



## Fish Passage Center

# Weekly Report #17-26

September 16, 2017

### This Week's Highlights

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 7% and 27% of average at individual sub-basins over August. Precipitation above The Dalles has been 20% of average over August. Over the 2017 water year, precipitation has ranged between 98% and 130% of average.

**Table 1. Summary of August precipitation and cumulative October through August precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.**

Location	Water Year 2017 August 1-31, 2017		Water Year 2017 October 1, 2016 to August 31, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.21	15	37.7	105
Snow River Above Ice Harbor	0.21	27	25.0	116
Columbia Above The Dalles	0.22	20	28.4	108
Kootenai	0.44	22	38.4	107
Clark Fork	0.11	7	25.8	98
Flathead	0.26	16	38.6	112
Pend Oreille River Basin above Waneta Dam	0.15	10	33.5	107
Salmon River Basin	0.21	19	33.3	119
Upper Snake Tributaries	0.35	27	39.4	116
Clearwater	0.21	15	41.1	105
Willamette River above Portland	0.11	12	82.7	130

Grand Coulee Reservoir is at 1,279.4 feet (8-31-17) and has drafted 1.8 feet over the last week. Outflows at Grand Coulee have ranged between 75.0 Kcfs and 122.2 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,445.1 feet (8-31-17) and has drafted 1.1 feet over the past week. Daily average outflows at Libby Dam have been 9.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,550.9 feet (8-31-17) and has drafted 0.8 feet last week. Outflows at Hungry Horse have been 2.0 Kcfs over the last week.

Dworshak is currently at an elevation of 1,537.4 feet (8-31-17) and has drafted 6.0 feet over the last week. Dworshak outflows have been 9.0 Kcfs.

The Brownlee Reservoir was at an elevation of 2,054.3 feet on August 31, 2017, and drafted 2.4 feet over the last week. Outflows at Hells Canyon have ranged between 9.6 and 21.1 Kcfs over the last four days.

The Biological Opinion flow period began on April 3<sup>rd</sup> and ended on June 20<sup>th</sup> in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 5<sup>th</sup>, 2017), the flow objective this spring was 100 Kcfs at Lower Granite. Flows at Lower Granite Dam averaged 140.5 Kcfs over the spring season.

The Summer Flow period began on June 21<sup>st</sup> at Lower Granite Dam, the flow objective this year is 55 Kcfs. Over the summer period, flows have averaged 49.1 Kcfs and 29.0 Kcfs over the last week.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives were 260 Kcfs at McNary Dam (began April 10<sup>th</sup> and ended June 30) and 135 Kcfs at Priest Rapids Dam (began April 10<sup>th</sup>). Over the spring season, flows at McNary Dam have been 378.4 Kcfs and Priest Rapids Dam flows were 237.4 Kcfs.

The Summer Flow period began on July 1<sup>st</sup> at McNary Dam, the flow objective this year is 200 Kcfs. Over the summer period, flows have averaged 166.1 Kcfs and 128.7 Kcfs last week.

## Spill

Flows in the Snake and Columbia rivers remained relatively steady this week. Dworshak Dam is currently in its summer draft operation, with an average discharge volume of 9.0 Kcfs and an average spill volume of 4.4 Kcfs over the last week. Dworshak operations are currently to discharge water to not drop below a 1535' elevation by the end of August while still maintaining tailrace temperatures at Lower Granite Dam of 68°F or below. Daily average tailrace temperatures at Lower Granite have been below 68°F since August 12<sup>th</sup>. Hells Canyon Complex flows have remained steady over the last week, with daily average outflows at Hells Canyon Dam ranging from 13.0 to 15.3 Kcfs over the last four days.

The 2017 summer spill for fish passage began at Snake River projects on June 21<sup>st</sup> and continued through August 31<sup>st</sup>. Summer spill for fish passage at the Snake River projects is to occur at the following amounts described in the 2017 Fish Operations Plan (FOP).

Project	Spill Level Day/Night
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17Kcfs/17Kcfs
Ice Harbor	June 21-July 13: 30%/30% vs. 45 Kcfs/Gas Cap July 13-August 31: 45 Kcfs/Gas Cap

The summer spill operation at Lower Granite Dam is 18 Kcfs. At current flows, spill to this level was not always possible this week. In general, spill at Lower Granite was either 18 Kcfs or was limited to total flows minus powerhouse minimum requirements. Spill at Lower Granite Dam continued to occur through the traditional spillbays, instead of the Removable Spillway Weir, in an effort to reduce temperatures in the Lower Granite tailrace. Although voluntary spill ended after August 31<sup>st</sup>, Lower Granite Dam will continue to provide spill during the ongoing construction to the juvenile bypass system. Spill at Lower Granite will be ~7.0 Kcfs during the daytime hours. Spill operations at Little Goose Dam have also been through traditional spillbays, instead of through the Temporary Spillway Weir. At Little Goose Dam, when flows drop below 32 Kcfs, spill operations switch from 30% to a fixed spill

volume of 11 Kcfs, 9 Kcfs, or 7 Kcfs, depending on the total flows. Spill volumes at Little Goose Dam were fixed at the 11 Kcfs and 9 Kcfs levels throughout the week, equating to daily average spill percentages of 30-41%. The spill operation at Lower Monumental Dam is 17 Kcfs. However, the current low flows have precluded this operation for most of this week. Instead, spill at Lower Monumental has mostly been limited to total flows minus powerhouse minimum requirements. Finally, at Ice Harbor, the spill operation for the remainder of the season is 45 Kcfs/gas cap. At current flows, spill to these levels is not always possible. Instead, spill volumes are often limited to total flows minus minimum generation requirements.

Summer spill for fish passage on the Mid-Columbia began on June 16<sup>th</sup> and ran through August 31<sup>st</sup>. Spill for fish passage at the lower Columbia River projects at the following amounts described in the 2017 Fish Operations Plan.

Project	Spill Level Day/Night
McNary	June 16-Aug 31: 50%/50%
John Day	June 16-July 20: 30%/30% and 40%/40% July 20-August 31: 30%/30%
The Dalles	40%/40%
Bonneville	June 16 -Aug 31: 85Kcfs/121Kcfs and 95 Kcfs/95 Kcfs

The spring spill period ended on June 15<sup>th</sup> according to the COE's Fish Operation Plan. The original period for the spring spill to end in the Middle Columbia River was June 30<sup>th</sup>. Accommodations were made in past years to initiate summer spill earlier for testing purposes. This was done to assure adequate numbers of test fish were present to conduct the "performance tests". Since 2014 the earlier June 15<sup>th</sup> date has been included in the FOP as part of the roll-over operations associated with the FOP. The earlier start date for summer spill is also included in the 2014 Supplemental Biological Opinion.

At McNary Dam, spill averaged 50% of daily average flow over the past week. The spill operation at John Day Dam is 30%/30% for the remainder of the season. This spill operation was met over the past week. Spill at The Dalles Dam was 40% of average daily flow over the past week. Finally, at Bonneville Dam, the FOP calls for alternating spill levels of 85 Kcfs/121 Kcfs or 95 Kcfs/95 Kcfs. Under current flow conditions,

these spill levels were not always possible, particularly at the 95 and 121 Kcfs levels. Instead, spill for much of this week was limited to total flows minus powerhouse minimums.

At spill levels of 4.3 to 4.4 Kcfs over the last week, tailrace TDG levels at Dworshak Dam have been approximately 116%. TDG supersaturation at the Lower Granite Dam forebay monitor has generally been 102% over the past week. Over the past week, the tailwater TDG supersaturation (average of 12 highest hourly levels in a calendar day) was generally below 115% at all the Snake and Mid-Columbia river projects. Similarly, TDG supersaturation levels at the Upper Columbia River projects have generally been at or below 110% at the tailrace monitors.

