



Fish Passage Center

Weekly Report #17-24

August 18, 2017

This Week's Highlights

At the time of preparing this week's report, the COE website where operational and temperature data are posted was down. Therefore, we were only able to summarize operational and temperature data through Wednesday, August 16, 2017 for this report.

Water Supply

Precipitation throughout the Columbia Basin has varied between 9% and 40% of average at individual sub-basins over August. Precipitation above The Dalles has been 27% of average over August. Over the 2017 water year, precipitation has ranged between 100% 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 1-17, 2017		Water Year 2017 October 1, 2016 to August 17, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.24	23	37.6	108
SNAKE RIVER ABOVE ICE HARBOR	0.15	36	24.9	117
Columbia Above The Dalles	0.16	27	28.4	110
Kootenai	0.39	36	38.4	114
Clark Fork	0.07	9	25.7	100
Flathead	0.14	16	38.4	114
Pend Oreille River Basin above Waneta Dam	0.09	11	33.5	109
Salmon River Basin	0.17	28	33.2	121
Upper Snake Tributaries	0.28	40	29.3	118
Clearwater	0.09	12	41.0	106
Willamette River above Portland	0.10	21	82.7	130

Grand Coulee Reservoir is at 1,283.2 feet (8-16-17) and has drafted 1.8 feet over the last week. Outflows at Grand Coulee have ranged between 87.8 Kcfs and 113.0 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,447.5 feet (8-16-17) and has drafted 0.6 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 3,552.8 feet (8-16-17) and has drafted 0.5 feet last week. Outflows at Hungry Horse have been 2.0 Kcfs over the last week.

Dworshak is currently at an elevation of 1,553.3 feet (8-16-17) and has drafted 6.7 feet over the last week. Dworshak outflows have been reduced to 8.1 Kcfs.

The Brownlee Reservoir was at an elevation of 2,058.3 feet on August 17, 2017, and refilled 0.2 feet over the last week. Outflows at Hells Canyon have ranged between 9.7 and 16.3 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd and ended on June 20th in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 5th, 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 21st at Lower Granite Dam, the flow objective this year is 55 Kcfs. Over the summer period, flows have averaged 54.5 Kcfs and 30.4 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 10th and ended June 30) and 135 Kcfs at Priest Rapids Dam (began April 10th). 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 1st at McNary Dam, the flow objective this year is 200 Kcfs. Over the summer period, flows have averaged 178.1 Kcfs and 143.5 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 9.8 Kcfs and an average spill volume of 5.25 Kcfs over the last week. Dworshak operations are currently to discharge water and 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 dropped below the 68°F standard on August 12th and have remained in the 66-67°F range ever since. Hells Canyon Complex flows have decreased slightly over the last week, with daily average outflows at Hells Canyon Dam ranging from 9.8 to 12.4 Kcfs over the last four days. Current outflow projections show flow in the Snake River and in the middle Columbia remaining at these levels or slightly decreasing through the end of August.

The 2017 summer spill for fish passage began on June 21st and will continue through August 31st. 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

Spill at Lower Granite Dam was maintained at the target 18 Kcfs over the past week, through August 16th. Operations at Dworshak were modified at this week's TMT conference call to decrease outflows to approximately 8 Kcfs, in an effort to conserve water in the reservoir and not drop below an elevation of 1535' before August 31st. However, there was concern that this modification may lead to decreases in flows

at Lower Granite that may preclude the ability to meet the 18 Kcfs spill level, due to powerhouse minimum requirements. Outflows at Dworshak Dam were decreased to 8 Kcfs at 1100 Wednesday (August 16th). During this same time, daily average outflows from Hells Canyon Dam had decreased to approximately 10 Kcfs. With the COE website being down, we are unable to tell at this time if the decreases in outflows from Dworshak and Hells Canyon have led to spill levels below 18 Kcfs at Lower Granite Dam in recent days. 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. 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 for most of this week, equating to daily average spill percentages of 32-39%. The spill operation at Lower Monumental Dam is 17 Kcfs. At current flows, spill to this level was not always possible this week. In general, spill at Lower Monumental was either 17 Kcfs or was 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 began on June 16th at the middle Columbia River projects. 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 15th according to the COE's Fish Operation Plan. The original period for the spring spill to end in the Middle Columbia River was June 30th. 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 15th 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, the 95 Kcfs/95 Kcfs and daytime 85 Kcfs spill levels were met this week but the night-time 121 Kcfs spill levels were not possible on August 13th and 14th, due to powerhouse minimum requirements. Instead, spill was limited to total flows minus powerhouse minimums (~105 Kcfs).

At spill levels of 3.6 to 6.5 Kcfs over the last week, tailrace TDG levels at Dworshak Dam ranged from 116.5% to 119.5%. TDG supersaturation at the Lower Granite Dam forebay monitor has ranged between 103.2% and 103.8% over the past week. Over the past week, the tailwater TDG supersaturation (average of 12 highest hourly levels in a calendar day) was below 120% at all the Snake and Mid-Columbia river projects. Similar to the federal hydrosystem, TDG supersaturation levels at the Upper Columbia River projects have been below 120% 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.

Although planned, GBT sampling at Bonneville and McNary dams did not occur this week due to low fish numbers. One gas bubble trauma sample was conducted at Little Goose Dam this week. In the sample from August 14th and 15th, 1% of examined fish were observed with signs of GBT. This fish exhibited signs of Rank 2 in its caudal fin. Two gas bubble trauma samples were conducted at Rock Island Dam this week. In the sample from August 15th 3% of examined fish were observed with signs of GBT. In the sample from August 17th, 2% of examined fish were observed with signs of GBT. All signs of GBT at RIS from this week were Rank 1 level in the fins.

