



Fish Passage Center

Weekly Report #17-19

July 14, 2017

This Week's Highlights

Water Supply

Precipitation throughout the Columbia Basin has varied between 0% and 26% of average at individual sub-basins over early July. Precipitation above The Dalles has been 5% of average over July. Over the 2017 water year, precipitation has ranged between 106% and 132% of average.

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

Location	Water Year 2017		Water Year 2017	
	July 1-12, 2017		October 1, 2016 to July 12, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.12	14	37.2	114
Snake River Above Ice Harbor	0.03	10	24.6	121
Columbia Above The Dalles	0.05	11	28.1	115
Kootenai	0.21	24	37.9	116
Clark Fork	0.15	26	25.5	106
Flathead	0.03	4	38.3	121
Pend Oreille River Basin above Waneta Dam	0.08	12	33.3	116
Salmon River Basin	0.03	7	32.8	126
Upper Snake Tributaries	0.11	22	28.5	123
Clearwater	0.01	3	40.8	111
Willamette River above Portland	0.00	0	82.6	132

Table 2 displays the July 12th ESP runoff volume forecasts for multiple reservoirs along with the June COE forecasts at Libby and Dworshak. The July 12th ESP forecast at The Dalles between April and August is 110,497 Kaf (126% of average).

Table 2. July ESP Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	July 13, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	126	110,497
Grand Coulee (Apr-Aug)	117	66,378
Libby Res. Inflow, MT (Apr-Aug)	122 129*	7,200 7,594*
Hungry Horse Res. Inflow, MT (Apr-Aug)	108	2,085
Lower Granite Res. Inflow (Apr- July)	144	28,666
Brownlee Res. Inflow (Apr-July)	182	9,971
Dworshak Res. Inflow (Apr-July)	120 116*	2,895 2,838*

* Denotes COE June Forecast

Grand Coulee Reservoir is at 1,289.2 feet (7-13-17) and has refilled 1.3 feet over the last week. Outflows at Grand Coulee have ranged between 89.6 Kcfs and 145.3 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,446.6 feet (7-13-17) and has refilled 2.6 feet over the past week. Daily average outflows at Libby Dam have been 9.8-9.9 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,555.7 feet (7-13-17) and has refilled 0.1 feet last week. Outflows at Hungry Horse have been 2.1-2.3 Kcfs over the last week.

Dworshak is currently at an elevation of 1591.0 feet (7-13-17) and has drafted 4.9 feet over the last week. Dworshak outflows over the last week have increased from 10.1 to 10.6 Kcfs.

The Brownlee Reservoir was at an elevation of 2,066.8 feet on July 13, 2017, and has drafted 5.0 feet last week. Outflows at Hells Canyon have ranged between 14.1 and 24.2 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 77.9 Kcfs.

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 through July 6, 2017, flows have averaged 254.1 Kcfs.

Spill

Flows in the Snake and Columbia rivers continued to decrease over the past week relative to the week prior. Dworshak Dam is currently in its summer draft operation, with daily average discharge ranging from 10.1 to 10.6 Kcfs and daily average spill ranging from 5.7 to 6.3 Kcfs over the last week. After a special TMT meeting on Monday, July 10th, Dworshak operations were modified to discharge cool water targeting tailrace gas levels no greater than 121% with the objective of reducing temperatures at the Lower Granite Dam tailrace. However, due to the limited powerhouse capacity at Dworshak, total outflows at Dworshak are limited to approximately 10.5-11.0 Kcfs (6.0-6.6 Kcfs spill) in order to not exceed the 121% TDG criteria. Hells Canyon Complex flows have decreased slightly this week, with outflows at Hells Canyon ranging from 16.7 to 20.7 Kcfs over the last four days. Current outflow projections show flow in the Snake River and in the middle Columbia continuing to

decrease as seasonal runoff declines.

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. Spill through the Removable Spillway Weir at Lower Granite Dam was terminated and redistributed to the other traditional spillbays. This operation was coordinated during the TMT conference call on July 12th, in an effort to reduce temperatures in the Lower Granite tailrace, which have been exceeding the 68°F standard since July 10th. Since this operation began on the afternoon of July 12th, temperatures in the Lower Granite tailrace have remained above 68°F. At Little Goose Dam the Biological Opinion spill of 30% of flow was met over the past week. Spill operations at Little Goose Dam are also expected to change next week, as spill through the Temporary Spillway Weir is expected to be terminated and redistributed to the other spillbays. This modification was also coordinated at the TMT conference call on July 12th, with the goal of reducing temperatures below Little Goose Dam. Spill at Lower Monumental Dam met the target 17 Kcfs over the past week. Finally, at Ice Harbor, spill generally met the 45 Kcfs/gas cap or 30%/30% spill levels on their prescribed dates.

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.

Spill that has occurred in the middle Columbia River over the past several weeks has decreased. At McNary Dam, spill averaged 50% of daily average flow over the past week. At John Day Dam, the prescribed spill of 30%/30% or 40%/40% 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 spill levels of 85 Kcfs/121 Kcfs or 95 Kcfs/95 Kcfs were met over the last week.

At spill levels of 5.7 to 6.3 Kcfs over the last week, tailrace TDG levels at Dworshak Dam ranged from 119.0% to 119.8%. TDG supersaturation at the Lower Granite Dam forebay monitor has ranged between 102% and 104% 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, as well as 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 took place over the past week at Lower Granite, Little Goose, Lower Monumental, Bonneville, McNary, and Rock Island Dams. At Little Goose, Lower Monumental, and McNary dams, no fish were observed with signs of GBT this past week.

Two gas bubble trauma samples were conducted at Bonneville Dam this week. In the first exam (July 8th), 1% of fish were observed with signs of GBT while in the second exam (July 11th), 0% of fish were observed with signs of GBT. All signs of GBT in the exam from July 8th were Rank 1 level in the fins. At Rock Island Dam, the GBT exams on July 11th and July 13th 8% and 14% of fish were observed with signs of GBT, respectively. All signs of GBT on these two days were Rank 1 or Rank 2 in the fins, which are considered minor signs. 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

Forebay temperatures are now being reported for Lower Granite, Ice Harbor, McNary and Bonneville dams. Currently, forebay water temperatures at all four of these projects are above the 68° F temperature

standard. In addition, the forebay water temperatures at these four projects are all above their respective ten-year averages. At Lower Granite, the forebay temperature first exceeded the 68° F standard on July 11th. The daily average temperature in the Lower Granite forebay on July 13th was 68.5° F, which is about three degrees warmer than the ten-year average. The forebay temperature at Ice Harbor Dam first exceeded the 68° F standard on July 9th. The daily average temperature in the Ice Harbor forebay was 69.4°F on July 13th, which is about 2.4°F warmer than the ten-year average for this site. At McNary and Bonneville dams, the forebay temperatures first exceeded the 68° F standard on July 12th. The July 13th daily average forebay temperatures at these two projects were 68.4° F and 68.2° F, respectively. These forebay temperatures are about 1-2 degrees warmer than their respective ten-year averages.