**Note:** The State of Oregon TDG waiver only requires compliance with 120% TDG in the tailrace, while the State of Washington requires compliance with both a 115% TDG forebay requirement and a 120% tailrace TDG requirement. The State of Oregon and the State of Washington also use different methodologies to estimate the 12-hour average TDG. For Oregon, the 12-hour average is based on the 12 highest hourly TDG measurements in a single calendar day (not necessarily consecutive). For Washington, the 12-hour average is based on 12-hour rolling averages. The highest of the rolling averages is what is reported as the 12-hour average for a given day. The location of a TDG monitor will dictate which of these methodologies is used for compliance monitoring. The Washington methodology will apply to all the lower Snake River projects, all Upper Columbia projects, and the middle Columbia River forebay monitors. On any given day the compliance of the tailrace monitors at the middle Columbia River projects will be determined using either the Washington or Oregon methodology, whichever is the most restrictive, and spill will be decreased if needed.

Gas bubble trauma monitoring in smolts has ended for the 2017 season. No examinations were conducted this week because of low fish numbers. Furthermore, there is no need to continue monitoring after this week because the voluntary spill season ended after August 31<sup>st</sup>.

## Temperature

Over the past week, forebay water temperatures at Bonneville, McNary, and Ice Harbor dams were above the 68°F temperature standard while those at Lower Granite Dam were both above and below the standard. At Lower Granite, the daily average temperature exceeded the 68°F temperature standard for two days this week (August 28<sup>th</sup> and 29<sup>th</sup>) but dropped below the standard on August 30<sup>th</sup>. The daily average temperature on August 31<sup>st</sup> was 66.6°F, which is nearly one degree warmer than the ten-year average for this date. The forebay temperature at Ice Harbor Dam has exceeded the 68°F standard since July 9<sup>th</sup>. The daily average temperature in the Ice Harbor forebay was 69.9°F on August 31<sup>st</sup>, which is about 0.6°F warmer than the ten-year average for this date. The forebay temperatures at McNary and Bonneville dams have exceeded the 68°F standard since July 12<sup>th</sup>. The daily average forebay temperature at McNary on August 31<sup>st</sup> was 70.5°F, which is about 1.4 degrees warmer than the ten-year average for this date. Finally, the daily average forebay temperature at Bonneville Dam for August 31<sup>st</sup> was 71.2°F, which is about 1.5 degrees warmer than the current ten-year average for this date.

## Smolt Monitoring

Sampling for the Smolt Monitoring Program (SMP) was underway at all bypass facilities this week except Lower Granite Dam (LGR). Sampling at Lower Granite Dam ended in early August in order to accommodate construction to the juvenile bypass and juvenile fish facilities. Furthermore, sampling at Rock Island Dam (RIS) ended after the sample on August 31<sup>st</sup>. This week's samples at the bypass facilities were dominated by subyearling Chinook. When compared to the previous week, passage of subyearling Chinook decreased this week. Very few spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) were encountered in this week's samples.

Sampling for the SMP at Bonneville Dam (BON) continued this week under the high temperature sampling protocol. Under this protocol, sampling at BON occurs every-other-day (24-hour sample) until temperatures in the BON forebay drop below 69.5°F. This week's samples at Bonneville Dam (BON) were again dominated by subyearling Chinook. This week's

daily average passage index for subyearling Chinook at BON was approximately 200 per day, which is a decrease over last week's daily average passage index of about 1,360. The only spring migrants that were encountered in this week's sample were sockeye, which we collected on August 26<sup>th</sup>. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples (August 26<sup>th</sup> and 30<sup>th</sup>) while no macrophthalmia were encountered this week.

Similar to last year, sampling at John Day Dam (JDA) occurs every-other-day this year. However, the SMP at JDA continued operating under the high temperature sampling protocol this week. Under this protocol, sampling at JDA occurs only twice per week for condition only. This condition only sample is processed on Tuesday's and Friday's and consists of a sample of approximately six hours. Because these are not 24-hour samples, it is not appropriate to compare this week's passage numbers to previous weeks. The high temperature sampling protocol will remain in place until temperatures in the JDA forebay drop below 69.5° F. This week's samples at JDA were again dominated by subyearling Chinook. No spring migrants were encountered at JDA this week. Finally, no pacific lamprey juveniles were encountered in this week's samples.

Sampling at McNary Dam (MCN) is also every-other-day. The MCN juvenile fish facility has been operating under the high temperature sampling protocol since about July 12<sup>th</sup>. Under this protocol, sampling at MCN remains every-other-day (24-hour sample) but the target sample size is reduced to 100 fish per day. This protocol will remain in place until temperatures in the McNary Forebay drop below 68.0°F. This week's samples were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 300 per day, which is a decrease over last week's daily average passage index of about 1,000 per day. No spring migrants were encountered in this week's samples at MCN. Finally, Pacific lamprey macrophthalmia were encountered in all four of this week's samples, with a daily average collection of about 25 fish per day. No pacific ammocoetes were encountered this week.

Similar to recent years, sampling at Little Goose Dam (LGS) was every-other-day until the start of transportation, at which time sampling went to every day. This week's samples at LGS were again dominated

by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 60 per day, which is a slight decrease from last week's daily average passage index of about 100 per day. Passage of spring migrants remained low this week. In fact, the only spring migrants that were encountered in this week's samples were sockeye and steelhead. Finally, Pacific lamprey ammocoetes were encountered nearly every day this week, with a daily average collection of only two fish per day. No lamprey macrophthalmia were encountered in this week's samples at LGS.

Similar to recent years, sampling at Lower Monumental Dam (LMN) was every-third-day from April 1<sup>st</sup> to April 16<sup>th</sup>, every-other-day from April 16<sup>th</sup> until transportation began, at which time sampling switched to every day. Under the current every-other-day trucking operation, site personnel at LMN will transmit two days of sample data to the FPC every other day. This week's samples at LMN were again dominated by subyearling Chinook. Passage of subyearling Chinook at LMN decreased this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook was only about 15 fish per day, whereas that for last week was about 40 per day. The only spring migrants that were encountered in this week's samples were yearling Chinook, which were encountered on two occasions (August 25<sup>th</sup> and August 28<sup>th</sup>). Finally, no lamprey juveniles were encountered in this week's samples.

This week's collections at Rock Island Dam (RIS) were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 40 per day, which is a decrease over last week's daily average passage index of about 100 per day. Passage of spring migrants remained low this week. Finally, one Pacific lamprey macrophthalmia was encountered in the sample from August 28<sup>th</sup>. No lamprey ammocoetes were encountered in this week's samples. Sampling at RIS ended after the sample on August 31<sup>st</sup>.

## Hatchery Release

Effective 2017, the FPC has reorganized our hatchery release zones in an effort to more closely match the geographical regions used by NOAA in their ESU designations. The new river zones are: 1) Lower Columbia, 2) Middle Columbia, 3) Upper Columbia, and 4) Snake River. In addition, the FPC now provides a summary of hatchery releases below Bonneville Dam (i.e., Lower Columbia River Zone) in the weekly report.

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. No new releases were scheduled for this zone this week. Approximately 300,000 spring Chinook pre-smolts are scheduled to be released into the Selway River on or around September 4<sup>th</sup>. The Selway River is a tributary of the Clearwater River. These spring Chinook pre-smolts are 100% unmarked and are not expected to out-migrate until the spring of 2018.

**Upper Columbia Zone:** The Upper Columbia Zone encompasses the area of the Columbia River and its tributaries from Priest Rapids Dam to Chief Joseph Dam. No new releases were scheduled for this zone this week and no new releases are scheduled over the next two weeks.

**Middle Columbia Zone:** The Middle Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to Priest Rapids Dam (excluding the Snake River). No new releases were schedule for this zone this week and no new releases are scheduled over the next two weeks.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. No new releases were schedule for this zone this week and no new releases are scheduled over the next two weeks.

## Adult Passage

The adult fall Chinook count of 50,690 is about 40.2% of the 2016 count of 126,230 and 48.6% of the 10-year average count of 104,390. The 2017 Bonneville Dam fall Chinook jack count of 7,805 is about 50.7% of the 2016 count of 15,392 and 51.3% of the 10-year average count of 15,222. The 2017 McNary fall Chinook adult count of 5,174 is about 27.5% of the 2016 count and 32.8% of the 10-year average count. The

2017 adult fall Chinook count of 1,678 at Ice Harbor Dam in the Snake River has 3,880 fewer fish than the 2016 count and has 2,924 fewer fish than the 10-year average count.