The action criteria for interruption of the voluntary spill for fish passage program is defined as either 15 percent of examined fish showing signs of gas bubble trauma in their non-paired fins, or five percent of the fish examined show signs of gas bubble trauma in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles, corresponding to ranks greater than 2. The observed signs of GBT are presently below the action criteria that would be in place during the voluntary spill for fish passage program.

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 below the standard. At Lower Granite, the daily average temperature in the forebay on August 16th was 66.7°F, which is less than 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 9th. The daily

average temperature in the Ice Harbor forebay was 72.2°F on August 16th, which is about 2.0°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 12th. The daily average forebay temperature at McNary on August 16th was 70.1°F, which is nearly identical to the ten-year average for this date. Finally, the daily average forebay temperature at Bonneville Dam for August 16th was 71.3°F, which is less than a degree warmer than the current ten-year average for this date.

Smolt Monitoring

Sampling for the Smolt Monitoring Program (SMP) is underway at all bypass facilities except Lower Granite Dam (LGR). Sampling at Lower Granite Dam ended in early August this year in order to accommodate construction to the juvenile bypass facility and juvenile fish facility. This week's samples at the bypass facilities were dominated by subyearling Chinook. Passage of subyearling Chinook decreased at all bypass facilities, except Little Goose and Rock Island dams. 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 530 per day, which is a decrease over last week's daily average passage index of about 1,300. The only spring migrants that were encountered this week were coho (August 12th). Finally, no Pacific lamprey juveniles were encountered in this week's samples.

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 will be processed on Tuesday's and Friday's and will consist 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 12th. 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 2,000 per day, which is a decrease over last week's daily average passage index of about 4,600 per day. No spring migrants were encountered in this week's samples. Finally, Pacific lamprey macrophthalmia were encountered in three of this week's four samples, with a daily average collection of about 10 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. The transportation program at LGS this week switched from every-other-day barging to every-other-day trucking. This week's samples at LGS were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 620 per day, which is a slight increase over last week's daily average passage index of about 520 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 every day this week, with a daily average collection of about 7 fish per day. No Pacific 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 1st to April 16th, every-other-day from April 16th

until transportation began, at which time sampling switched to every day. The transportation program at LMN this week switched from every-other-day barging to every-other-day trucking. Under this operation, site personnel 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 20 fish per day, whereas that for last week was about 50 per day. No spring migrants were encountered in this week's samples at LMN. Finally, Pacific lamprey ammocoetes were encountered in only one of this week's samples (August 11th) while no macrophthalmia were encountered this week.

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 180 per day, which is very similar to last week's daily average passage index of about 170 per day. Passage of spring migrants remained low this week. Finally, one Pacific lamprey ammocoetes was encountered in the sample from August 13th while no macrophthalmia were encountered this week.

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 and no new releases are scheduled over the next two weeks.

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 6,099 is about 33.7% of the 2016 count of 18,078 and 47% of the 10-year average count of 12,974. The 2017 Bonneville Dam fall Chinook jack count of 754 is about 35% of the 2016 count of 2,158 and 32% of the 10-year average count of 2,359. The 2017 McNary fall Chinook adult count of 754 is about 17.5% of the 2016 count and 23.2% of the 10-year average count. The 2017 adult fall Chinook count of 99 at Ice Harbor Dam in the Snake River has 805 fewer fish than the 2016 count and has 515 fewer fish than the 10-year average count.

The 2017 Bonneville Dam adult steelhead count of 39,195 is about 43.4% of the 2016 count of 90,377 and 20.7% of the 10-year average count of 188,857. The 2017 Bonneville Dam adult unclipped steelhead count of 18,056 is about 56.7% of the 2016 count of 31,869 and 24.1% of the 10-year average count of 74,855. Daily adult steelhead counts at Lower Granite Dam ranged from 2 to 20 adults per day last week. This year's Lower Granite steelhead count of 7,769 has 2,046 fewer fish than the 2016 count of 9,815 and is 47.8% of the 10-year average count of 16,258. The 2017 Lower Granite Dam adult unclipped steelhead count of 3,361 has 1,749 fewer fish than the 2016 count of 5,110 and 3,263 fewer fish than the 10-year average count of 6,624. At Willamette Falls, the 2017 count for steelhead was 2,663 as of August 16th. This year's steelhead count is about 10% of the 2016 count of 26,793 and 12% of the 10-year average count of 22,149.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 2 and 8 last week. The 2017 adult sockeye count at Bonneville Dam of 87,628

is about 25.6% of the 2016 count and 27.8% of the 10-year average count. The 2017 adult sockeye count at McNary Dam of 57,949 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 226 has 580 fewer fish than the 2016 count of 806 and 834 fewer fish than the 10-year average count of 1,060.

As of August 16th at Bonneville Dam, the adult shad count was 3,100,510. This year's shad count is about 1.8 times greater than the 2016 count of 1,769,263 and 1.5 times greater than the 10-year average count of 2,045,192. A total of 78,890 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2017 lamprey count is about 1.7 times greater than the 2016 count of 46,582 and 3.6 times greater than the 10-year average count of 21,622.

