63.4
Oct 9			86	12	9	1	1	51	13	0	0	77.6	0.0	63.4
Oct 10			48	7	3	0	0	28	11	0	0	59.1	0.0	62.8
Oct 11			44	5	6	0	0	40	10	0	0	60.3	0.0	62.6
Oct 12			38	3	11	0	0	48	15	0	0	73.9	0.0	62.5
Oct 13			52	2	6	1	2	37	9	0	0	61.7	0.0	62.2
Oct 14			55	10	15	1	0	32	7	0	0	51.1	0.0	62.0
Oct 15			67	5	6	1	0	41	12	0	0	59.1	0.0	61.6
Oct 16			77	5	4	0	0	54	17	0	0	94.7	0.0	61.4
Oct 17			50	4	10	0	0	22	5	0	0	28.0	0.0	61.2
Oct 18			39	1	14	1	1	43	10	0	0	36.7	0.0	61.5
Oct 19			108	12	10	0	0	43	9	0	0	83.1	0.0	61.3
Oct 20			33	4	9	0	0	18	7	0	0	52.5	0.0	61.3
Oct 21			43	1	4	1	0	25	10	0	0	64.7	0.0	60.0
Oct 22			75	10	8	1	0	24	5	0	0	77.0	0.0	60.8
Oct 23			89	8	7	3	0	24	7	1	0	69.3	0.0	60.8
Oct 24			83	8	6	0	0	14	1	0	0	73.9	0.0	60.9
Oct 25			91	6	10	0	1	18	7	0	0	78.1	0.0	60.9
Oct 26			62	6	5	0	0	7	2	0	0	60.8	0.0	60.8
Oct 27			58	6	3	0	0	14	3	0	0	59.0	0.0	60.4
Oct 28			35	1	2	1	0	15	6	0	0	66.3	0.0	
Oct 29			46	3	6	2	0	20	7	0	0	79.9	0.0	60.0
Oct 30			35	0	2	0	0	14	4	0	0	93.7	0.0	
Oct 31			89	4	2	0	0	1	0	0	0	91.9	0.0	
TOTAL			1,909	200	275	22	5	1,227	351	1	1			

AVG.			62	6	9	1	0	40	11	0	0	62.1	0.0	62.2
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RUN YEAR	CHINOOK ADULT	CHINOOK JACK
TOTALS TO DATE		
SPRING	11,789	833
SUMMER	44,646	2,492
FALL	5,076	684
TOTAL	61,511	4,009

COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
378	29	216,036	4,676	1,653	50	7

TABLE 185

MONTHLY FISH PASSAGE SUMMARY REPORT

U.S. ARMY ENGINEER DISTRICT, PORTLAND

WELLS PROJECT- FISH COUNTS

NOVEMBER 2016

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			29	2	3	1		9	3	0		66.8	0.0	
Nov 2			40	3	3	0		19	9	0		75.9	0.0	59.2
Nov 3			48	4	2	0		10	3	0		87.8	0.0	59.1
Nov 4			32	2	0	0		12	5	0		57.0	0.0	58.8
Nov 5			22	2	0	0		21	6	0		80.8	0.0	
Nov 6			17	3	1	0		9	2	0		77.7	0.0	58.4
Nov 7			18	0	0	0		5	2	0		98.4	0.0	58.2
Nov 8			21	1	1	0		16	5	1		95.3	0.0	
Nov 9			17	0	2	0		7	1	0		104.1	0.0	57.6
Nov 10			24	0	1	0		11	2	0		73.4	0.0	
Nov 11			5	2	0	0		13	4	0		34.0	0.0	
Nov 12			1	1	0	1		6	1	0		94.4	0.0	57.1
Nov 13			1	0	0	0		11	3	0		61.8	0.0	
Nov 14			4	0	0	0		7	4	0		89.3	0.0	
Nov 15			3	0	1	0		12	6	0		63.8	0.0	56.3
Nov 16												83.4	0.0	55.6
Nov 17												83.8	0.0	55.1
Nov 18												91.0	0.0	54.9
Nov 19												79.1	0.0	
Nov 20												80.9	0.0	54.0
Nov 21												64.4	0.0	
Nov 22												91.1	0.0	
Nov 23												71.8	0.0	53.8
Nov 24												53.9	0.0	53.5
Nov 25												89.0	0.0	53.1
Nov 26												79.1	0.0	53.2
Nov 27												72.7	0.0	52.7
Nov 28												104.5	0.0	52.3
Nov 29												109.0	0.0	51.6
Nov 30												86.5	0.0	52.1
TOTALS			282	20	14	2		168	56	1				
AVG.			19	1	1	0		11	4			80.0	0.0	55.3