The 2017 Bonneville Dam adult steelhead count of 76,629 is about 67.9% of the 2016 count of 112,769 and 31% of the 10-year average count of 246,812. The 2017 Bonneville Dam adult unclipped steelhead count of 26,657 is about 72.4% of the 2016 count of 36,814 and 29.8% of the 10-year average count of 89,601. Daily adult steelhead counts at Lower Granite Dam ranged from 19 to 35 adults per day last week. This year's Lower Granite steelhead count of 8,036 has 3,124 fewer fish than the 2016 count of 11,160 and is 39% of the 10-year average count of 20,619. The 2017 Lower Granite Dam adult unclipped steelhead count of 3,509 has 2,042 fewer fish than the 2016 count of 5,551 and 4,652 fewer fish than the 10-year average count of 8,161. At Willamette Falls, the 2017 count for steelhead was 2,705 as of August 30<sup>th</sup>. This year's steelhead count is about 10% of the 2016 count of 26,818 and 12% of the 10-year average count of 22,284.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 1 and 5 last week. The 2017 adult sockeye count at Bonneville Dam of 87,685 is about 25.6% of the 2016 count and 27.9% of the 10-year average count. The 2017 adult sockeye count at McNary Dam of 57,968 is about 22.2% of the 2016 count and 25.6% of the 10-year average count. The Lower Granite Dam 2017 adult sockeye count of 227 has 585 fewer fish than the 2016 count of 812 and 835 fewer fish than the 10-year average count of 1,062.

As of August 31<sup>st</sup> at Bonneville Dam, the adult shad count was 3,102,554. This year's shad count is about 1.8 times greater than the 2016 count of 1,770,303 and 1.5 times greater than the 10-year average count of 2,045,607. A total of 81,181 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2017 lamprey count is about 1.6 times greater than the 2016 count of 51,047 and 3.5 times greater than the 10-year average count of 23,144.

## Hatchery Releases Last Two Weeks

Hatchery Release Summary  
**From:** 8/19/2017 to 09/01/17

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
No Releases Scheduled										

## Hatchery Releases Next Two Weeks

Hatchery Release Summary  
**From:** 9/2/2017 to 9/15/2017

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Nez Perce Tribe	Dworshak NFH	CH0	SP	2018	300,000	09-04-17	09-04-17	Selway River	Clearwater River M F	SNAK
<b>Nez Perce Tribe Total</b>					<b>300,000</b>					
<b>Grand Total</b>					<b>300,000</b>					

CH = Chinook, ST = Steelhead, CO = Coho, SO = Sockeye, CT = Cutthroat Trout, CM = Chum

**Daily Average Flow and Spill (in Kcfs) at Mid-Columbia Projects**

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/18/2017	78.3	0.1	75.4	0.0	89.6	7.6	85.7	9.8	88.3	17.9	84.5	21.8	76.5	27.9
08/19/2017	74.8	0.1	82.7	0.0	75.7	6.6	76.3	9.8	80.7	7.3	106.1	20.7	105.6	28.5
08/20/2017	68.3	0.1	64.6	0.0	68.5	0.0	64.2	6.6	65.3	7.3	80.5	18.3	76.1	25.9
08/21/2017	90.6	0.1	86.9	0.0	89.7	0.0	89.8	6.4	93.9	4.2	97.9	18.2	92.9	24.8
08/22/2017	82.2	0.1	87.5	0.0	91.9	0.0	89.9	7.9	94.3	2.1	103.1	18.2	97.2	24.4
08/23/2017	80.3	0.0	81.9	0.0	87.1	0.0	89.5	9.0	93.5	0.7	105.1	18.2	97.7	25.5
08/24/2017	68.5	0.1	66.1	0.0	65.7	0.0	64.4	6.4	64.1	0.0	71.6	17.9	67.3	25.2
08/25/2017	78.6	0.1	77.8	0.0	74.0	0.0	70.7	6.4	74.8	1.3	90.9	17.7	86.0	25.0
08/26/2017	75.0	0.1	73.3	0.0	69.9	0.0	66.9	0.0	67.6	2.2	65.9	17.7	60.7	24.9
08/27/2017	80.8	0.1	81.4	0.0	85.6	0.0	82.4	0.0	84.9	5.0	83.8	18.8	77.0	25.2
08/28/2017	93.9	0.1	96.3	0.0	88.7	0.0	93.7	0.0	97.6	3.2	116.3	18.9	112.9	24.8
08/29/2017	108.1	0.1	102.9	0.0	105.9	4.9	100.7	0.0	104.2	1.5	108.8	18.4	103.3	23.0
08/30/2017	122.2	0.1	119.0	0.0	117.1	6.6	110.2	9.7	111.7	1.8	93.4	8.8	77.5	14.4
08/31/2017	113.4	0.1	119.7	0.0	121.8	9.7	117.6	1.8	124.9	4.9	137.4	16.5	133.0	18.2

**Daily Average Flow and Spill (in Kcfs) at Snake Basin Projects**

Date	Dworshak		Brownlee Inflow	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/18/2017	8.1	3.6	---	11.6	26.0	14.1	24.2	8.8	23.8	11.4	27.5	17.6
08/19/2017	8.1	3.6	---	9.9	27.2	15.4	26.6	8.7	24.9	12.3	26.1	16.0
08/20/2017	9.1	4.5	---	9.9	27.4	15.4	25.6	8.8	25.2	12.6	29.5	19.5
08/21/2017	9.1	4.5	---	13.4	26.7	14.7	25.0	8.8	24.8	11.1	27.6	18.0
08/22/2017	9.0	4.5	---	14.0	30.0	17.2	28.5	8.9	27.4	12.0	30.9	21.1
08/23/2017	9.0	4.4	---	13.5	30.0	16.4	29.2	10.4	28.1	12.8	30.0	20.3
08/24/2017	9.0	4.4	---	12.1	31.1	17.3	30.4	10.7	28.9	13.5	31.0	21.3
08/25/2017	9.0	4.4	---	11.8	28.2	15.3	26.5	10.7	26.0	10.7	28.6	18.9
08/26/2017	9.0	4.3	---	12.2	27.3	14.7	26.4	9.0	25.8	10.3	28.2	18.5
08/27/2017	9.0	4.4	---	12.8	30.1	16.3	29.1	9.0	27.3	12.1	30.7	21.0
08/28/2017	9.0	4.4	---	13.7	29.2	15.7	28.4	10.6	27.9	12.8	29.4	19.7
08/29/2017	9.0	4.4	---	13.0	27.8	15.4	25.9	10.7	25.3	10.1	27.9	18.2
08/30/2017	9.0	4.4	---	13.6	29.6	17.5	27.8	9.0	27.5	12.1	30.5	20.8
08/31/2017	9.0	4.3	---	15.3	30.3	18.3	30.2	9.0	27.1	13.7	29.3	19.4

**Daily Average Flow and Spill (in Kcfs) at Lower Columbia Projects**

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
08/18/2017	117.2	58.8	109.5	32.8	102.0	40.9	116.6	73.1	0.9	30.3
08/19/2017	125.5	63.0	120.8	36.2	113.5	45.4	117.2	74.0	0.9	29.9
08/20/2017	123.7	62.1	115.5	34.5	105.4	42.2	125.1	81.5	0.7	30.5
08/21/2017	129.2	64.8	121.1	36.3	114.6	45.9	123.1	79.7	0.4	30.6
08/22/2017	131.8	66.2	125.1	37.3	114.9	45.9	132.8	88.8	1.3	30.3
08/23/2017	132.8	66.6	126.8	38.0	116.0	46.2	131.4	87.1	0.9	31.1
08/24/2017	129.4	65.0	117.3	34.9	107.2	43.0	128.0	85.6	0.9	30.7
08/25/2017	114.6	57.5	114.0	34.0	105.7	42.1	121.3	77.0	0.9	31.0
08/26/2017	112.2	56.3	103.2	30.9	96.7	38.9	115.5	70.9	0.9	31.3
08/27/2017	110.6	55.5	102.9	30.9	93.2	37.2	106.5	62.3	0.9	31.0
08/28/2017	127.1	63.7	117.7	35.3	109.6	43.8	115.4	71.5	0.9	30.6
08/29/2017	144.0	72.1	142.5	42.7	133.1	53.0	143.2	90.9	0.9	39.1
08/30/2017	142.2	71.3	130.8	39.2	121.0	48.4	137.7	92.3	0.9	32.1
08/31/2017	148.3	74.4	140.8	42.5	132.3	52.7	144.4	91.6	1.6	38.7

## Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w/ GBT signs	Number w/ Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
<b>Lower Granite Dam</b>											
<b>Little Goose Dam</b>											
	08/21/17	Chinook + Steelhead	18*	0	0			0	0	0	0
<b>Lower Monumental Dam</b>											
<b>McNary Dam</b>											
<b>Bonneville Dam</b>											
	08/19/17	Chinook + Steelhead	87*	0	0			0	0	0	0
<b>Rock Island Dam</b>											

Samples marked with an asterisk indicate the sample size criteria of 100 fish was not met due to insufficient numbers of fish to sample that day. The inability to collect an adequate sample precludes the accurate estimation of the percentage of fish with GBT, and no estimate is provided.

The action criteria for interruption of the voluntary spill for fish program is defined as either 15% of examined fish showing signs of gas bubble trauma in their non-paired fins, or 5% of the fish examined showing severe signs of gas bubble trauma in their non-paired fins where severe signs constitute >25% of the surface area of the fin is occluded by gas bubbles, corresponding to ranks of 3 or 4.



## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

### Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	---	---	---	0	---	---	---	0	106.5	106.6	106.8	24	106.4	107.1	107.9	24	106.9	107.2	107.6	24
8/19	---	---	---	0	---	---	---	0	106.0	106.2	106.6	24	106.2	106.9	108.3	24	106.8	107.3	108.0	24
8/20	---	---	---	0	---	---	---	0	105.7	105.8	105.9	24	106.4	107.3	108.8	24	106.7	107.3	107.9	24
8/21	---	---	---	0	---	---	---	0	105.2	105.4	105.6	24	105.5	106.1	107.4	24	106.7	107.2	108.0	24
8/22	---	---	---	0	---	---	---	0	105.4	105.6	105.9	24	105.4	106.2	107.7	24	107.3	107.7	108.1	24
8/23	---	---	---	0	---	---	---	0	105.6	105.8	106.1	24	105.9	106.6	108.3	24	107.5	108.1	108.7	24
8/24	---	---	---	0	---	---	---	0	105.7	105.9	106.2	24	106.3	107.1	108.5	24	107.4	107.9	108.6	24
8/25	---	---	---	0	---	---	---	0	105.0	105.2	105.4	24	105.5	106.1	106.7	24	106.0	106.6	106.9	24
8/26	---	---	---	0	---	---	---	0	104.6	104.8	104.9	24	104.8	105.4	106.4	24	105.3	105.9	106.4	24
8/27	---	---	---	0	---	---	---	0	104.5	104.7	105.1	24	104.8	105.5	106.5	24	105.6	106.2	106.5	24
8/28	---	---	---	0	---	---	---	0	105.0	105.3	105.7	24	104.4	105.0	106.4	24	106.3	106.7	107.0	24
8/29	---	---	---	0	---	---	---	0	105.6	106.1	106.4	24	104.9	105.5	105.9	24	106.1	106.6	106.7	24
8/30	---	---	---	0	---	---	---	0	106.1	106.2	106.4	24	105.0	105.3	105.5	24	106.0	106.3	106.5	24
8/31	---	---	---	0	---	---	---	0	105.5	105.7	105.9	23	104.4	104.8	105.7	23	104.5	104.9	105.2	23

### Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	106.3	107.0	107.5	24	106.9	107.7	108.3	24	109.0	109.3	109.5	24	107.3	107.6	107.8	24	109.9	111.3	116.2	22
8/19	106.1	106.8	107.4	24	106.5	107.1	107.7	24	108.0	108.5	109.1	24	107.5	108.2	109.3	23	110.4	111.6	113.9	22
8/20	106.0	106.6	107.2	24	106.1	106.8	107.3	24	106.4	107.0	107.4	24	107.4	107.6	108.0	24	108.9	109.4	110.0	20
8/21	105.7	106.1	106.4	24	106.7	107.3	108.0	24	106.4	107.1	107.5	24	107.6	108.1	108.8	24	109.9	110.9	111.2	22
8/22	106.5	106.9	107.1	24	107.0	107.8	108.3	24	107.1	107.7	107.9	24	107.3	107.5	107.6	24	109.8	110.8	111.4	23
8/23	106.9	107.5	108.0	24	107.4	108.4	108.9	24	107.7	108.2	108.5	24	107.3	107.7	108.0	24	110.2	111.9	112.9	24
8/24	106.8	107.4	108.1	24	107.3	107.7	108.0	24	107.4	107.7	108.0	24	107.2	107.4	107.6	24	107.7	108.5	109.1	21
8/25	105.8	106.3	107.0	24	106.2	106.5	106.9	24	106.3	106.7	106.9	24	106.2	106.5	107.0	24	108.0	109.4	111.1	22
8/26	105.0	105.5	105.9	24	105.6	106.2	107.0	24	105.7	106.1	106.5	24	105.4	105.6	106.1	24	103.2	104.1	106.6	22
8/27	105.0	105.5	105.8	24	106.0	106.7	107.2	24	106.1	106.7	107.1	24	105.9	106.5	106.9	24	103.4	105.1	105.9	24
8/28	105.4	105.8	106.3	24	106.1	106.6	107.0	24	106.3	106.7	107.0	24	106.5	106.8	107.2	23	105.1	105.8	106.6	22
8/29	105.7	106.1	106.4	24	106.3	106.9	107.5	24	107.9	109.9	111.9	24	106.7	107.0	107.3	24	105.4	106.3	106.8	21
8/30	105.6	105.9	106.3	24	105.8	106.3	106.8	24	108.3	110.0	111.6	24	106.5	106.7	106.8	24	107.1	108.4	126.3	23
8/31	104.1	104.5	104.9	23	104.9	105.2	105.7	23	106.6	107.5	107.9	23	106.3	106.8	107.2	23	107.6	108.5	124.9	18

### Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	107.4	107.7	108.2	22	113.0	113.6	114.3	21	105.8	106.8	107.2	24	110.1	110.8	114.7	24	107.5	108.2	109.1	24
8/19	107.7	108.7	111.0	22	109.2	110.1	112.5	21	105.8	106.5	107.8	24	108.7	109.3	110.7	24	106.5	106.8	107.2	24
8/20	107.8	108.2	108.7	22	109.7	110.3	111.1	20	106.2	107.0	107.6	24	109.3	109.8	110.7	24	106.5	106.7	107.4	24
8/21	107.3	107.8	109.0	22	108.0	108.5	109.3	20	107.8	109.8	110.8	24	109.3	109.8	110.6	24	107.0	107.5	108.8	24
8/22	107.7	108.5	108.7	24	107.8	108.6	110.6	21	108.3	109.5	111.0	24	109.4	109.8	110.8	24	108.4	108.8	109.2	24
8/23	107.5	108.0	108.6	24	107.0	107.6	108.6	24	106.9	107.7	108.2	24	109.1	109.4	110.3	24	107.7	108.1	109.1	24
8/24	107.0	107.5	108.4	22	106.1	106.5	107.3	20	104.9	105.9	106.8	24	108.7	109.2	109.8	24	106.7	107.2	107.9	24
8/25	105.9	106.3	107.1	22	104.6	105.5	107.7	21	103.8	105.7	107.0	24	107.2	107.9	108.9	24	104.1	104.6	105.4	24
8/26	106.1	106.4	107.2	23	105.1	105.8	108.7	20	104.6	106.6	108.0	24	108.4	109.2	110.3	24	106.1	106.6	107.3	24
8/27	104.8	105.3	105.6	24	105.3	107.0	110.6	23	106.2	107.9	109.3	24	108.7	109.5	111.3	24	107.0	107.8	108.3	24
8/28	105.8	106.2	106.6	23	105.2	106.1	109.4	21	106.6	107.5	108.8	24	108.1	108.9	111.1	24	107.8	108.1	108.5	24
8/29	105.9	106.4	106.8	24	105.0	105.6	106.6	21	107.2	108.2	109.8	24	108.6	108.9	110.5	24	106.6	107.1	107.5	24
8/30	105.8	106.1	106.3	24	104.6	104.8	106.6	21	105.2	106.2	106.6	24	107.4	108.7	110.9	24	106.3	107.2	107.6	24
8/31	107.3	109.1	115.3	21	106.0	107.3	110.5	17	104.1	104.5	105.2	24	107.1	110.5	126.2	24	106.0	107.6	113.5	24