Hatchery Releases Last Two Weeks

Hatchery Release Summary
From: 8/4/2017 to 08/18/17

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

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 8/19/2017 to 9/1/2017

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

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

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
Lower Granite Dam											
Little Goose Dam											
	08/07 & 08/08	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	08/14 & 08/15	Chinook + Steelhead	100	1	1	1.00%	1.00%	0	1	0	0
Lower Monumental Dam											
McNary Dam											
	08/06/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
Rock Island Dam											
	08/08/17	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	08/10/17	Chinook + Steelhead	100	6	6	6.00%	0.00%	6	0	0	0
	08/15/17	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	08/17/17	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0

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>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/4	---	---	---	0	---	---	---	0	109.0	109.1	109.3	24	109.0	109.6	111.5	24	110.6	110.7	111.1	24
8/5	---	---	---	0	---	---	---	0	108.5	108.6	108.7	24	108.9	109.7	110.4	24	109.8	110.1	110.5	24
8/6	---	---	---	0	---	---	---	0	108.0	108.1	108.4	24	108.5	109.2	110.6	24	108.9	109.2	109.5	24
8/7	---	---	---	0	---	---	---	0	107.9	108.1	108.1	24	108.4	109.2	109.8	24	109.1	109.4	109.7	24
8/8	---	---	---	0	---	---	---	0	107.8	107.9	108.3	24	107.7	108.4	109.1	24	109.4	109.6	109.7	24
8/9	---	---	---	0	---	---	---	0	107.6	107.8	108.0	24	107.2	107.9	109.7	24	109.6	109.9	110.4	24
8/10	---	---	---	0	---	---	---	0	107.7	108.0	108.6	24	107.1	107.8	109.1	24	108.4	108.9	109.5	24
8/11	---	---	---	0	---	---	---	0	107.9	108.2	108.5	24	107.1	107.6	108.1	24	108.1	108.7	109.3	24
8/12	---	---	---	0	---	---	---	0	108.0	108.1	108.3	24	107.5	108.1	109.0	24	108.0	108.4	108.7	24
8/13	---	---	---	0	---	---	---	0	107.8	107.9	108.2	24	107.9	108.6	109.3	24	107.5	107.8	108.0	24
8/14	---	---	---	0	---	---	---	0	107.1	107.4	107.6	24	106.9	107.6	108.3	24	106.7	107.1	107.3	24
8/15	---	---	---	0	---	---	---	0	106.9	107.2	107.6	24	106.7	107.2	108.3	24	107.0	107.5	107.8	24
8/16	---	---	---	0	---	---	---	0	107.0	107.1	107.3	23	106.5	106.9	107.8	23	107.5	108.2	108.6	23
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/4	109.9	110.1	110.2	24	110.1	110.4	111.1	24	112.0	112.5	112.8	24	111.8	112.0	112.1	24	113.3	115.0	115.6	24
8/5	109.3	109.7	110.0	24	109.4	109.9	110.1	24	111.1	111.5	111.7	24	111.5	111.7	111.8	24	113.6	114.8	115.2	21
8/6	108.5	108.9	110.0	24	109.0	109.9	110.4	24	111.1	111.6	111.9	24	111.2	111.6	111.9	24	111.1	112.0	112.6	23
8/7	108.4	108.7	109.2	24	109.2	109.9	110.4	24	111.2	111.5	112.0	24	110.4	110.7	111.1	24	112.2	113.7	114.4	21
8/8	108.8	109.0	109.1	24	109.2	110.0	110.8	24	110.9	111.4	112.0	24	110.7	111.3	111.8	23	112.7	113.8	114.5	21
8/9	109.0	109.4	109.5	24	108.9	109.9	110.7	24	110.7	111.0	111.5	24	111.2	111.5	112.1	24	113.2	114.5	114.9	21
8/10	107.8	108.3	108.6	24	109.8	110.6	111.2	24	111.2	112.0	112.4	24	110.9	111.2	111.7	24	112.7	113.4	114.3	20
8/11	107.6	108.1	108.5	24	109.0	109.7	110.3	24	111.3	111.6	111.9	24	110.8	111.0	111.4	24	112.9	114.2	114.7	23
8/12	107.4	107.8	108.3	24	108.2	108.9	109.3	24	110.6	111.0	111.2	24	111.3	111.4	111.4	24	112.7	113.9	118.6	22
8/13	107.0	107.5	108.1	24	107.3	107.6	108.2	24	109.3	109.9	110.7	24	110.3	110.6	110.9	24	111.3	112.2	113.6	22
8/14	106.0	106.6	106.9	24	106.3	106.8	107.1	24	108.4	108.7	108.9	24	108.7	109.0	109.6	24	111.2	112.4	113.5	20
8/15	106.5	106.9	107.3	24	106.1	107.1	107.6	24	108.6	109.3	109.7	24	107.6	108.0	108.5	23	110.9	112.0	112.6	21
8/16	106.7	107.2	107.5	23	106.4	107.1	107.9	23	108.7	109.0	109.3	23	107.7	108.0	108.4	23	110.9	111.8	112.4	21
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
8/4	111.4	111.8	112.5	24	113.7	114.1	114.2	24	113.3	114.1	114.5	24	112.5	112.9	113.0	24	111.5	112.0	112.4	24
8/5	111.2	111.8	112.3	23	112.8	113.3	114.0	19	113.5	114.6	115.7	24	112.7	113.0	113.2	24	111.0	111.3	111.6	24
8/6	110.6	111.2	112.0	24	112.6	113.0	113.3	21	114.1	115.1	116.0	24	112.7	112.8	113.0	24	111.2	111.5	111.8	24
8/7	109.9	110.4	110.8	23	111.8	112.1	112.5	19	113.3	114.4	115.6	24	112.2	112.4	112.6	24	111.4	111.6	112.0	24
8/8	110.0	111.0	111.5	23	113.0	114.2	115.5	20	113.0	114.2	114.9	24	112.4	112.8	113.0	24	111.3	111.5	111.7	24
8/9	111.0	111.5	112.0	21	115.3	115.8	116.8	20	113.6	114.7	116.2	24	112.9	113.1	113.5	24	111.7	112.0	112.2	24
8/10	110.6	111.3	111.7	23	114.5	114.9	115.4	17	112.6	114.1	115.6	24	112.8	113.0	113.3	24	111.9	112.2	112.4	24
8/11	110.9	111.5	112.0	24	115.4	116.1	117.0	22	113.2	114.6	115.9	24	113.3	113.6	113.8	24	111.8	112.2	112.7	24
8/12	110.8	111.4	112.4	22	114.8	115.6	116.5	22	112.0	112.8	113.8	24	114.0	115.3	122.2	24	111.8	112.5	114.3	24
8/13	109.5	109.9	110.4	23	113.6	114.0	115.0	20	108.3	109.2	109.7	24	110.7	111.0	111.8	24	109.9	110.7	113.7	24
8/14	108.7	109.2	109.6	21	112.5	113.9	115.1	20	107.2	109.3	110.0	24	110.1	110.5	111.6	24	107.0	107.6	108.2	24
8/15	108.1	108.5	109.4	22	113.3	113.8	115.0	21	109.1	109.9	110.7	24	110.8	111.1	112.2	24	107.8	108.1	108.4	19
8/16	107.8	108.4	108.7	22	112.8	113.2	113.7	20	107.9	108.4	109.2	24	110.0	110.2	110.9	24	108.0	108.2	108.6	24
8/17	---	---	---	0	---	---	---	0	106.2	107.3	107.8	24	109.2	109.6	111.1	24	106.9	107.3	107.6	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>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/4	---	---	---	0	---	---	---	0	119.3	119.5	120.0	24	115.9	117.0	117.8	24	102.5	104.1	105.8	24
8/5	---	---	---	0	---	---	---	0	119.1	119.3	119.9	24	115.5	116.4	117.3	24	101.2	101.9	104.4	19
8/6	---	---	---	0	---	---	---	0	119.0	119.3	119.7	24	115.5	116.5	117.3	24	101.1	102.4	103.5	24
8/7	---	---	---	0	---	---	---	0	119.2	119.5	119.7	24	115.5	116.6	117.4	24	100.3	101.1	102.4	24
8/8	---	---	---	0	---	---	---	0	119.2	119.5	119.8	24	115.5	116.7	117.6	24	100.0	101.0	102.5	23
8/9	---	---	---	0	---	---	---	0	119.1	119.4	119.6	24	115.3	116.2	117.0	24	99.2	99.9	101.1	24
8/10	---	---	---	0	---	---	---	0	119.1	119.4	119.7	24	115.2	116.2	117.0	24	99.3	100.9	102.3	24
8/11	---	---	---	0	---	---	---	0	119.2	119.5	119.8	24	115.4	116.4	117.3	24	100.3	101.5	103.0	24
8/12	---	---	---	0	---	---	---	0	118.1	118.4	118.7	24	113.9	114.6	115.5	24	99.9	101.0	102.5	23