RUN YEAR TOTALS TO DATE	CHINOOK ADULT	CHINOOK JACK	COHO ADULT	COHO JACK	SOCKEYE	STEELHEAD	WILD STEELHEAD	BULL TROUT	LAMPREY
	SPRING	11,789	833	392	31	216,036	4,844	1,709	51
SUMMER	44,646	2,492							
FALL	5,358	704							
TOTAL	61,793	4,029							

TABLE 186

**MONTHLY COUNT OF STEELHEAD
WELLS DAM: 1976 - 2016**

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
TOTAL					2,838	1,723	17,990	77,658	145,418	69,955	11,195		326,777
10-Year Average					86	46	484	2,770	5,061	1,951	249		10,647

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

ADDENDUM

Corrections to TABLE 24b from the 2012 report

NIGHT COUNT OF LAMPREY - BONNEVILLE DAM

2009				2010				2011				2012								
Day	JUN	JUL	AUG	SEP	Day	JUN	JUL	AUG	SEP	Day	JUN	JUL	AUG	SEP	Day	JUN	JUL	AUG	SEP	
1		151	-47	15	1		85	297	107	1		310	284	114	1		811	364	96	
2		156	11	-26	2		200	249	86	2		284	317	100	2		888	189	175	
3		250	6	-32	3		172	261	92	3		415	487	112	3		778	132	170	
4		182	-33	-86	4		141	211	45	4		207	505	135	4		656	372	239	
5		156	10	-40	5		190	373	11	5		402	222	116	5		508	103	276	
6		33	17	-43	6		373	356	33	6		384	231	72	6		708	281	253	
7		129	-7	-19	7		229	155	61	7		145	272	112	7		749	436	349	
8		139	28	-23	8		186	225	47	8		24	208	77	8		717	412	372	
9		200	13	-29	9		120	47	25	9		312	237	77	9		413	367	319	
10		229	21	-33	10		195	118	-16	10		143	197	61	10		842	669	264	
11		179	-5	-13	11		269	254	3	11		241	138	84	11		697	325	394	
12		79	19	-14	12		-18	249	19	12		216	190	105	12		493	407	284	
13		138	41	-25	13		102	167	8	13		199	121	56	13		594	299	199	
14		252	46	-14	14		157	200	38	14		354	191	108	14		707	483	221	
15		20	228	34	-3	15	84	224	107	33	15	7	243	167	81	15	347	699	639	273
16		-60	287	45	-6	16	39	149	105	32	16	13	267	154	39	16	233	1,267	117	253
17		126	371	49	-10	17	233	142	39	41	17	-1	112	118	89	17	629	885	800	129
18		145	230	67	-23	18	122	193	116	1	18	-12	414	135	78	18	547	856	383	218
19		200	188	27	-18	19	97	225	77	12	19	35	73	167	60	19	443	762	526	363
20		-166	212	-32	-14	20	73	136	69	13	20	20	550	152	55	20	687	649	540	110
21		-5	183	-29	-12	21	75	140	31	6	21	52	416	161	67	21	806	452	461	211
22		73	277	-62	-8	22	172	267	11	4	22	103	455	87	51	22	722	761	91	250
23		24	200	-11	-2	23	171	210	11	-16	23	102	207	237	76	23	536	527	394	121
24		105	271	-10	-6	24	305	316	46	1	24	36	425	129	53	24	834	906	205	328
25		-1	-15	-13	-11	25	294	169	62	5	25	96	443	153	55	25	885	665	179	207
26		39	73	-21	-11	26	362	159	75	3	26	175	473	100	40	26	1,203	485	375	153
27		59	48	-9	-1	27	264	277	96	8	27	214	436	155	43	27	870	288	330	109
28		62	153	11	5	28	196	242	61	4	28	155	270	131	36	28	1040	724	358	118
29		179	-14	8	-1	29	155	140	49	18	29	188	265	73	16	29	512	662	250	116
30		195	-135	12	3	30	165	118	41		30	340	245	76	8	30	486	391	245	
31		100	38			31	164	70			31	345	94			31	558	312		
TOTALS	995	4,930	224	-500	*TOTALS	2,807	5,672	4,228	724	TOTALS	1,523	9,275	5,889	2,176	*TOTALS	10,780	21,098	11,044	6,570	

Note: video counting for night lamprey passage at Bonneville June 15 - September 30

Not included with the Daytime total lamprey counts.

Video is eight hours from 2000 to 0400 Pacific standard time

*totals corrected for 2010 and 2012 now reporting both ladders