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

### Total Dissolved Gas Saturation Data at Lower Columbia and Snake River Sites

Date	<u>Priest R. Dnst</u>			#	<u>Pasco</u>			#	<u>Dworshak</u>			#	<u>Clrwr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	---	---	---	0	---	---	---	0	113.9	114.3	114.8	24	110.9	112.2	113.6	24	101.7	103.5	105.4	24
8/19	---	---	---	0	---	---	---	0	113.7	114.1	114.6	24	110.6	111.8	112.8	24	101.4	102.8	104.3	24
8/20	---	---	---	0	---	---	---	0	115.8	116.2	116.6	24	111.7	113.0	114.1	24	101.3	102.8	104.2	23
8/21	---	---	---	0	---	---	---	0	115.8	116.1	116.5	24	111.9	112.9	114.3	24	101.1	102.5	104.3	23
8/22	---	---	---	0	---	---	---	0	116.1	116.4	116.7	24	112.2	113.3	114.3	24	101.5	102.8	104.5	23
8/23	---	---	---	0	---	---	---	0	116.1	116.4	116.8	24	111.9	112.8	113.4	24	101.0	102.0	103.1	24
8/24	---	---	---	0	---	---	---	0	116.4	116.7	117.2	24	112.2	113.2	114.0	24	100.9	102.1	103.1	23
8/25	---	---	---	0	---	---	---	0	116.1	116.4	116.8	23	111.7	112.8	113.8	23	100.2	101.7	103.1	24
8/26	---	---	---	0	---	---	---	0	115.7	116.0	116.5	24	111.4	112.5	113.9	24	100.1	101.7	103.2	24
8/27	---	---	---	0	---	---	---	0	115.8	116.2	116.6	24	111.4	112.6	113.8	24	100.7	102.4	104.1	24
8/28	---	---	---	0	---	---	---	0	116.0	116.3	116.5	24	111.5	112.5	113.5	24	100.8	102.1	103.8	23
8/29	---	---	---	0	---	---	---	0	116.2	116.6	116.9	24	111.9	113.0	114.2	24	101.1	102.7	104.1	24
8/30	---	---	---	0	---	---	---	0	116.1	116.3	116.9	24	111.4	112.3	113.2	24	100.6	101.8	103.6	24
8/31	---	---	---	0	---	---	---	0	115.7	116.0	116.4	23	111.4	112.5	113.8	23	100.8	102.2	103.9	22

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwr-Lewiston</u>			#	<u>Lower Granite</u>			#	<u>L. Granite Tlwr</u>			#	<u>Little Goose</u>			#	<u>L. Goose Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	105.3	107.6	109.5	24	101.6	101.9	102.1	24	109.5	110.0	110.5	24	105.8	106.2	106.7	24	108.7	109.0	109.3	24
8/19	105.0	107.0	108.7	24	101.2	101.4	101.6	24	109.8	111.0	112.5	24	106.6	106.9	108.1	24	108.6	109.0	109.3	24
8/20	104.8	107.0	108.6	24	100.8	101.1	101.5	24	109.9	110.9	111.8	24	106.3	106.8	107.6	24	108.8	109.2	109.5	24
8/21	105.0	106.9	109.1	23	100.9	101.3	101.9	24	109.2	109.5	110.0	24	106.3	106.5	106.7	24	108.7	109.0	109.3	24
8/22	105.5	107.5	109.1	23	101.9	102.5	102.9	24	111.6	112.7	113.2	24	107.0	107.4	107.7	24	108.8	109.1	109.4	24
8/23	104.6	105.8	107.1	20	101.8	102.0	102.4	24	111.1	112.4	112.9	24	106.9	107.0	107.3	24	108.7	109.0	109.1	24
8/24	105.6	107.4	109.3	23	101.5	101.7	102.0	24	111.6	112.4	112.7	24	105.5	106.0	106.6	24	108.3	108.5	108.7	24
8/25	105.1	107.0	108.6	22	101.5	101.7	101.9	24	110.4	111.6	113.0	24	105.6	105.9	106.0	24	109.4	110.6	113.7	24
8/26	105.0	107.1	108.9	24	101.4	101.7	102.0	24	110.0	110.8	112.2	24	104.9	105.0	105.3	24	108.3	108.7	109.1	24
8/27	105.2	107.3	109.0	24	101.6	101.7	102.0	24	110.9	112.2	112.5	24	104.2	104.4	105.5	24	108.2	108.6	109.0	24
8/28	104.7	106.2	107.6	24	101.8	102.1	102.6	24	111.2	113.3	115.3	24	105.5	105.6	105.8	24	108.6	109.2	110.1	24
8/29	105.6	107.7	109.3	24	101.6	101.9	102.4	24	110.3	111.5	112.4	24	106.0	106.1	106.3	24	108.7	109.3	110.0	24
8/30	105.2	106.9	108.7	24	102.0	102.3	102.6	24	111.5	112.6	113.2	24	105.9	106.2	106.6	24	108.5	108.8	109.1	24
8/31	105.0	107.0	108.7	23	101.5	101.7	101.8	23	112.2	112.4	112.7	23	105.0	105.8	106.4	23	108.2	108.5	108.7	23

### Total Dissolved Gas Saturation Data at Snake and Lower Columbia River Sites

Date	<u>Lower Mon.</u>			#	<u>L. Mon. Tlwr</u>			#	<u>Ice Harbor</u>			#	<u>Ice Harbor Tlwr</u>			#	<u>McNary-Oregon</u>			#
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
8/18	104.8	105.0	105.1	24	112.4	113.2	113.6	24	108.6	108.8	109.3	24	99.1	102.3	103.9	24	---	---	---	0
8/19	104.6	104.7	104.8	24	111.6	113.4	114.7	24	108.9	109.0	109.2	24	93.3	93.3	95.3	10	---	---	---	0
8/20	104.6	104.8	104.9	24	112.8	113.1	113.3	24	109.5	109.9	110.3	24	---	---	---	0	---	---	---	0
8/21	104.5	104.9	105.2	24	111.8	112.7	113.2	24	109.8	110.1	110.3	24	---	---	---	0	---	---	---	0
8/22	105.0	105.3	105.6	24	111.5	112.9	114.6	24	109.9	110.1	110.3	24	112.4	112.8	114.3	14	---	---	---	0
8/23	105.7	106.2	106.4	24	111.1	112.1	112.7	24	109.3	109.5	109.8	24	111.1	113.5	114.5	24	---	---	---	0
8/24	106.4	106.5	106.8	24	111.1	112.0	113.1	24	109.0	109.1	109.3	24	111.2	112.9	114.5	24	---	---	---	0
8/25	107.1	108.0	112.8	24	110.1	110.8	112.1	24	108.5	108.7	108.9	24	110.3	111.5	113.2	24	---	---	---	0
8/26	105.7	106.0	106.5	24	109.8	110.3	110.7	24	108.1	108.4	108.6	24	109.7	110.4	111.1	24	---	---	---	0
8/27	105.3	105.7	106.0	24	110.9	112.3	113.0	24	107.8	108.0	108.2	24	110.5	112.4	113.7	24	---	---	---	0
8/28	105.1	105.4	106.0	24	111.2	112.2	113.8	24	108.0	108.1	108.3	24	110.1	111.1	113.3	24	---	---	---	0
8/29	105.9	106.6	107.4	24	110.7	111.3	113.7	24	108.3	108.5	109.0	24	110.3	111.4	113.3	24	---	---	---	0
8/30	105.8	106.2	106.6	24	110.8	112.2	112.8	24	108.8	108.9	109.0	24	110.9	112.5	114.4	24	---	---	---	0
8/31	104.9	105.3	105.6	23	111.6	113.6	114.0	23	107.8	108.1	108.4	23	111.0	112.8	113.5	23	---	---	---	0

## Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/18	108.2	108.3	108.7	24	113.8	114.4	114.9	24	102.6	102.8	102.9	24	111.3	111.7	112.3	24	105.1	105.8	106.1	24
8/19	107.7	108.0	108.5	24	113.9	114.4	114.8	24	101.8	102.1	102.4	24	111.1	112.2	112.9	24	104.8	105.2	105.5	24
8/20	108.8	109.2	109.9	24	113.7	114.1	114.5	24	101.8	102.1	102.4	24	110.8	111.1	111.7	24	106.3	107.4	107.9	24
8/21	107.4	107.7	108.3	24	113.7	114.2	114.5	24	101.9	102.4	103.2	24	111.3	112.3	112.8	24	106.3	107.0	107.4	24
8/22	107.9	108.3	109.0	24	114.1	114.5	114.9	24	103.2	103.7	104.1	24	111.7	112.1	112.5	24	108.1	108.8	109.4	24
8/23	107.9	108.3	108.8	24	113.4	113.7	113.9	24	103.9	104.7	105.2	24	111.6	112.1	112.6	24	106.9	107.4	107.7	24
8/24	107.4	107.8	108.4	24	113.3	113.6	113.9	24	103.9	104.2	104.4	24	111.3	111.5	111.7	24	105.9	106.3	106.5	24
8/25	106.7	107.0	107.4	24	113.2	113.6	114.1	24	103.5	104.0	104.9	24	111.2	111.6	111.9	24	104.5	105.1	105.4	24
8/26	106.2	106.5	106.9	24	113.1	113.5	113.9	24	104.1	104.5	104.9	24	110.8	111.1	111.3	24	106.9	108.0	108.5	24
8/27	105.6	106.0	106.4	24	113.0	113.4	113.8	24	104.9	105.2	105.8	24	111.0	111.3	111.6	24	108.8	109.5	109.9	24
8/28	106.2	106.6	106.8	24	113.2	113.8	114.7	24	105.8	106.5	107.1	24	112.7	114.2	114.9	24	110.1	110.8	111.5	24
8/29	106.8	106.9	107.0	24	113.8	114.7	115.4	24	107.1	107.4	107.9	24	114.0	114.5	115.3	24	110.4	110.9	111.3	24
8/30	107.3	107.5	107.8	24	113.8	114.3	115.0	24	105.6	105.9	106.5	24	112.8	113.2	113.8	24	107.3	108.1	108.8	24
8/31	106.9	107.2	107.7	23	113.7	114.6	115.6	23	104.2	104.5	104.8	23	113.7	114.6	115.3	23	104.8	104.9	105.2	23

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas\Washougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/18	109.1	109.4	109.7	24	104.7	104.9	105.0	24	113.6	114.0	114.6	24	112.5	113.3	113.9	24	112.5	112.6	112.7	24
8/19	109.5	110.3	110.9	24	103.7	104.1	104.2	24	113.4	114.1	114.4	24	110.9	112.0	112.8	24	112.5	112.6	112.7	24
8/20	110.2	110.5	111.0	24	104.2	104.7	105.0	24	114.7	115.6	116.0	24	111.4	112.7	113.4	24	113.6	114.6	116.0	24
8/21	110.1	111.0	111.7	24	105.1	105.8	106.5	24	115.5	116.3	116.8	24	113.4	114.7	115.7	24	113.6	114.3	116.6	24
8/22	110.9	111.6	112.2	24	107.6	108.5	109.0	24	116.1	116.5	116.8	24	114.4	116.0	117.1	24	114.6	115.7	116.6	24
8/23	110.6	111.1	111.3	24	108.2	108.4	108.8	24	115.3	115.7	116.1	24	113.5	114.2	115.6	24	114.0	114.4	116.3	24
8/24	109.5	109.8	110.5	24	105.7	106.3	107.6	24	114.0	114.5	114.8	24	111.1	111.9	112.6	24	113.4	113.5	113.7	24
8/25	108.5	108.8	109.3	24	105.3	105.7	105.9	24	115.3	116.1	117.6	24	111.1	113.1	114.1	24	113.3	113.4	113.5	24
8/26	108.5	109.3	110.0	24	105.5	106.2	106.5	24	115.0	116.0	117.4	24	113.7	115.2	115.9	24	112.7	113.1	113.4	24
8/27	109.5	110.1	110.6	24	106.5	107.0	107.5	24	113.8	114.6	115.4	24	113.9	114.5	115.5	24	111.5	111.7	111.9	24
8/28	110.6	111.3	112.3	24	108.9	109.9	110.9	24	113.9	114.8	116.0	24	114.4	115.8	116.6	24	113.0	114.5	117.2	24
8/29	111.7	112.7	113.4	24	110.9	111.3	111.7	24	116.2	116.8	117.2	24	115.8	116.7	117.2	24	115.2	116.4	117.3	24
8/30	110.5	111.0	111.4	24	108.5	109.4	111.1	24	115.3	115.9	117.5	24	121.7	131.5	151.5	24	114.8	116.1	117.3	24
8/31	109.9	110.7	111.0	23	105.7	105.9	106.3	23	114.9	115.3	115.7	23	129.1	143.5	152.2	23	114.6	115.6	116.8	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 9/1/2017 12:00

### Two-Week Summary of Passage Indices

\* One or more of the sites on this date had an incomplete or biased sample.

See Sampling Comments: <http://www.fpc.org/currentDaily/smpcomments.htm>

For clip information see: <http://www.fpc.org/CurrentDaily/catch.htm>

For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmptsubmitdata.asp>

COMBINED YEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/18/2017 *	---	---	---	---	---	0	0	0	---	0	0
08/19/2017	---	---	---	---	---	0	0	0	0	---	---
08/20/2017	---	---	---	---	---	0	0	0	---	---	0
08/21/2017	---	---	---	---	---	0	2	0	0	---	---
08/22/2017 *	---	---	---	---	---	0	0	0	---	0	0
08/23/2017	---	---	---	---	---	0	0	0	0	---	---
08/24/2017	---	---	---	---	---	0	0	0	---	---	0
08/25/2017 *	---	---	---	---	---	0	2	0	0	0	---
08/26/2017	---	---	---	---	---	0	0	0	---	---	0
08/27/2017	---	---	---	---	---	0	0	0	0	---	---
08/28/2017	---	---	---	---	---	0	2	0	---	---	0
08/29/2017 *	---	---	---	---	---	0	0	0	0	0	---
08/30/2017	---	---	---	---	---	0	0	0	---	---	0
08/31/2017	---	---	---	---	---	0	0	0	0	---	---
09/01/2017 *	---	---	---	---	---	0	0	---	---	0	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>	<b>33,704</b>	<b>22,233</b>	<b>21,106</b>	<b>8</b>	<b>3,998,337</b>	<b>2,400,545</b>	<b>2,885,795</b>	<b>50,596</b>	<b>1,583,272</b>	<b>1,720,241</b>	<b>1,947,910</b>