8/13	---	---	---	0	---	---	---	0	117.9	118.0	118.3	24	113.2	113.8	114.4	24	100.2	101.2	102.3	24
8/14	---	---	---	0	---	---	---	0	117.1	117.6	118.1	24	113.0	113.9	114.8	24	101.4	102.8	104.3	24
8/15	---	---	---	0	---	---	---	0	116.4	116.8	117.3	24	111.4	112.6	114.4	24	101.7	103.1	105.0	22
8/16	---	---	---	0	---	---	---	0	115.0	115.7	116.2	23	110.7	111.9	113.4	23	101.8	103.4	105.3	22
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/4	108.3	110.5	112.3	24	104.8	105.1	105.5	24	112.8	113.1	113.3	24	109.3	109.6	110.7	24	109.6	109.8	110.0	24
8/5	107.4	109.4	111.2	24	104.0	104.2	104.9	24	112.5	112.8	113.0	24	109.4	109.7	110.2	24	109.5	109.7	109.9	24
8/6	107.7	110.1	112.0	24	103.4	103.5	103.6	24	112.4	112.7	112.9	24	109.1	109.4	109.5	24	109.3	109.7	110.0	24
8/7	107.4	109.4	110.7	24	103.6	103.9	104.2	24	112.5	112.9	113.1	24	108.9	109.4	109.8	24	109.8	110.7	112.3	24
8/8	107.5	109.6	111.5	23	103.3	103.5	103.7	24	112.4	112.6	112.9	24	108.6	108.9	109.2	24	109.3	109.7	110.0	24
8/9	107.2	109.1	110.6	24	102.6	102.7	102.9	24	111.6	112.3	112.5	24	108.3	108.4	108.5	24	109.8	110.5	112.5	24
8/10	107.2	109.1	110.6	24	102.5	102.6	102.8	24	112.1	112.4	112.6	24	108.5	108.9	109.1	24	111.0	112.6	115.5	24
8/11	107.5	109.6	111.2	24	102.9	103.2	103.6	24	112.4	112.7	113.1	24	108.8	109.1	109.6	24	109.9	110.3	110.7	24
8/12	106.3	107.5	108.7	24	103.6	103.8	104.0	24	112.3	112.5	112.8	24	109.0	109.3	109.8	24	109.7	110.0	110.2	24
8/13	105.8	107.3	108.8	24	103.4	103.5	103.8	24	112.1	112.4	112.7	24	108.5	108.8	109.6	24	109.0	109.3	109.7	24
8/14	106.8	109.0	110.8	24	103.2	103.3	103.4	24	112.5	113.2	114.6	24	106.8	107.1	108.1	22	109.0	109.3	109.6	22
8/15	106.1	108.1	110.0	23	103.3	103.5	103.6	24	112.3	112.5	112.7	24	106.2	106.4	106.5	24	108.7	109.0	109.3	24
8/16	105.8	108.1	109.8	23	102.4	102.7	102.9	23	112.1	112.3	112.7	23	106.2	106.4	106.6	23	108.6	108.9	109.1	23
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/4	107.5	107.7	107.8	24	115.3	115.7	116.0	24	114.6	114.8	115.1	24	112.3	112.9	113.5	24	---	---	---	0
8/5	107.4	107.8	108.0	24	115.8	116.0	116.3	24	113.7	114.0	114.4	24	111.7	112.0	112.3	24	---	---	---	0
8/6	107.4	107.7	107.9	24	115.5	115.8	116.3	24	113.1	113.3	113.6	24	111.2	111.9	112.4	24	---	---	---	0
8/7	107.3	107.6	107.7	24	115.7	116.0	116.5	24	112.5	112.9	113.5	24	111.4	111.7	112.0	24	---	---	---	0
8/8	107.1	107.2	107.3	24	115.6	115.9	116.2	24	111.8	112.0	112.3	24	111.5	112.2	113.0	24	---	---	---	0
8/9	107.5	107.7	107.8	24	116.0	116.2	116.7	24	111.7	112.0	112.3	24	111.2	111.6	112.2	24	---	---	---	0
8/10	107.6	107.7	108.0	24	115.6	115.9	116.2	24	112.2	112.5	112.7	24	111.2	111.8	112.4	24	---	---	---	0
8/11	108.0	108.2	108.6	24	114.6	115.2	115.9	24	112.5	112.7	113.1	24	110.0	110.9	112.1	24	---	---	---	0
8/12	107.6	107.8	107.9	24	115.4	115.6	115.8	24	112.5	112.7	113.3	24	109.4	111.2	112.6	24	---	---	---	0
8/13	106.6	106.9	107.4	24	115.2	115.8	116.3	24	111.7	111.8	112.3	24	110.8	111.6	112.4	24	---	---	---	0
8/14	106.5	106.6	106.8	24	114.5	115.1	115.3	24	110.0	110.5	111.3	24	110.5	111.2	112.3	24	---	---	---	0
8/15	106.3	106.5	106.7	24	114.6	115.0	115.5	24	109.4	109.6	109.7	24	110.9	111.8	112.4	24	---	---	---	0
8/16	105.3	105.6	105.8	23	115.4	115.9	117.8	23	108.6	108.9	109.3	23	111.6	112.2	112.8	23	---	---	---	0
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	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	
8/4	112.7	113.1	113.5	24	114.9	115.3	115.6	24	108.1	108.6	109.2	24	113.1	113.6	114.0	24	108.9	109.4	109.8	24
8/5	112.2	112.5	113.1	24	114.4	114.8	115.1	24	107.8	108.2	108.8	24	113.3	113.9	114.5	24	106.9	107.1	107.3	24
8/6	111.8	112.0	112.8	24	114.3	114.9	115.3	24	108.0	108.3	108.5	24	113.9	114.4	114.8	24	107.9	108.7	108.9	24
8/7	111.2	111.5	112.0	24	113.9	114.6	115.2	24	108.6	109.0	109.3	24	114.1	114.5	114.9	24	109.7	110.6	111.3	24
8/8	110.3	110.7	111.0	24	113.4	114.4	115.2	24	108.6	108.9	109.2	24	114.1	114.5	114.8	24	110.3	111.0	111.6	24
8/9	111.0	111.3	111.8	24	113.6	114.4	115.6	24	108.3	108.4	108.7	24	113.7	114.1	114.9	24	110.3	110.6	111.3	24
8/10	111.3	112.2	113.4	24	113.8	115.1	118.5	24	108.6	109.2	109.9	24	113.9	114.5	115.1	24	110.0	110.4	111.0	24
8/11	110.7	111.2	111.8	24	113.9	115.0	115.5	24	109.7	110.0	110.7	24	114.7	115.2	115.6	24	109.8	110.3	111.1	24
8/12	110.7	111.0	111.4	24	113.4	113.8	114.1	24	109.1	109.6	110.2	24	114.3	114.8	115.6	24	107.2	107.9	108.5	24
8/13	109.3	109.7	110.6	24	112.9	113.5	114.1	24	107.0	107.3	108.3	24	113.7	114.0	114.2	24	105.6	105.9	106.1	24
8/14	107.3	107.8	108.4	24	113.4	113.8	114.0	24	105.9	106.1	106.4	24	113.8	114.2	114.5	24	105.7	106.0	106.2	24
8/15	106.5	106.8	107.0	24	113.1	113.7	114.3	24	105.4	105.7	105.9	24	113.1	113.6	113.9	24	107.3	108.0	108.2	24
8/16	106.7	107.3	107.6	23	113.0	113.5	114.0	21	104.3	104.6	104.7	23	112.1	112.5	112.9	23	106.8	107.2	107.4	23
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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	
8/4	113.8	114.3	114.8	24	113.3	113.6	113.8	24	118.4	119.0	119.6	24	117.5	118.5	119.3	24	116.8	116.8	117.0	24
8/5	113.1	113.5	114.0	24	110.2	110.7	112.2	24	116.8	117.5	118.2	24	116.0	116.6	117.4	24	114.6	115.6	116.8	24
8/6	112.5	113.3	113.8	24	107.9	108.3	109.2	24	116.9	117.7	118.6	24	115.1	116.3	117.0	24	114.8	116.0	117.5	24
8/7	112.9	113.5	114.4	24	108.4	108.8	109.0	24	116.4	117.2	117.9	24	115.0	116.2	117.0	24	115.7	116.7	117.4	24
8/8	113.4	114.4	114.9	24	108.6	109.3	109.7	24	116.8	117.4	118.2	24	115.1	116.3	116.9	24	116.4	116.5	116.5	24
8/9	114.0	114.7	115.3	24	109.4	110.0	110.3	24	116.8	117.5	118.1	24	116.1	117.5	118.5	24	114.7	115.7	117.2	24
8/10	113.9	114.8	115.4	24	110.4	110.9	111.3	24	116.7	117.4	118.2	24	115.8	117.3	118.1	24	114.9	116.1	117.4	24
8/11	113.1	113.7	114.4	24	109.3	109.6	110.4	24	117.1	117.5	118.2	24	115.1	116.4	117.3	24	116.8	116.9	117.2	24
8/12	110.7	111.1	111.5	24	106.2	106.7	108.2	24	115.7	116.1	116.6	24	113.4	114.3	115.3	24	116.6	116.6	116.8	24
8/13	109.3	109.9	110.3	24	104.5	104.8	105.7	24	114.8	115.2	115.7	24	112.1	112.8	113.7	24	114.6	115.5	116.6	24
8/14	110.1	111.2	111.6	24	104.0	104.3	104.6	24	115.2	115.8	116.5	24	111.8	113.5	114.6	24	114.5	115.6	116.8	24
8/15	110.8	111.6	111.9	24	104.8	105.0	105.3	24	116.1	116.5	116.8	24	112.9	114.5	115.5	24	116.6	116.7	116.8	24
8/16	111.0	111.4	111.7	23	105.2	105.5	105.9	23	115.6	116.1	116.8	23	113.0	114.3	115.3	23	116.5	116.6	116.8	23
8/17	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 8/18/2017 12:42