Smolt Monitoring

Sampling for the Smolt Monitoring Program (SMP) is underway at all bypass facilities. This week's samples at the bypass facilities were dominated by subyearling Chinook. Passage of spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) remained low at all bypass facilities this week. Passage of subyearling Chinook increased at Bonneville and Lower Granite dams but decreased at all other bypass facilities. The Imnaha River Trap was the only trap site that sampled over the last week. However, sampling at this trap ended after the July 10th sample.

This week's samples at Bonneville Dam (BON) were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook at BON was nearly 105,000 per day, which is an increase over last week's daily average passage index of about 62,500. This increase in subyearling Chinook passage is likely due to large hatchery releases of subyearling fall Chinook in the Little White Salmon River over the past two weeks. No spring migrants were collected in this week's samples at BON. In addition, Pacific lamprey macrophthalmia were only encountered in one of this week's samples (July 13th) and no ammocoetes were encountered this week.

Similar to last year, sampling at John Day Dam (JDA) occurs every-other-day this year. This week's samples at JDA were again dominated by subyearling Chinook. This week's daily average passage index for subyearling

Chinook was about 52,200, which is a decrease from last week's daily average passage index of about 69,000 per day. No spring migrants were collected in this week's samples at JDA. Both Pacific lamprey ammocoetes and macrophthalmia were encountered in this week's samples. Pacific ammocoetes were encountered in one sample (July 13th) while macrophthalmia were encountered in all four of this week's samples. This week's daily average collection for Pacific macrophthalmia was 150 per day, which is a decrease from last week's daily average collection of about 300 per day.

Sampling at McNary Dam (MCN) is also every-other-day. This week's samples at MCN were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 84,400 per day, which is a large decrease from last week's daily average passage index of about 141,500 per day. No spring migrants were collected in this week's samples. Finally, only Pacific lamprey macrophthalmia were encountered in this week's samples. Macrophthalmia were encountered in two of this week's three samples. This week's daily average collection for Pacific macrophthalmia was about 130 fish per day, which is lower than last week's daily average collection of about 500 macrophthalmia per day.

This week's samples at Lower Granite Dam (LGR) were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 8,550 per day, which is a slight increase over last week's daily average passage index of about 8,000 per day. Although this week's daily average passage index was higher than last week's, it appears that there is a decreasing trend in subyearling Chinook passage over the last few days. Passage of spring migrants was extremely low this week. In fact, the only spring migrant species that were encountered in this week's samples were sockeye and steelhead. However, the sockeye that have been collected at LGR over the past couple of weeks are likely kokanee from Dworshak reservoir, as spill at Dworshak Dam has increased over the last couple of weeks. Finally, Pacific lamprey ammocoetes were encountered in five of this week's samples while macrophthalmia were not encountered this week. This week's total sample for Pacific lamprey ammocoetes at LGR was 16 fish.

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 6,900 per day, which is a decrease from last week's daily average passage index of about 8,500 per day. Passage of spring migrants remained low this week. Finally, Pacific lamprey ammocoetes were encountered every day this week, with a daily average collection of about 60 fish. Pacific lamprey macrophthalmia were encountered in only one of this week's samples (July 10th).

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. This week's samples at LMN were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 5,900 per day, which is a decrease from last week's daily average passage index of about 8,300. Passage of spring migrants remained low this week. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples 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 nearly 550 per day, which is a decrease from last week's daily average passage index of about 825 per day. Passage of spring migrants remained low this week. Finally, Pacific lamprey macrophthalmia were collected in three of this week's samples, but in very low numbers. No Pacific lamprey ammocoetes were collected at RIS this week.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at the Imnaha River Trap is year round. The FPC currently has data from IMN through July 10th. However, due to high flows in the Imnaha River and/or equipment malfunctions/maintenance over the last several weeks, sampling at IMN has been intermittent. The most recent days where sampling has been possible were July 6th, 7th, and 10th and the number of hours that were sampled over these three days was highly variable. Yearling Chinook were collected in all three of these three samples while steelhead smolts were only collected in two (July 6th and 7th). However,

sample counts for these two species were extremely low. The sample from July 10th is the last sample from this trap for the 2017 season.

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). On July 12th, approximately 2.0 million subyearling fall Chinook smolts were released from Willard NFH into the Little White Salmon River. No other new releases were scheduled for this zone this week and no new releases are scheduled for this zone 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 scheduled for this zone this week. Approximately 1.0 million subyearling fall Chinook smolts are scheduled to be released into Young's Bay, beginning on or around July 28th. This is the only new release that is scheduled to begin in this zone over the next two weeks.

Adult Passage

Daily passage numbers at Bonneville Dam ranged between 727 and 1,661 adult summer Chinook in the last week. The 2017 summer Chinook count of 77,735 is about 76.7% of the 2016 count and 92.1% of the 10-year average. The 2017 summer Chinook jack count of 9,303 has 583 more fish than the 2016 count and about 48.9% of the 10-year average count. At Willamette Falls, 32,051 adult spring Chinook have been counted so far this year. In 2016, 28,397 adult spring Chinook were counted at Willamette Falls. This year's count is about 1.13 times greater than the 2016, while being 96.1% of the 10-year average count of 33,339. As of July 13th, a total of 49,057 adult summer Chinook have been counted at McNary Dam and 7,196 have been counted at Lower Granite Dam. The 2017 McNary Dam adult summer Chinook count is about 73.6% of the 2016 count and 88.9% of the 10-year average count. The 2017 Lower Granite Dam adult summer Chinook count has 1,379 fewer fish than the 2016 count and 7,270 fewer fish than the 10-year average count.

The 2017 Bonneville Dam adult steelhead count of 7,830 is about 28.2% of the 2016 count of 27,789 and 22.3% of the 10-year average count of 35,143. The 2017 Bonneville Dam adult wild steelhead count of 3,255 is about 28% of the 2016 count of 11,616 and 21.1% of the 10-year average count of 15,437. Daily adult steelhead counts at Lower Granite Dam ranged from 1 to 9 adults per day last week. This year's Lower Granite steelhead count of 7,365 is about 1.2 times greater than the 2016 count of 6,193, while being 73.5% of the 10-year average count of 10,013. The 2017 Lower Granite Dam adult wild steelhead count of 3,084 has 505 fewer fish than the 2016 count of 3,589 and 830 fewer fish than the 10-year average count of 3,914. At Willamette Falls, the 2017 count for steelhead was 2,452 as of July 11th. This year's steelhead count is about 10% of the 2016 count of 24,600 and 11.7% of the 10-year average count of 20,879.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 571 and 1,713 last week. The 2017 adult sockeye count at Bonneville Dam of 84,395 is about 25.4% of the 2016 count and 27.8% of the 10-year average count. The 2017 adult sockeye count at McNary Dam of 54,574 is about 21.7% of the 2016 count and 26.3% of the 10-year average count. The Lower Granite Dam 2017 adult sockeye count of 146 has 453 fewer fish than the 2016 count of 599 and

428 fewer fish than the 10-year average count.

As of July 13th at Bonneville Dam, the adult shad count was 3,011,599. This year's shad count is about 1.7 times greater than the 2016 count of 1,737,358 and 1.5 times greater than the 10-year average count of 2,028,088.

A total of 55,850 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2017 lamprey count is about 2.6 times greater than the 2016 count of 21,377 and 5.1 times greater than the 10-year average count of 10,856.