COMBINED SUBYEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/18/2017 *	---	---	---	---	---	125	69	160	---	125	1,277
08/19/2017	---	---	---	---	---	83	23	160	1,455	---	---
08/20/2017	---	---	---	---	---	110	19	76	---	---	2,246
08/21/2017	---	---	---	---	---	91	63	91	639	---	---
08/22/2017 *	---	---	---	---	---	103	35	78	---	105	891
08/23/2017	---	---	---	---	---	76	22	71	875	---	---
08/24/2017	---	---	---	---	---	63	30	55	---	---	1,020
08/25/2017 *	---	---	---	---	---	85	12	53	635	124	---
08/26/2017	---	---	---	---	---	63	12	47	---	---	273
08/27/2017	---	---	---	---	---	66	22	53	218	---	---
08/28/2017	---	---	---	---	---	72	24	34	---	---	211
08/29/2017 *	---	---	---	---	---	62	15	31	100	47	---
08/30/2017	---	---	---	---	---	30	18	30	---	---	142
08/31/2017	---	---	---	---	---	47	13	30	216	---	---
09/01/2017 *	---	---	---	---	---	34	6	---	---	21	728
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,110</b>	<b>383</b>	<b>969</b>	<b>4,138</b>	<b>422</b>	<b>6,788</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>26</b>	<b>69</b>	<b>591</b>	<b>84</b>	<b>849</b>
<b>YTD</b>	<b>0</b>	<b>11</b>	<b>40</b>	<b>0</b>	<b>1,020,549</b>	<b>1,064,814</b>	<b>655,157</b>	<b>74,306</b>	<b>2,473,666</b>	<b>1,067,610</b>	<b>4,046,230</b>

## Two-Week Summary of Passage Indices

		COMBINED COHO										
Date		WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/18/2017	*	---	---	---	---	---	0	0	0	---	0	0
08/19/2017		---	---	---	---	---	0	0	0	0	---	---
08/20/2017		---	---	---	---	---	0	0	0	---	---	0
08/21/2017		---	---	---	---	---	0	0	0	0	---	---
08/22/2017	*	---	---	---	---	---	0	0	0	---	0	0
08/23/2017		---	---	---	---	---	0	0	0	0	---	---
08/24/2017		---	---	---	---	---	0	0	0	---	---	0
08/25/2017	*	---	---	---	---	---	0	0	0	0	0	---
08/26/2017		---	---	---	---	---	0	0	0	---	---	0
08/27/2017		---	---	---	---	---	0	0	0	0	---	---
08/28/2017		---	---	---	---	---	0	0	0	---	---	0
08/29/2017	*	---	---	---	---	---	0	0	0	0	0	---
08/30/2017		---	---	---	---	---	0	0	0	---	---	0
08/31/2017		---	---	---	---	---	0	0	0	0	---	---
09/01/2017	*	---	---	---	---	---	0	0	---	---	0	0
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>2,232</b>	<b>0</b>	<b>128,502</b>	<b>86,636</b>	<b>69,601</b>	<b>35,300</b>	<b>86,630</b>	<b>96,620</b>	<b>356,050</b>

		COMBINED STEELHEAD										
Date		WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/18/2017	*	---	---	---	---	---	0	0	1	---	0	0
08/19/2017		---	---	---	---	---	0	0	0	0	---	---
08/20/2017		---	---	---	---	---	0	0	0	---	---	0
08/21/2017		---	---	---	---	---	2	0	0	0	---	---
08/22/2017	*	---	---	---	---	---	0	2	1	---	0	0
08/23/2017		---	---	---	---	---	1	0	0	0	---	---
08/24/2017		---	---	---	---	---	0	0	0	---	---	0
08/25/2017	*	---	---	---	---	---	0	0	0	0	0	---
08/26/2017		---	---	---	---	---	0	0	0	---	---	0
08/27/2017		---	---	---	---	---	0	0	0	0	---	---
08/28/2017		---	---	---	---	---	2	0	0	---	---	0
08/29/2017	*	---	---	---	---	---	0	0	0	0	0	---
08/30/2017		---	---	---	---	---	0	0	2	---	---	0
08/31/2017		---	---	---	---	---	0	0	1	0	---	---
09/01/2017	*	---	---	---	---	---	0	2	---	---	0	0
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>		<b>7,117</b>	<b>15,916</b>	<b>7,614</b>	<b>1</b>	<b>4,065,200</b>	<b>1,853,168</b>	<b>2,517,519</b>	<b>32,136</b>	<b>442,841</b>	<b>1,317,075</b>	<b>264,513</b>

## Two-Week Summary of Passage Indices

<b>COMBINED SOCKEYE</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/18/2017 *	---	---	---	---	---	0	0	0	---	0	0
08/19/2017	---	---	---	---	---	0	0	1	10	---	---
08/20/2017	---	---	---	---	---	0	0	5	---	---	0
08/21/2017	---	---	---	---	---	0	0	4	0	---	---
08/22/2017 *	---	---	---	---	---	0	0	2	---	0	0
08/23/2017	---	---	---	---	---	0	0	1	0	---	---
08/24/2017	---	---	---	---	---	0	0	0	---	---	0
08/25/2017 *	---	---	---	---	---	2	0	3	0	0	---
08/26/2017	---	---	---	---	---	0	0	0	---	---	7
08/27/2017	---	---	---	---	---	2	0	0	0	---	---
08/28/2017	---	---	---	---	---	0	0	0	---	---	0
08/29/2017 *	---	---	---	---	---	0	0	1	0	0	---
08/30/2017	---	---	---	---	---	0	0	0	---	---	0
08/31/2017	---	---	---	---	---	0	0	2	0	---	---
09/01/2017 *	---	---	---	---	---	1	0	---	---	0	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>19</b>	<b>10</b>	<b>0</b>	<b>7</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>YTD</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61,191</b>	<b>24,473</b>	<b>34,028</b>	<b>11,197</b>	<b>156,380</b>	<b>117,049</b>	<b>145,288</b>

<b>COMBINED LAMPREY JUVENILES</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/18/2017 *	---	---	---	---	---	5	0	0	---	0	0
08/19/2017	---	---	---	---	---	5	0	2	10	---	---
08/20/2017	---	---	---	---	---	7	0	0	---	---	0
08/21/2017	---	---	---	---	---	4	0	0	25	---	---
08/22/2017 *	---	---	---	---	---	0	1	1	---	0	0
08/23/2017	---	---	---	---	---	5	0	0	12	---	---
08/24/2017	---	---	---	---	---	4	0	0	---	---	4
08/25/2017 *	---	---	---	---	---	1	0	0	40	0	---
08/26/2017	---	---	---	---	---	3	0	0	---	---	2
08/27/2017	---	---	---	---	---	2	0	0	24	---	---
08/28/2017	---	---	---	---	---	4	0	1	---	---	0
08/29/2017 *	---	---	---	---	---	1	0	0	28	0	---
08/30/2017	---	---	---	---	---	0	0	0	---	---	2
08/31/2017	---	---	---	---	---	0	0	0	12	---	---
09/01/2017 *	---	---	---	---	---	2	0	---	---	0	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>1</b>	<b>4</b>	<b>151</b>	<b>0</b>	<b>8</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>7</b>	<b>5</b>	<b>8</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>1</b>
<b>YTD</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>287</b>	<b>7,271</b>	<b>2,985</b>	<b>63</b>	<b>33,001</b>	<b>62,483</b>	<b>42,212</b>

## Two-Week Summary of Passage Indices

\* See sampling comments <http://www.fpc.org/currentDaily/smpcomments.htm>

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's), subyearling chinook (chinook 0's), steelhead, coho, sockeye, and lamprey juveniles.

Three classes of fish counts are shown in these tables:

Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details †.

Collection counts (Coll), which account for sample rates but are not adjusted for flow;

Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.

Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, pacific lamprey macrophthalmia, and unidentified lamprey species.

† In 2013 it was confirmed that juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection. Therefore, only sample counts are provided in this report.

### Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts

IMN (Collection) = Imnaha River Trap : Collection Counts

GRN (Collection) = Grande Ronde River Trap : Collection Counts

LEW (Collection) = Snake River Trap at Lewiston : Collection Counts

LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

RIS data collected for the FPC by Chelan Co. PUD.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.

IMN data collected for the FPC by the Nez Perce Tribe.

Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)

WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

## Two Week Transportation Summary

Source: Fish Passage Center

Updated:

9/1/17 12:01 PM

**08/18/17                      TO                      09/01/17**

		Species				
Site	Data	CH0	CH1	ST	SO	Grand Total
<b>LGS</b>	Sum of NumberCollected	713		3	3	719
	Sum of NumberBarged	0		0	0	0
	Sum of NumberBypassed	1		0	2	3
	Sum of Numbertrucked	838		3	1	842
	Sum of SampleMorts	11		0	0	11
	Sum of FacilityMorts	3		0	0	3
	Sum of ResearchMorts	0		0	0	0
	Sum of TotalProjectMorts	14		0	0	14
<b>LMN</b>	Sum of NumberCollected	203	3	2		208
	Sum of NumberBarged	0	0	0		0
	Sum of NumberBypassed	0	0	0		0
	Sum of Numbertrucked	186	2	2		190
	Sum of SampleMorts	0	0	0		0
	Sum of FacilityMorts	0	0	0		0
	Sum of ResearchMorts	0	0	0		0
	Sum of TotalProjectMorts	0	0	0		0
Total Sum of NumberCollected		916	3	5	3	927
Total Sum of NumberBarged		0	0	0	0	0
Total Sum of NumberBypassed		1	0	0	2	3
Total Sum of Numbertrucked		1,024	2	5	1	1,032
Total Sum of SampleMorts		11	0	0	0	11
Total Sum of FacilityMorts		3	0	0	0	3
Total Sum of ResearchMorts		0	0	0	0	0
Total Sum of TotalProjectMorts		14	0	0	0	14



## YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/1/17 12:01 PM

TO: 09/01/17

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
<b>LGR</b>	Sum of NumberCollected	628,393	2,362,698	74,225	35,589	2,329,514	5,430,419	
	Sum of NumberBarged	601,027	978,688	63,247	19,699	949,358	2,612,019	
	Sum of NumberBypassed	21,922	1,381,285	10,900	15,670	1,379,888	2,809,665	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	252	90	5	11	53	411	
	Sum of FacilityMorts	5,180	2,609	73	209	193	8,264	
	Sum of ResearchMorts	12	26	0	0	22	60	
	Sum of TotalProjectMorts	5,444	2,725	78	220	268	8,735	
<b>LGS</b>	Sum of NumberCollected	617,568	1,337,946	43,198	13,728	1,065,067	3,077,507	
	Sum of NumberBarged	595,712	495,706	39,956	10,029	313,270	1,454,673	
	Sum of NumberBypassed	17,362	837,161	3,201	3,320	751,538	1,612,582	
	Sum of NumberTrucked	1,622	0	0	1	5	1,628	
	Sum of SampleMorts	149	29	1	11	10	200	
	Sum of FacilityMorts	2,723	5,050	40	367	244	8,424	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	2,872	5,079	41	378	254	8,624	
<b>LMN</b>	Sum of NumberCollected	330,316	1,459,193	33,440	17,200	1,293,666	3,133,815	
	Sum of NumberBarged	339,179	931,886	32,959	12,568	710,514	2,027,106	
	Sum of NumberBypassed	5,516	489,562	800	4,597	560,085	1,060,560	
	Sum of NumberTrucked	186	2	0	0	2	190	
	Sum of SampleMorts	48	37	2	5	31	123	
	Sum of FacilityMorts	308	1,089	39	120	387	1,943	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	356	1,126	41	125	418	2,066	
Total Sum of NumberCollected		1,576,277	5,159,837	150,863	66,517	4,688,247	11,641,741	
Total Sum of NumberBarged		1,535,918	2,406,280	136,162	42,296	1,973,142	6,093,798	
Total Sum of NumberBypassed		44,800	2,708,008	14,901	23,587	2,691,511	5,482,807	
Total Sum of NumberTrucked		1,808	2	0	1	7	1,818	
Total Sum of SampleMorts		449	156	8	27	94	734	
Total Sum of FacilityMorts		8,211	8,748	152	696	824	18,631	
Total Sum of ResearchMorts		12	26	0	0	22	60	
Total Sum of TotalProjectMorts		8,672	8,930	160	723	940	19,425	

**Cumulative Adult Passage at Mainstem Dams Through: 08/31**

dam	enddate	Spring Chinook						Summer Chinook						Fall Chinook					
		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/31	83624	18110	137215	11145	150783	25708	88044	10648	119591	10834	97732	22097	50690	7805	126230	15392	104390	15222
TDA	08/31	58308	12497	105504	9999	118766	22002	69246	9277	95764	8800	81626	17772	17762	2413	49029	6993	44930	8618
JDA	08/31	46675	12475	93659	8262	103450	20515	60416	7363	90259	7715	73088	17197	8995	1333	30352	3774	25782	5892
MCN	08/31	44292	7020	87191	7374	93925	16835	56982	4616	83894	6501	69220	12937	5174	543	18813	2303	15789	3084
IHR	08/31	28306	6949	67484	5029	68114	11248	9284	2087	13980	1538	18950	4865	1678	162	5558	1151	4602	1030
LMN	08/31	28545	8270	66115	6266	68087	10905	8216	3388	12460	2344	19984	5812	1318	171	5183	1105	3524	887
LGS	08/31	26598	8335	62597	6365	63765	12007	9086	3754	12480	1919	19272	6335	1038	149	4419	750	2706	487
LGR	08/31	27357	8256	62050	5480	62403	13092	8952	3627	12110	2113	17232	6836	841	130	3488	620	1711	353
PRD	08/30	7268	783	16843	1003	17901	1826	52981	1760	80288	5126	57783	3021	2085	261	3454	487	3929	1738
WAN	08/30	6612	484	17164	919	17602	2161	49392	1355	79255	4110	55377	2415	1554	194	2716	583	3041	1326
RIS	08/30	8080	564	18646	715	18006	2748	56265	1333	79253	3434	56857	5479	1816	248	2458	631	2425	1350
RRH	08/30	5864	406	9449	351	7849	1209	42608	1060	58559	2827	45767	3863	1191	160	1722	438	1928	817
WEL	08/30	6589	820	11789	833	8215	1601	30101	1102	44646	2492	36069	3814	177	23	199	30	259	83
WFA	08/30	34186	2442	30317	2161	34636	1490	0	0	0	0	0	0	328	47	43	17	130	32

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2017		2016		10-Yr Avg.		10-Yr			10-Yr			Unclipped			10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.
BON	08/31	2698	390	2256	551	9083	773	87685	342486	315608	76629	112769	246812	26657	36814	89601	81181	51047	23144
TDA	08/31	196	59	337	121	1511	389	63978	288313	269162	18669	35261	120318	7920	14730	48478	28709	10627	6411
JDA	08/31	67	23	56	47	819	231	65913	289880	260510	7506	19776	88938	4175	9458	34873	20807	8837	5023
MCN	08/31	2	1	123	46	235	54	57968	261647	226360	7313	16977	66886	3354	7700	25266	2155	1370	1208
IHR	08/31	1	0	5	1	1	0	392	898	922	3011	10645	36833	1521	4183	10729	1188	793	305
LMN	08/31	0	0	3	5	0	0	345	1024	1091	3316	10266	33864	1785	4814	11609	383	228	89
LGS	08/31	0	0	1	0	0	0	285	948	1024	2443	9690	20129	1266	4739	8084	492	194	41
LGR	08/31	0	0	1	0	0	0	227	812	1062	8036	11160	20619	3509	5551	8161	315	98	15
PRD	08/30	0	0	3	1	25	2	66668	311067	266833	1212	2895	8949	0	0	0	22694	6730	3576
WAN	08/30	0	0	3	0	1	0	76072	322441	235857	1025	2627	8457	0	0	0	21357	5498	2037
RIS	08/30	0	0	0	0	0	0	73163	310266	259056	1072	2556	7186	638	1139	3383	16284	2177	887
RRH	08/30	0	0	0	0	0	0	46660	235846	218160	675	1871	5212	333	776	2292	18344	2126	807
WEL	08/30	0	0	0	0	0	0	42265	215944	207410	575	1383	3171	341	604	1441	100	1	0
WFA	08/30	9	12	1	2	43	42	0	0	0	2705	26818	22284	0	0	0	0	0	0

PRD does not post wild steelhead numbers.  
 These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.  
 Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.  
 Historic counts (pre-1996) were obtained from CRITFC and compiled by the FPC.  
 Historic counts 1997 to present were obtained from the Corps of Engineers.