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)	
08/04/2017	*	---	---	---	---	0	0	0	---	0	0	
08/05/2017		---	---	---	---	0	0	0	0	---	---	
08/06/2017		---	---	---	---	0	0	0	---	---	0	
08/07/2017	*	---	---	---	---	0	0	0	0	---	---	
08/08/2017	*	---	---	---	---	0	0	0	---	0	0	
08/09/2017		---	---	---	---	0	0	0	0	---	---	
08/10/2017		---	---	---	---	0	0	0	---	---	0	
08/11/2017	*	---	---	---	---	0	0	0	0	0	---	
08/12/2017		---	---	---	---	0	0	0	---	---	0	
08/13/2017		---	---	---	---	0	0	0	0	---	---	
08/14/2017		---	---	---	---	0	0	0	---	---	0	
08/15/2017	*	---	---	---	---	0	0	0	0	0	---	
08/16/2017		---	---	---	---	0	0	0	---	---	0	
08/17/2017		---	---	---	---	0	0	0	0	---	---	
08/18/2017	*	---	---	---	---	---	0	0	---	0	0	
Total:		0	0	0	0	0	0	0	0	0	0	
# Days:		0	0	0	0	14	15	15	7	5	8	
Average:		0	0	0	0	0	0	0	0	0	0	
YTD		33,704	22,233	21,106	8	3,998,337	2,400,545	2,885,789	50,596	1,583,272	1,720,241	1,947,910