Hatchery Releases Last Two Weeks

Hatchery Release Summary										
From:	7/1/2017		to		07/14/17					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2017	4,100,000	07-05-17	07-05-17	Little White Salmon Hatchery	Little White Salmon River	MCOL
U.S. Fish and Wildlife Service	Willard Hatchery	CH0	FA	2017	2,000,000	07-12-17	07-12-17	Willard Hatchery	Little White Salmon River	MCOL
U.S. Fish and Wildlife Service Total					6,100,000					
Washington Dept. of Fish and Wildlife	North Toutle Hatchery	CH0	FA	2017	1,400,000	06-01-17	07-01-17	Green River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2017	6,900,000	06-14-17	07-01-17	Priest Rapids Hatchery	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife Total					8,300,000					
Grand Total					14,400,000					

Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From:	7/15/2017		to		7/28/2017					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH0	FA	2017	1,000,000	07-28-17	07-28-17	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife Total					1,000,000					
Grand Total					1,000,000					

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
06/30/2017	136.4	0.1	139.5	0.0	143.2	9.8	144.0	15.3	152.9	32.5	162.2	31.7	158.9	28.7
07/01/2017	134.6	0.1	130.7	0.0	136.0	14.9	134.1	12.1	143.7	27.8	150.9	26.5	144.1	27.7
07/02/2017	137.6	0.1	136.9	0.0	145.8	18.6	147.2	18.2	155.0	29.3	164.5	31.7	158.3	49.1
07/03/2017	133.1	0.1	137.9	0.0	147.8	18.0	154.3	22.6	162.1	29.9	171.6	33.7	166.1	52.7
07/04/2017	126.1	0.1	123.1	0.0	130.3	10.4	137.0	13.4	146.1	25.1	168.4	40.8	167.2	36.1
07/05/2017	114.6	0.1	111.7	0.0	132.8	10.0	135.2	14.3	145.6	26.5	151.6	19.8	145.3	27.9
07/06/2017	121.0	0.1	116.2	0.0	137.5	9.3	133.4	18.4	140.8	28.2	145.3	20.0	139.1	27.5
07/07/2017	102.2	0.1	111.9	0.0	121.1	10.0	123.3	17.2	133.1	26.3	146.8	19.8	144.7	25.6
07/08/2017	108.3	0.1	104.5	0.0	119.2	8.9	117.6	12.1	124.8	24.7	141.5	18.7	135.3	25.4
07/09/2017	89.6	0.1	91.0	0.0	82.4	9.4	86.8	12.1	93.8	22.7	136.0	18.1	134.0	25.3
07/10/2017	141.8	0.1	132.9	0.0	133.1	15.3	123.5	15.1	126.2	30.9	107.3	17.2	97.7	24.9
07/11/2017	145.3	0.1	144.5	12.0	154.5	16.0	153.9	18.9	160.8	30.4	151.6	34.4	139.3	34.1
07/12/2017	138.7	0.1	140.9	0.0	152.1	10.0	153.3	18.2	158.4	27.7	167.1	38.3	162.2	34.9
07/13/2017	110.0	0.1	118.2	0.0	141.4	10.0	142.9	12.4	147.5	29.7	160.0	34.9	158.7	39.2

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
06/30/2017	5.3	1.0	---	26.7	78.1	18.3	74.8	22.6	73.3	16.9	73.7	25.7
07/01/2017	6.9	2.7	---	25.0	74.8	18.2	74.0	21.9	75.3	16.6	77.9	46.1
07/02/2017	9.0	4.7	---	23.6	71.2	18.3	69.1	20.7	69.2	17.1	71.9	53.5
07/03/2017	9.0	4.7	---	24.1	69.8	18.4	69.2	20.5	68.7	16.6	70.4	30.1
07/04/2017	8.9	4.6	---	21.6	65.8	18.4	63.4	19.0	62.7	17.1	63.4	19.0
07/05/2017	8.8	4.6	---	21.2	65.8	18.4	64.9	19.5	65.2	16.9	68.6	44.1
07/06/2017	10.1	5.8	---	22.0	62.3	18.6	59.7	18.0	59.3	17.1	60.9	46.4
07/07/2017	10.1	5.8	---	21.8	63.3	18.7	60.2	18.0	60.5	16.6	61.3	24.9
07/08/2017	10.1	5.8	---	19.3	59.4	18.7	57.1	17.2	56.7	17.0	58.5	17.5
07/09/2017	10.0	5.7	---	18.2	57.4	18.6	55.4	16.7	56.7	16.8	58.4	41.0
07/10/2017	10.1	5.8	---	20.7	55.7	18.6	53.5	15.9	52.4	17.1	55.4	44.5
07/11/2017	10.5	6.2	---	18.1	55.7	18.5	54.0	16.3	53.8	16.6	57.1	23.7
07/12/2017	10.6	6.3	---	17.8	51.1	18.4	46.8	13.9	46.0	19.0	46.7	14.0
07/13/2017	10.6	6.3	---	16.7	51.0	18.1	47.9	14.2	48.8	16.5	50.2	34.8

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
06/30/2017	262.9	131.7	256.7	81.5	244.4	97.5	269.5	90.8	68.1	98.2
07/01/2017	270.4	135.7	237.2	94.6	220.8	88.3	235.5	95.6	33.3	94.2
07/02/2017	245.0	123.1	234.1	93.2	219.1	88.0	238.9	100.0	32.7	93.8
07/03/2017	237.2	119.1	225.0	89.7	204.2	81.8	222.2	95.5	20.9	93.4
07/04/2017	251.0	126.0	222.3	84.1	204.3	81.9	218.6	89.6	---	---
07/05/2017	230.3	115.6	220.0	65.9	205.5	82.3	231.4	94.9	28.9	95.3
07/06/2017	222.8	111.9	205.4	66.1	194.4	78.1	200.6	100.0	1.6	86.6
07/07/2017	231.9	116.2	213.2	85.2	203.5	81.1	219.7	95.0	20.3	92.1
07/08/2017	224.0	112.1	199.0	76.0	183.8	74.3	203.6	89.9	16.1	85.3
07/09/2017	202.0	101.1	193.1	57.7	185.7	73.8	200.2	95.2	0.9	91.7
07/10/2017	207.8	104.2	191.0	60.5	174.9	70.3	193.2	100.4	0.8	79.6
07/11/2017	199.1	99.8	189.4	75.6	175.2	69.8	186.8	95.2	4.7	74.5
07/12/2017	206.1	103.3	181.6	69.9	162.8	65.4	181.9	90.3	10.1	69.1
07/13/2017	216.2	108.3	187.9	56.3	173.7	69.5	187.1	95.3	0.9	78.5

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											
	07/06/17	Chinook + Steelhead	101	1	1	0.99%	0.00%	1	0	0	0
	07/13/17	Chinook + Steelhead	50*	0	0			0	0	0	0
Little Goose Dam											
	07/03/17	Chinook + Steelhead	77*	0	0			0	0	0	0
	07/10/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	07/05/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/12/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/03/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/05/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/09/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/01/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/04/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/08/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/11/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	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 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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	---	---	---	0	---	---	---	0	117.0	117.4	117.5	24	115.2	115.6	115.7	24	115.7	116.1	116.3	24
7/1	---	---	---	0	---	---	---	0	117.5	117.6	117.9	24	115.5	115.8	116.6	24	116.4	116.8	117.4	24
7/2	---	---	---	0	---	---	---	0	117.1	117.3	117.6	24	115.2	115.5	115.7	24	116.0	116.3	116.7	24
7/3	---	---	---	0	---	---	---	0	116.8	117.0	117.1	24	114.8	115.1	115.3	24	115.4	115.5	115.7	24
7/4	---	---	---	0	---	---	---	0	116.3	116.7	116.9	24	114.4	114.8	115.3	24	115.3	115.6	115.9	24
7/5	---	---	---	0	---	---	---	0	115.9	116.4	116.6	24	114.3	115.0	115.8	24	115.2	116.0	116.3	24
7/6	---	---	---	0	---	---	---	0	115.9	116.1	116.3	24	114.3	115.0	116.6	24	115.1	115.5	115.9	24
7/7	---	---	---	0	---	---	---	0	115.8	116.0	116.2	24	114.4	115.1	115.9	24	115.0	115.6	116.1	24
7/8	---	---	---	0	---	---	---	0	115.7	116.0	116.2	24	114.3	114.8	115.1	24	115.2	115.8	116.3	24
7/9	---	---	---	0	---	---	---	0	115.7	115.9	116.2	24	114.6	115.6	116.8	24	115.2	115.7	116.0	24
7/10	---	---	---	0	---	---	---	0	115.8	116.0	116.2	24	114.6	115.0	115.6	24	115.9	116.2	116.5	24
7/11	---	---	---	0	---	---	---	0	114.9	115.2	115.7	24	113.7	114.1	114.6	24	115.0	115.4	116.0	24
7/12	---	---	---	0	---	---	---	0	114.8	114.9	115.1	24	113.4	113.9	114.6	24	114.0	114.2	114.7	24
7/13	---	---	---	0	---	---	---	0	114.4	114.6	115.1	23	113.4	114.0	114.3	23	113.7	114.0	114.1	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>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	114.4	114.8	115.1	24	114.8	115.3	115.8	24	117.0	117.4	117.6	24	114.5	115.2	115.4	24	117.6	117.9	118.3	21
7/1	115.0	115.5	115.9	24	115.2	115.7	116.2	24	117.4	117.7	117.7	24	115.2	115.8	116.1	23	117.4	118.2	118.7	22
7/2	114.7	115.1	115.3	24	115.0	115.4	116.0	24	117.4	117.6	117.7	24	115.3	115.8	116.0	24	118.2	118.8	120.6	23
7/3	114.3	114.6	114.9	24	114.4	114.8	115.1	23	117.1	117.3	117.4	23	115.0	115.3	115.6	24	118.2	118.9	121.6	24
7/4	114.0	114.5	114.8	24	114.6	115.1	115.4	24	117.1	117.5	117.6	24	115.5	116.0	116.4	24	117.6	118.6	121.5	21
7/5	114.0	114.5	115.0	24	114.3	115.0	115.4	24	117.2	117.5	117.6	24	115.6	115.8	116.4	24	118.0	118.3	118.5	22
7/6	113.8	114.2	114.5	24	114.2	115.1	115.6	24	117.0	117.3	117.4	24	115.0	115.3	115.8	24	116.5	118.1	119.2	22
7/7	113.9	114.1	115.3	16	114.6	115.1	115.4	24	117.1	117.4	117.6	24	115.0	115.3	115.7	24	117.4	118.0	120.1	19
7/8	---	---	---	0	114.4	115.1	115.7	24	117.2	117.5	117.7	24	115.2	115.4	115.6	23	116.7	117.7	118.1	21
7/9	---	---	---	0	115.0	115.6	116.2	24	117.4	117.7	117.7	24	115.4	115.7	116.1	23	115.0	115.7	116.5	23
7/10	---	---	---	0	114.4	114.8	115.0	24	117.6	117.8	117.9	24	114.6	114.8	114.9	23	115.8	116.6	117.4	21
7/11	111.8	111.8	113.3	9	114.0	114.3	114.4	24	117.2	117.4	117.6	24	113.5	113.7	113.9	24	117.0	117.3	120.5	22
7/12	112.9	113.2	113.3	24	113.8	114.1	114.5	24	117.3	117.6	117.7	24	115.6	116.4	116.6	24	117.7	118.6	121.6	22
7/13	112.7	113.1	113.3	23	112.8	113.5	113.7	23	117.2	117.3	117.4	23	114.7	114.9	115.6	23	116.3	116.7	117.3	19