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)	
08/04/2017	*	---	---	---	---	649	80	174	---	430	4,027	
08/05/2017		---	---	---	---	469	68	131	6,771	---	---	
08/06/2017		---	---	---	---	530	35	175	---	---	565	
08/07/2017	*	---	---	---	---	535	55	148	4,239	---	---	
08/08/2017	*	---	---	---	---	784	24	156	---	327	432	
08/09/2017		---	---	---	---	353	52	236	2,859	---	---	
08/10/2017		---	---	---	---	311	59	167	---	---	261	
08/11/2017	*	---	---	---	---	393	23	153	2,008	60	---	
08/12/2017		---	---	---	---	575	34	192	---	---	490	
08/13/2017		---	---	---	---	961	0	204	1,436	---	---	
08/14/2017		---	---	---	---	912	9	117	---	---	449	
08/15/2017	*	---	---	---	---	823	11	229	1,573	118	---	
08/16/2017		---	---	---	---	429	38	195	---	---	642	
08/17/2017		---	---	---	---	230	0	184	2,846	---	---	
08/18/2017	*	---	---	---	---	---	69	160	---	125	1,277	
Total:		0	0	0	0	7,954	557	2,621	21,732	1,060	8,143	
# Days:		0	0	0	0	14	15	15	7	5	8	
Average:		0	0	0	0	568	37	175	3,105	212	1,018	
YTD		0	11	40	0	1,020,549	1,063,704	654,821	73,497	2,469,528	1,067,313	4,040,719

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)	
08/04/2017	*	---	---	---	---	0	0	0	---	0	0	
08/05/2017		---	---	---	---	0	0	0	0	---	---	
08/06/2017		---	---	---	---	0	0	0	---	---	0	
08/07/2017	*	---	---	---	---	0	0	0	0	---	---	
08/08/2017	*	---	---	---	---	0	0	0	---	0	0	
08/09/2017		---	---	---	---	0	0	0	0	---	---	
08/10/2017		---	---	---	---	0	0	0	---	---	0	
08/11/2017	*	---	---	---	---	0	0	1	0	0	---	
08/12/2017		---	---	---	---	0	0	0	---	---	8	
08/13/2017		---	---	---	---	0	0	0	0	---	---	
08/14/2017		---	---	---	---	0	0	0	---	---	0	
08/15/2017	*	---	---	---	---	0	0	0	0	0	---	
08/16/2017		---	---	---	---	0	0	0	---	---	0	
08/17/2017		---	---	---	---	0	0	0	0	---	---	
08/18/2017	*	---	---	---	---	---	0	0	---	0	0	
Total:		0	0	0	0	0	0	1	0	0	8	
# Days:		0	0	0	0	14	15	15	7	5	8	
Average:		0	0	0	0	0	0	0	0	0	1	
YTD		0	0	2,232	0	128,502	86,636	69,601	35,300	86,630	96,620	356,050