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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	114.1	114.6	115.1	23	118.6	119.9	120.5	20	117.2	119.3	121.2	24	114.4	115.0	115.2	24	112.6	113.0	114.7	24
7/1	114.0	114.4	114.8	23	117.1	118.2	120.2	23	116.2	116.9	117.7	24	115.2	115.6	116.1	24	112.9	113.4	114.0	24
7/2	114.4	115.0	115.4	24	117.9	118.6	119.0	22	115.5	116.6	118.3	24	115.2	116.2	119.5	24	113.0	113.7	114.7	24
7/3	114.1	114.7	115.3	24	117.7	118.3	118.8	24	112.5	113.1	113.6	24	113.4	113.7	115.6	24	111.3	112.0	113.2	24
7/4	114.7	115.3	115.8	23	117.6	118.3	119.0	19	115.0	116.9	118.5	24	115.8	117.4	120.4	24	112.6	115.8	118.1	24
7/5	114.7	115.4	116.0	23	118.1	118.7	119.1	20	116.3	117.7	119.2	24	114.7	115.0	115.5	24	112.2	112.8	113.1	24
7/6	114.3	115.1	115.9	23	117.9	118.6	119.1	21	116.2	117.7	119.2	24	114.7	115.2	115.5	24	111.7	112.5	113.1	24
7/7	114.7	115.3	116.4	23	118.2	118.6	119.4	19	116.3	117.4	118.6	24	115.0	115.4	115.8	24	112.9	113.5	114.2	24
7/8	114.1	115.0	115.8	23	117.5	118.1	118.7	21	115.6	117.3	119.0	24	113.8	114.4	114.8	24	111.3	111.7	112.5	24
7/9	113.6	114.1	114.5	24	117.0	117.3	118.0	23	113.3	113.9	115.0	24	113.6	113.8	114.4	24	110.9	111.4	112.8	24
7/10	112.8	113.4	113.9	22	116.3	117.0	117.5	21	110.6	111.0	111.2	24	111.5	111.8	112.7	24	108.9	109.4	110.1	24
7/11	112.9	114.5	115.5	23	116.7	117.5	118.0	21	110.2	111.3	112.5	24	112.1	113.2	115.5	24	107.5	109.0	112.3	24
7/12	113.9	115.0	116.7	22	117.2	118.1	119.5	21	111.6	113.0	114.1	24	112.9	113.4	114.8	24	110.1	111.4	112.0	24
7/13	114.2	114.9	116.0	22	117.3	117.7	119.1	17	111.4	111.7	112.1	24	113.1	113.5	114.1	24	110.6	111.4	112.1	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>Clrwtr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	---	---	---	0	---	---	---	0	104.1	104.7	105.2	24	103.5	104.8	105.7	24	104.7	105.7	106.4	24
7/1	---	---	---	0	---	---	---	0	105.2	105.7	106.3	22	103.7	104.7	105.4	24	104.3	104.9	105.3	24
7/2	---	---	---	0	---	---	---	0	114.0	114.7	115.0	24	107.9	109.4	110.2	24	104.1	104.9	105.7	24
7/3	---	---	---	0	---	---	---	0	114.8	115.5	116.6	24	108.8	110.0	110.6	24	103.9	104.6	105.4	24
7/4	---	---	---	0	---	---	---	0	116.9	117.3	117.8	24	111.0	112.1	113.1	24	103.5	104.4	105.5	24
7/5	---	---	---	0	---	---	---	0	116.9	117.4	117.8	24	111.3	112.6	113.5	24	103.7	104.6	105.6	24
7/6	---	---	---	0	---	---	---	0	118.4	118.9	119.3	24	113.1	114.4	115.4	24	103.6	104.6	105.5	24
7/7	---	---	---	0	---	---	---	0	118.6	119.0	119.4	24	113.6	114.8	115.6	24	103.4	104.3	105.3	24
7/8	---	---	---	0	---	---	---	0	118.6	119.0	119.4	24	114.0	115.3	116.1	24	103.3	104.4	105.4	24
7/9	---	---	---	0	---	---	---	0	118.7	119.2	119.7	24	114.2	115.5	116.5	24	103.2	104.3	105.7	24
7/10	---	---	---	0	---	---	---	0	118.7	119.1	119.6	24	114.1	115.3	116.3	24	103.1	104.3	105.7	24
7/11	---	---	---	0	---	---	---	0	119.1	119.3	119.5	24	114.5	115.4	116.1	24	102.9	103.9	105.5	24
7/12	---	---	---	0	---	---	---	0	119.2	119.3	119.9	22	114.8	115.8	116.5	24	103.3	104.9	107.1	24
7/13	---	---	---	0	---	---	---	0	119.4	119.8	120.1	23	115.3	116.5	117.4	23	103.4	104.9	107.5	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	103.7	106.2	107.8	24	104.2	104.5	104.7	24	108.7	108.9	109.8	24	108.0	108.5	108.9	24	111.2	111.7	112.0	24
7/1	103.6	105.7	107.3	24	104.6	104.8	105.1	24	108.8	109.1	109.7	24	108.4	108.7	108.9	24	110.9	111.1	111.3	24
7/2	104.5	107.4	109.0	24	104.9	105.2	105.3	24	109.0	109.4	110.0	24	108.0	108.2	108.6	24	110.7	111.1	111.5	24
7/3	105.2	107.5	109.0	24	104.4	104.7	105.3	24	108.9	109.2	109.9	24	108.1	108.5	108.9	24	110.5	110.8	111.2	24
7/4	106.0	108.7	110.1	24	104.1	104.4	104.7	24	109.5	110.0	111.6	24	108.1	108.5	108.8	24	111.0	111.7	112.0	24
7/5	106.7	109.1	110.7	24	104.9	105.4	106.4	24	109.5	109.9	110.9	24	108.1	108.8	109.3	24	110.9	111.2	111.5	24
7/6	107.1	109.8	111.4	24	103.9	104.2	104.9	24	110.7	112.0	112.8	24	107.9	108.3	108.7	24	110.7	111.1	111.7	24
7/7	107.8	110.2	111.9	24	104.0	104.1	104.3	24	111.9	112.3	112.7	24	108.5	108.9	109.5	24	110.9	111.2	111.4	24
7/8	107.9	110.5	112.2	24	104.2	104.4	105.0	24	112.2	112.7	113.5	24	107.3	107.9	108.4	24	111.2	111.7	112.1	24
7/9	108.0	110.5	112.3	24	104.4	104.8	105.0	24	112.3	112.8	113.3	24	108.1	108.5	108.9	24	111.1	111.5	111.7	24
7/10	107.7	110.1	111.9	24	103.8	104.2	104.6	24	112.2	112.7	113.1	24	108.6	108.9	109.5	24	111.7	112.0	112.4	24
7/11	107.8	110.5	112.3	24	103.6	103.8	104.1	24	111.5	112.0	114.3	24	108.3	108.7	109.1	24	110.9	111.2	111.6	24
7/12	108.1	110.8	112.5	24	102.9	103.2	103.3	24	111.6	112.6	114.3	24	106.7	107.1	107.5	24	111.1	111.6	112.1	24
7/13	108.3	110.9	112.6	23	102.2	102.3	102.4	23	110.1	110.3	110.5	23	106.4	106.8	107.2	23	110.8	111.2	111.4	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>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/30	112.3	112.6	113.4	24	116.8	117.3	117.8	24	113.2	113.5	113.8	24	115.2	115.9	116.3	24	---	---	---	0
7/1	113.4	113.7	113.9	24	117.0	117.5	117.6	24	114.1	114.4	114.6	24	115.7	116.0	116.3	24	---	---	---	0
7/2	112.0	112.2	112.4	24	115.7	116.1	116.4	24	114.6	114.7	114.8	24	115.3	115.5	115.9	24	---	---	---	0
7/3	111.3	111.5	111.8	24	114.4	115.4	115.9	24	114.3	114.4	114.5	24	114.7	115.3	115.6	24	---	---	---	0
7/4	111.1	111.2	111.4	24	115.0	115.6	116.2	24	114.2	114.4	114.6	24	114.5	115.3	115.9	24	---	---	---	0
7/5	110.8	110.9	111.1	24	115.6	116.1	116.7	24	114.1	114.2	114.4	24	114.9	115.6	115.8	24	---	---	---	0
7/6	110.9	111.2	111.4	24	115.4	115.8	116.2	24	113.4	113.6	113.7	24	114.7	115.3	115.5	24	---	---	---	0
7/7	111.1	111.3	111.6	24	115.4	116.0	116.7	24	113.9	114.0	114.1	24	113.8	115.1	116.4	24	---	---	---	0
7/8	110.8	111.1	111.3	24	115.7	116.0	116.4	24	114.1	114.4	114.6	24	113.4	115.0	115.8	24	---	---	---	0
7/9	111.0	111.3	111.4	24	114.9	115.7	116.2	24	114.4	114.5	114.6	24	114.1	114.8	115.6	24	---	---	---	0
7/10	111.1	111.3	111.5	24	113.4	113.9	114.7	24	113.9	114.0	114.3	24	113.7	114.4	115.0	24	---	---	---	0
7/11	110.4	110.7	111.2	24	113.5	114.4	115.4	24	113.0	113.1	113.4	24	113.3	114.3	114.8	24	---	---	---	0
7/12	109.8	110.0	110.3	24	116.4	117.2	119.0	24	112.2	112.4	112.7	24	111.3	111.8	112.4	24	---	---	---	0
7/13	109.6	109.9	110.2	23	115.3	115.6	116.0	23	111.7	111.8	112.0	23	112.6	113.3	113.6	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
6/30	113.1	114.4	116.0	24	117.6	117.9	118.4	24	110.4	110.8	111.1	24	114.2	115.2	117.4	24	111.9	112.3	112.7	24
7/1	114.6	115.2	115.7	24	117.8	119.2	119.7	24	110.9	111.1	111.3	24	115.4	115.8	116.3	24	110.1	110.5	111.7	24
7/2	114.1	114.8	115.5	24	116.9	117.8	119.3	24	111.2	111.8	112.1	24	116.0	116.2	116.6	24	110.3	111.1	111.5	24
7/3	113.1	114.0	114.9	24	116.5	117.5	118.2	24	111.4	111.9	112.4	24	115.4	116.9	117.8	24	109.5	110.0	110.8	24
7/4	112.8	113.6	114.3	24	116.7	118.4	119.3	24	111.8	112.0	112.3	24	114.2	115.7	117.7	24	110.9	112.0	112.5	24
7/5	113.4	114.3	116.0	24	116.1	116.8	118.3	24	111.0	111.2	111.5	24	113.9	114.5	115.1	24	112.1	112.4	112.7	24
7/6	113.0	113.8	115.4	24	115.8	116.2	116.4	24	110.2	110.8	111.3	24	114.9	115.7	117.1	24	110.5	110.9	111.2	24
7/7	113.2	113.4	113.6	24	116.1	117.4	119.1	24	110.3	110.5	110.7	24	114.3	115.8	116.7	24	110.3	110.7	111.1	24
7/8	113.1	113.3	114.1	24	115.6	116.5	117.2	24	110.0	110.5	110.9	24	113.6	114.9	115.8	24	110.0	110.7	111.3	24
7/9	112.4	113.0	113.3	24	115.0	115.3	115.5	24	109.5	109.7	110.1	24	113.9	114.1	114.3	24	109.4	110.2	111.1	24
7/10	111.3	111.7	111.9	24	114.9	115.2	115.5	24	108.0	108.3	108.8	24	113.2	113.4	113.5	24	107.2	107.5	107.8	24
7/11	109.7	110.2	110.9	24	114.9	116.3	116.7	23	106.6	106.9	107.2	24	113.7	115.1	116.3	24	106.6	107.5	108.6	24
7/12	110.2	110.8	112.2	24	116.2	116.6	116.8	24	105.9	106.1	106.4	24	112.6	112.9	113.2	24	108.5	108.8	109.3	24
7/13	109.6	110.0	110.9	23	116.2	117.1	117.5	23	105.1	105.5	105.7	23	112.8	112.9	113.0	23	107.6	108.0	108.5	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
6/30	115.8	116.0	116.3	24	114.5	115.9	116.5	24	115.2	116.0	116.5	24	114.0	116.2	124.5	24	116.6	117.5	119.1	24
7/1	114.4	114.7	115.0	24	112.8	114.0	115.4	24	115.2	115.9	116.6	24	114.9	117.6	136.3	17	116.1	117.3	119.0	24
7/2	114.2	114.5	114.7	24	109.6	109.9	110.7	24	114.1	114.7	114.9	24	---	---	---	0	117.2	117.8	118.8	24
7/3	113.7	114.2	115.0	24	109.1	109.5	110.0	24	113.9	114.8	115.3	24	111.6	112.3	113.4	15	116.5	116.9	117.3	24
7/4	113.8	115.2	116.0	24	110.0	110.7	111.2	24	113.6	114.4	114.9	24	112.5	113.8	114.6	24	115.4	116.3	118.6	24
7/5	114.8	115.2	116.1	24	112.4	113.3	113.5	24	115.1	115.6	115.9	24	113.3	115.3	116.6	24	116.1	117.2	118.8	24
7/6	113.6	114.2	115.2	24	113.3	113.9	114.6	24	116.3	116.7	116.8	24	113.8	116.0	117.2	24	116.5	116.8	118.0	24
7/7	113.8	114.4	115.2	24	110.6	111.3	112.4	24	114.5	114.8	115.7	24	112.7	113.5	114.9	24	116.4	116.6	116.7	24
7/8	113.3	113.8	114.2	24	109.2	109.6	109.9	24	113.4	114.0	114.2	24	112.5	113.9	114.8	24	114.9	115.6	116.7	24
7/9	113.3	113.6	114.2	24	109.2	109.4	109.6	24	114.0	114.7	116.1	24	112.0	113.9	115.5	24	115.2	115.9	117.5	24
7/10	111.9	112.3	112.5	24	108.3	108.5	108.7	24	114.5	115.0	116.1	24	111.3	112.8	114.2	24	116.1	116.5	117.2	24
7/11	111.7	112.8	113.1	24	106.8	107.1	107.9	24	112.8	114.1	115.0	24	111.1	113.5	115.1	24	116.2	116.4	116.8	24
7/12	112.2	113.0	113.3	24	106.9	107.5	107.8	24	112.0	112.8	113.6	24	111.5	112.9	113.7	24	114.5	115.0	116.2	24
7/13	111.9	112.4	113.0	23	107.1	107.5	107.9	23	112.8	113.8	115.7	23	111.0	113.0	114.9	23	114.6	115.1	116.3	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/14/2017 11:39

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/currentsmppsubmitdata.asp>

COMBINED YEARLING CHINOOK											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/30/2017 *	---	2	---	---	33	29	311	0	0	---	0
07/01/2017	---	---	---	---	0	0	796	0	---	0	0
07/02/2017	---	---	---	---	0	0	212	0	0	---	123
07/03/2017 *	---	---	---	---	0	0	134	0	---	0	0
07/04/2017	---	---	---	---	0	31	396	0	0	---	0
07/05/2017	---	---	---	---	0	0	88	0	---	0	226
07/06/2017 *	---	2	---	---	0	0	111	0	0	---	0
07/07/2017 *	---	2	---	---	0	0	304	0	---	0	0
07/08/2017 *	---	---	---	---	0	0	316	0	0	---	0
07/09/2017	---	---	---	---	0	0	199	0	---	0	0
07/10/2017 *	---	1	---	---	0	0	121	0	0	---	0
07/11/2017	---	---	---	---	0	6	115	0	---	0	0
07/12/2017	---	---	---	---	0	0	33	0	0	---	0
07/13/2017	---	---	---	---	0	0	123	0	---	0	0
07/14/2017	---	---	---	---	0	---	---	---	0	---	---
Total:	0	7	0	0	33	66	3,259	0	0	0	349
# Days:	0	4	0	0	15	14	14	14	8	7	14
Average:	0	2	0	0	2	5	233	0	0	0	25
YTD	33,704	22,231	21,106	8	3,998,296	2,400,545	2,885,193	50,596	1,583,272	1,720,241	1,947,910