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)	
08/04/2017	*	---	---	---	---	6	0	0	---	0	0	
08/05/2017		---	---	---	---	6	0	0	0	---	---	
08/06/2017		---	---	---	---	3	4	1	---	---	0	
08/07/2017	*	---	---	---	---	0	4	0	0	---	---	
08/08/2017	*	---	---	---	---	7	0	0	---	0	0	
08/09/2017		---	---	---	---	0	0	0	2	---	---	
08/10/2017		---	---	---	---	0	0	0	---	---	0	
08/11/2017	*	---	---	---	---	0	0	0	0	0	---	
08/12/2017		---	---	---	---	3	0	0	---	---	0	
08/13/2017		---	---	---	---	3	0	0	0	---	---	
08/14/2017		---	---	---	---	0	0	0	---	---	0	
08/15/2017	*	---	---	---	---	2	0	0	0	0	---	
08/16/2017		---	---	---	---	1	0	0	---	---	0	
08/17/2017		---	---	---	---	0	0	0	0	---	---	
08/18/2017	*	---	---	---	---	---	0	1	---	0	0	
Total:		0	0	0	0	31	8	2	2	0	0	
# Days:		0	0	0	0	14	15	15	7	5	8	
Average:		0	0	0	0	2	1	0	0	0	0	
YTD		7,117	15,916	7,614	1	4,065,200	1,853,163	2,517,515	32,132	442,841	1,317,075	264,513

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/04/2017 *	---	---	---	---	---	0	0	0	---	0	0
08/05/2017	---	---	---	---	---	0	0	0	0	---	---
08/06/2017	---	---	---	---	---	6	0	1	---	---	55
08/07/2017 *	---	---	---	---	---	0	0	0	42	---	---
08/08/2017 *	---	---	---	---	---	0	0	0	---	1	0
08/09/2017	---	---	---	---	---	3	0	0	0	---	---
08/10/2017	---	---	---	---	---	0	0	0	0	---	0
08/11/2017 *	---	---	---	---	---	0	0	1	0	0	---
08/12/2017	---	---	---	---	---	0	0	3	---	---	0
08/13/2017	---	---	---	---	---	0	0	0	0	---	---
08/14/2017	---	---	---	---	---	0	0	0	---	---	0
08/15/2017 *	---	---	---	---	---	2	0	0	0	0	---
08/16/2017	---	---	---	---	---	0	0	1	---	---	0
08/17/2017	---	---	---	---	---	0	0	1	0	---	---
08/18/2017 *	---	---	---	---	---	---	0	0	---	0	0
<hr/>											
Total:	0	0	0	0	0	11	0	7	42	1	55
# Days:	0	0	0	0	0	14	15	15	7	5	8
Average:	0	0	0	0	0	1	0	0	6	0	7
YTD	6	0	0	0	61,191	24,468	34,028	11,178	156,370	117,049	145,281

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/04/2017 *	---	---	---	---	---	6	2	0	---	0	0
08/05/2017	---	---	---	---	---	8	0	0	0	---	---
08/06/2017	---	---	---	---	---	8	0	0	---	---	0
08/07/2017 *	---	---	---	---	---	14	0	0	0	---	---
08/08/2017 *	---	---	---	---	---	4	0	0	---	0	0
08/09/2017	---	---	---	---	---	8	0	0	0	---	---
08/10/2017	---	---	---	---	---	8	0	0	---	---	0
08/11/2017 *	---	---	---	---	---	4	2	0	0	0	---
08/12/2017	---	---	---	---	---	8	0	0	---	---	0
08/13/2017	---	---	---	---	---	22	0	1	5	---	---
08/14/2017	---	---	---	---	---	4	0	0	---	---	0
08/15/2017 *	---	---	---	---	---	4	0	0	30	0	---
08/16/2017	---	---	---	---	---	2	0	0	---	---	0
08/17/2017	---	---	---	---	---	5	0	0	10	---	---
08/18/2017 *	---	---	---	---	---	---	0	0	---	0	0
<hr/>											
Total:	0	0	0	0	0	105	4	1	45	0	0
# Days:	0	0	0	0	0	14	15	15	7	5	8
Average:	0	0	0	0	0	8	0	0	6	0	0
YTD	0	3	4	0	287	7,228	2,984	59	32,850	62,483	42,204

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:

8/18/17 12:43 PM

08/04/17 TO 08/18/17

		Species			
Site	Data	CH0	ST	SO	Grand Total
LGS	Sum of NumberCollected	5,054	20	7	5,081
	Sum of NumberBarged	4,555	22	3	4,580
	Sum of NumberBypassed	0	0	0	0
	Sum of Numbertrucked	784	2	0	786
	Sum of SampleMorts	17	0	1	18
	Sum of FacilityMorts	31	0	3	34
	Sum of ResearchMorts	0	0	0	0
	Sum of TotalProjectMorts	48	0	4	52
LMN	Sum of NumberCollected	258	4		262
	Sum of NumberBarged	285	4		289
	Sum of NumberBypassed	0	0		0
	Sum of Numbertrucked	44	0		44
	Sum of SampleMorts	0	0		0
	Sum of FacilityMorts	2	0		2
	Sum of ResearchMorts	0	0		0
	Sum of TotalProjectMorts	2	0		2
Total Sum of NumberCollected		5,312	24	7	5,343
Total Sum of NumberBarged		4,840	26	3	4,869
Total Sum of NumberBypassed		0	0	0	0
Total Sum of Numbertrucked		828	2	0	830
Total Sum of SampleMorts		17	0	1	18
Total Sum of FacilityMorts		33	0	3	36
Total Sum of ResearchMorts		0	0	0	0
Total Sum of TotalProjectMorts		50	0	4	54

YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/18/17 12:43 PM

TO: 08/18/17

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	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
LGS	Sum of NumberCollected	616,855	1,337,946	43,198	13,725	1,065,064	3,076,788
	Sum of NumberBarged	595,712	495,706	39,956	10,029	313,270	1,454,673
	Sum of NumberBypassed	17,361	837,161	3,201	3,318	751,538	1,612,579
	Sum of NumberTrucked	784	0	0	0	2	786
	Sum of SampleMorts	138	29	1	11	10	189
	Sum of FacilityMorts	2,720	5,050	40	367	244	8,421
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,858	5,079	41	378	254	8,610
LMN	Sum of NumberCollected	330,139	1,459,190	33,440	17,200	1,293,664	3,133,633
	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	44	0	0	0	0	44
	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		1,575,387	5,159,834	150,863	66,514	4,688,242	11,640,840
Total Sum of NumberBarged		1,535,918	2,406,280	136,162	42,296	1,973,142	6,093,798
Total Sum of NumberBypassed		44,799	2,708,008	14,901	23,585	2,691,511	5,482,804
Total Sum of NumberTrucked		828	0	0	0	2	830
Total Sum of SampleMorts		438	156	8	27	94	723
Total Sum of FacilityMorts		8,208	8,748	152	696	824	18,628
Total Sum of ResearchMorts		12	26	0	0	22	60
Total Sum of TotalProjectMorts		8,658	8,930	160	723	940	19,411

Cumulative Adult Passage at Mainstem Dams Through: 08/17

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	08/16	83624	18110	137215	11145	150783	25708	88044	10648	119591	10834	97732	22097	6099	754	18078	2158	12974	2359
TDA	08/17	58308	12497	105504	9999	118766	22002	69246	9277	95764	8800	81626	17772	3075	467	10780	1231	8130	1663
JDA	08/17	46675	12475	93659	8262	103450	20515	60416	7363	90259	7715	73088	17197	1211	272	7251	741	4518	1087
MCN	08/17	44292	7020	87191	7374	93925	16835	56982	4616	83894	6501	69220	12937	754	97	4309	352	3255	581
IHR	08/17	28306	6949	67484	5029	68114	11248	9284	2087	13980	1538	18950	4865	99	12	904	121	614	75
LMN	08/17	28545	8270	66115	6266	68087	10905	8216	3388	12460	2344	19984	5812	83	22	727	91	377	66
LGS	08/17	26598	8335	62597	6365	63765	12007	9086	3754	12480	1919	19272	6335	39	10	301	20	176	19
LGR	08/17	27357	8256	62050	5480	62403	13092	8952	3627	12110	2113	17229	6832	0	0	0	0	0	0
PRD	08/16	7268	783	16843	1003	17901	1826	52981	1760	80288	5126	57783	3021	223	56	950	154	932	339
WAN	08/16	6612	484	17164	919	17602	2161	49392	1355	79255	4110	55377	2415	219	37	759	118	744	225
RIS	08/16	8080	564	18646	715	18006	2748	56188	1296	78920	3373	56590	5383	0	0	0	0	0	0
RRH	08/16	5864	406	9449	351	7849	1209	42362	970	57728	2672	44942	3667	0	0	0	0	0	0
WEL	08/16	6589	820	11789	833	8215	1601	29072	1002	42558	2329	33661	3277	0	0	0	0	0	0
WFA	08/16	34186	2442	30317	2161	34636	1490	0	0	0	0	0	0	45	7	7	1	12	3

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2017		2016		10-Yr Avg.		2017	2016	10-Yr Avg.	10-Yr Unclipped		Unclipped		10-Yr	2017	2016	10-Yr	
		Adult	Jack	Adult	Jack	Adult	Jack	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.
BON	08/16	8	0	89	27	284	77	87628	342416	315565	39195	90377	188857	18056	31869	74855	78890	46582	21622
TDA	08/17	0	0	15	13	33	9	63934	288251	269112	9092	28804	88086	4794	12987	39451	27401	9162	5777
JDA	08/17	1	0	3	6	7	6	65867	289812	260432	4714	16670	61153	3089	8444	26733	19630	7586	4416
MCN	08/17	0	0	-1	0	1	0	57949	261606	226306	5567	14130	47630	2584	6701	19307	1872	1167	975
IHR	08/17	0	0	0	0	0	0	392	898	922	2366	8755	26106	1217	3675	8008	1016	710	263
LMN	08/17	0	0	0	0	0	0	345	1016	1091	2817	8483	26364	1551	4227	9347	314	191	68
LGS	08/17	0	0	0	0	0	0	285	942	1024	2052	8454	14990	1042	4362	6460	426	175	33
LGR	08/17	1	0	1	0	0	0	226	806	1060	7769	9815	16258	3361	5110	6624	285	88	12
PRD	08/16	0	0	0	1	0	0	66647	310981	266760	820	2411	5747	0	0	0	18241	5001	2376
WAN	08/16	0	0	1	0	0	0	76064	322359	235770	707	2222	5821	0	0	0	15324	3129	1165
RIS	08/16	0	0	0	0	0	0	73107	310006	258864	729	1869	4199	451	839	2134	9110	1073	430
RRH	08/16	0	0	0	0	0	0	46635	235595	217935	451	1392	2971	221	570	1393	10175	889	372
WEL	08/16	0	0	0	0	0	0	42216	215545	207047	355	977	1535	216	415	742	37	1	0
WFA	08/16	0	0	0	0	6	16	0	0	0	2663	26793	22149	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.