COMBINED SUBYEARLING CHINOOK											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/30/2017 *	---	1	---	---	9,031	13,216	9,098	3,032	153,021	---	38,355
07/01/2017	---	---	---	---	7,770	10,812	16,170	829	---	70,025	49,779
07/02/2017	---	---	---	---	10,290	11,431	8,010	428	165,754	---	59,939
07/03/2017 *	---	---	---	---	7,375	4,608	4,328	574	---	75,311	64,564
07/04/2017	---	---	---	---	6,358	4,259	4,831	419	134,339	---	83,010
07/05/2017	---	---	---	---	7,884	6,319	5,430	218	---	61,666	93,502
07/06/2017 *	---	0	---	---	7,442	8,902	10,332	281	112,982	---	48,122
07/07/2017 *	---	0	---	---	14,368	8,544	5,671	216	---	67,061	62,516
07/08/2017 *	---	---	---	---	10,856	8,077	7,028	217	80,072	---	63,248
07/09/2017	---	---	---	---	9,723	10,097	7,342	390	---	49,653	93,892
07/10/2017 *	---	0	---	---	7,724	7,719	5,904	559	57,181	---	145,260
07/11/2017	---	---	---	---	4,737	6,889	5,587	728	---	57,104	123,684
07/12/2017	---	---	---	---	4,811	5,348	4,227	901	115,983	---	132,632
07/13/2017	---	---	---	---	7,611	1,603	5,432	783	---	34,934	112,107
07/14/2017	---	---	---	---	5,964	---	---	---	75,053	---	---
Total:	0	1	0	0	121,944	107,824	99,390	9,575	894,385	415,754	1,170,610
# Days:	0	4	0	0	15	14	14	14	8	7	14
Average:	0	0	0	0	8,130	7,702	7,099	684	111,798	59,393	83,615
YTD	0	11	40	0	920,416	980,750	611,937	59,726	2,047,852	926,942	3,352,052

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)	
06/30/2017	*	---	0	---	---	0	0	26	3	0	---	128
07/01/2017		---	---	---	---	0	57	0	0	---	0	0
07/02/2017		---	---	---	---	0	0	0	1	0	---	12
07/03/2017	*	---	---	---	---	0	0	0	1	---	0	0
07/04/2017		---	---	---	---	0	0	0	1	820	---	0
07/05/2017		---	---	---	---	0	0	0	0	---	0	0
07/06/2017	*	---	0	---	---	0	14	0	0	0	---	0
07/07/2017	*	---	0	---	---	0	0	0	0	---	0	0
07/08/2017	*	---	---	---	---	0	0	0	1	0	---	0
07/09/2017		---	---	---	---	0	0	0	1	---	0	0
07/10/2017	*	---	0	---	---	0	0	0	4	0	---	0
07/11/2017		---	---	---	---	0	0	0	1	---	0	0
07/12/2017		---	---	---	---	0	0	0	2	0	---	0
07/13/2017		---	---	---	---	0	0	0	1	---	0	0
07/14/2017		---	---	---	---	0	---	---	---	0	---	---
Total:		0	0	0	0	0	71	26	16	820	0	140
# Days:		0	4	0	0	15	14	14	14	8	7	14
Average:		0	0	0	0	0	5	2	1	103	0	10
YTD		0	0	2,232	0	128,502	86,636	69,601	35,283	86,630	96,620	356,026

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)	
06/30/2017	*	---	9	---	---	139	143	26	18	0	---	0
07/01/2017		---	---	---	---	98	57	51	5	---	306	0
07/02/2017		---	---	---	---	34	86	27	7	0	---	0
07/03/2017	*	---	---	---	---	101	29	0	4	---	0	0
07/04/2017		---	---	---	---	34	17	79	0	0	---	0
07/05/2017		---	---	---	---	35	43	0	7	---	0	0
07/06/2017	*	---	2	---	---	35	14	0	4	0	---	0
07/07/2017	*	---	1	---	---	73	29	0	4	---	0	0
07/08/2017	*	---	---	---	---	0	57	0	0	0	---	0
07/09/2017		---	---	---	---	0	0	28	4	---	0	0
07/10/2017	*	---	0	---	---	0	29	0	0	0	---	0
07/11/2017		---	---	---	---	0	59	0	6	---	0	0
07/12/2017		---	---	---	---	0	0	0	5	0	---	0
07/13/2017		---	---	---	---	0	0	31	6	---	0	0
07/14/2017		---	---	---	---	5	---	---	---	0	---	---
Total:		0	12	0	0	554	563	242	70	0	306	0
# Days:		0	4	0	0	15	14	14	14	8	7	14
Average:		0	3	0	0	37	40	17	5	0	44	0
YTD		7,117	15,917	7,614	1	4,064,845	1,853,018	2,517,458	32,081	442,839	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)
06/30/2017	*	---	0	---	---	0	29	0	0	0	---	0
07/01/2017		---	---	---	---	0	0	0	2	---	153	0
07/02/2017		---	---	---	---	0	0	27	1	409	---	12
07/03/2017	*	---	---	---	---	0	0	0	0	---	0	0
07/04/2017		---	---	---	---	34	0	0	0	410	---	0
07/05/2017		---	---	---	---	70	14	0	0	---	0	0
07/06/2017	*	---	0	---	---	70	0	0	0	0	---	0
07/07/2017	*	---	0	---	---	108	0	0	3	---	0	0
07/08/2017	*	---	---	---	---	107	29	0	83	0	---	0
07/09/2017		---	---	---	---	74	0	0	4	---	0	0
07/10/2017	*	---	0	---	---	0	29	0	3	0	---	0
07/11/2017		---	---	---	---	0	1	0	3	---	0	0
07/12/2017		---	---	---	---	0	0	0	2	0	---	0
07/13/2017		---	---	---	---	0	29	0	1	---	0	0
07/14/2017		---	---	---	---	0	---	---	---	0	---	---
Total:		0	0	0	0	463	131	27	102	819	153	12
# Days:		0	4	0	0	15	14	14	14	8	7	14
Average:		0	0	0	0	31	9	2	7	102	22	1
YTD		6	0	0	0	60,869	24,389	34,028	11,134	155,874	116,972	144,970

		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)
06/30/2017	*	---	0	---	---	20	70	40	0	800	---	0
07/01/2017		---	---	---	---	3	140	0	0	---	500	350
07/02/2017		---	---	---	---	17	80	0	0	200	---	55
07/03/2017	*	---	---	---	---	9	40	0	0	---	200	117
07/04/2017		---	---	---	---	5	40	20	0	800	---	67
07/05/2017		---	---	---	---	9	30	20	0	---	400	0
07/06/2017	*	---	0	---	---	4	50	20	0	200	---	0
07/07/2017	*	---	0	---	---	7	60	0	2	---	200	0
07/08/2017	*	---	---	---	---	0	80	0	0	200	---	0
07/09/2017		---	---	---	---	4	80	0	0	---	200	0
07/10/2017	*	---	0	---	---	0	80	80	0	200	---	0
07/11/2017		---	---	---	---	1	20	20	1	---	100	0
07/12/2017		---	---	---	---	3	60	0	0	0	---	0
07/13/2017		---	---	---	---	1	40	0	1	---	200	143
07/14/2017		---	---	---	---	2	---	---	---	0	---	---
Total:		0	0	0	0	85	870	200	4	2,400	1,800	732
# Days:		0	4	0	0	15	14	14	14	8	7	14
Average:		0	0	0	0	6	62	14	0	300	257	52
YTD		0	3	4	0	264	6,711	2,910	53	32,005	61,672	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:

7/14/17 11:40 AM

06/30/17 TO 07/14/17

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	86,016	25		411	325	86,777
	Sum of NumberBarged	80,889	25		406	316	81,636
	Sum of NumberBypassed	6	0		0	0	6
	Sum of Numbertrucked	0	0		0	0	0
	Sum of SampleMorts	63	0		0	0	63
	Sum of FacilityMorts	1,284	0		2	9	1,295
	Sum of ResearchMorts	0	0		0	0	0
	Sum of TotalProjectMorts	1,347	0		2	9	1,358
LGS	Sum of NumberCollected	75,223	46	50	393	91	75,803
	Sum of NumberBarged	74,889	46	50	390	85	75,460
	Sum of NumberBypassed	9	0	0	0	0	9
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	25	0	0	0	1	26
	Sum of FacilityMorts	300	0	0	3	5	308
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	325	0	0	3	6	334
LMN	Sum of NumberCollected	71,917	2,403	20	180	20	74,540
	Sum of NumberBarged	71,930	2,398	20	181	20	74,549
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	22	0	0	0	0	22
	Sum of FacilityMorts	63	6	0	0	0	69
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	85	6	0	0	0	91
Total Sum of NumberCollected		233,156	2,474	70	984	436	237,120
Total Sum of NumberBarged		227,708	2,469	70	977	421	231,645
Total Sum of NumberBypassed		15	0	0	0	0	15
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		110	0	0	0	1	111
Total Sum of FacilityMorts		1,647	6	0	5	14	1,672
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		1,757	6	0	5	15	1,783

YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/14/17 11:40 AM

TO: 07/14/17

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
LGR	Sum of NumberCollected	569,767	2,362,673	74,225	35,394	2,329,304	5,371,363	
	Sum of NumberBarged	557,073	978,665	63,247	19,536	949,170	2,567,691	
	Sum of NumberBypassed	3,972	1,381,285	10,900	15,645	1,379,868	2,791,670	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	200	90	5	11	53	359	
	Sum of FacilityMorts	4,736	2,607	73	202	188	7,806	
	Sum of ResearchMorts	12	26	0	0	22	60	
	Sum of TotalProjectMorts	4,948	2,723	78	213	263	8,225	
LGS	Sum of NumberCollected	559,504	1,337,946	43,198	13,669	1,064,964	3,019,281	
	Sum of NumberBarged	556,524	495,706	39,956	10,006	313,186	1,415,378	
	Sum of NumberBypassed	575	837,161	3,201	3,296	751,526	1,595,759	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	64	29	1	8	10	112	
	Sum of FacilityMorts	2,341	5,050	40	359	242	8,032	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	2,405	5,079	41	367	252	8,144	
LMN	Sum of NumberCollected	303,633	1,458,822	33,440	17,200	1,293,630	3,106,725	
	Sum of NumberBarged	317,698	931,590	32,959	12,568	710,481	2,005,296	
	Sum of NumberBypassed	600	489,493	800	4,597	560,085	1,055,575	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	35	37	2	5	31	110	
	Sum of FacilityMorts	247	1,086	39	120	386	1,878	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	282	1,123	41	125	417	1,988	
Total Sum of NumberCollected		1,432,904	5,159,441	150,863	66,263	4,687,898	11,497,369	
Total Sum of NumberBarged		1,431,295	2,405,961	136,162	42,110	1,972,837	5,988,365	
Total Sum of NumberBypassed		5,147	2,707,939	14,901	23,538	2,691,479	5,443,004	
Total Sum of NumberTrucked		0	0	0	0	0	0	
Total Sum of SampleMorts		299	156	8	24	94	581	
Total Sum of FacilityMorts		7,324	8,743	152	681	816	17,716	
Total Sum of ResearchMorts		12	26	0	0	22	60	
Total Sum of TotalProjectMorts		7,635	8,925	160	705	932	18,357	

Cumulative Adult Passage at Mainstem Dams Through: 07/13

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	07/13	83624	18110	137215	11145	150783	25708	77735	9303	101323	8720	84364	19028	0	0	0	0	0	0
TDA	07/13	58308	12497	105504	9999	118766	22002	60863	7890	79335	6598	68703	14622	0	0	0	0	0	0
JDA	07/13	46675	12475	93659	8262	103450	20515	53383	6096	74814	5665	60615	13863	0	0	0	0	0	0
MCN	07/13	44292	7020	87191	7374	93925	16835	49057	3825	66600	4797	55157	10269	0	0	0	0	0	0
IHR	07/13	28306	6949	67484	5029	68114	11248	8213	1929	11681	1281	16874	4422	0	0	0	0	0	0
LMN	07/13	28545	8270	66115	6266	68087	10905	7168	2950	10129	1932	17563	5027	0	0	0	0	0	0
LGS	07/13	26598	8335	62597	6365	63765	12007	7585	3174	9858	1619	16375	5396	0	0	0	0	0	0
LGR	07/13	27357	8256	62050	5480	62403	13092	7196	3004	8575	1611	14466	5579	0	0	0	0	0	0
PRD	07/11	7268	783	16843	1003	17901	1826	36638	861	55014	2787	35989	1388	0	0	0	0	0	0
WAN	07/11	6612	484	17164	919	17602	2161	34056	708	50759	1769	32667	1136	0	0	0	0	0	0
RIS	07/12	8080	564	18646	715	18006	2748	36545	486	49723	1356	31607	2139	0	0	0	0	0	0
RRH	07/12	5864	406	9449	351	7849	1209	24334	282	32181	841	20571	1174	0	0	0	0	0	0
WEL	07/12	6589	820	11789	833	8215	1601	12100	204	17740	548	12534	771	0	0	0	0	0	0
WFA	07/11	32051	2206	28397	1955	33339	1318	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2017		2016		10-Yr Avg.		10-Yr			10-Yr		Unclipped		Unclipped		10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.
BON	07/13	0	0	0	0	0	0	84395	332329	303520	7830	27789	35143	3255	11616	15437	55850	21377	10856
TDA	07/13	0	0	0	0	0	0	60843	279614	255478	2443	10361	17422	1074	5049	8111	15748	4046	2260
JDA	07/13	0	0	0	0	0	1	63031	279553	244578	1542	6852	16078	1034	3857	6801	10492	3621	1533
MCN	07/13	0	0	0	0	1	0	54574	251444	207777	2917	5345	12598	970	2892	4298	450	331	162
IHR	07/13	0	0	0	0	0	0	343	810	697	1345	3705	8767	607	1842	2412	208	229	55
LMN	07/13	0	0	0	0	0	0	282	876	758	1658	3371	11076	832	2062	3608	55	47	5
LGS	07/13	0	0	0	0	0	0	183	792	640	1582	4443	6324	707	2605	2949	46	24	2
LGR	07/13	0	0	0	0	0	0	146	599	574	7365	6193	10013	3084	3589	3914	6	13	0
PRD	07/11	0	0	0	0	0	0	52952	283555	205054	186	767	707	0	0	0	699	914	286
WAN	07/11	0	0	0	0	0	0	59894	282982	179292	169	682	693	0	0	0	522	428	131
RIS	07/12	0	0	0	0	0	0	53822	268714	178890	141	393	471	68	211	249	105	66	18
RRH	07/12	0	0	0	0	0	0	31124	199689	135459	163	269	533	45	120	304	50	37	5
WEL	07/12	0	0	0	0	0	0	23353	169607	108926	93	181	173	66	81	102	8	1	0
WFA	07/11	0	0	0	0	0	0	0	0	0	2452	24600	20879	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.

