

Fish Passage Center

Weekly Report #19-28

September 13, 2019

Starting on September 13, the weekly report will be every two weeks.

This Week's Highlights

Water Supply

Precipitation throughout the Columbia Basin has varied between 120% and 236% of average at individual sub-basins over September. Precipitation above The Dalles has been 165% of average over September. Over the 2019 water year, precipitation has ranged between 68% and 87% of average.

Table 1. Summary of September precipitation and cumulative October through September 12th precipitation with respect to average (1981-2010), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2019 September 1-12, 2019		Water Year 2019 October 1, 2018 to September 12, 2019	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.37	161	27.3	74
Snow River Above Ice Harbor	0.72	170	19.4	86
Columbia Above The Dalles	0.86	165	21.3	79
Kootenai	1.22	136	25.1	68
Clark Fork	1.63	230	23.7	87
Flathead	2.12	236	27.1	78
Pend Oreille River Basin above Waneta Dam	1.62	214	25.4	79
Salmon River Basin	0.82	158	23.3	82
Upper Snake Tributaries	1.30	196	22.1	84
Clearwater	0.91	120	32.2	81
Willamette River above Portland	1.38	172	51.5	78

Grand Coulee Reservoir is at 1279.6 feet (9-12-19) and has refilled 1.9 feet over the last week. Outflows at Grand Coulee have ranged between 40.2 Kcfs and 68.0 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2442.2 feet (9-12-19) and has held steady over the past week. Daily average outflows at Libby Dam have been 6.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3552.5 feet (9-12-19) and has drafted 0.4 feet last week. Outflows at Hungry Horse have been 2.1 Kcfs over the last week.

Dworshak is currently at an elevation of 1528.8 feet (9-12-19) and has drafted 4.4 feet over last week. Dworshak outflows have been 5.4-6.5 Kcfs.

The Brownlee Reservoir was at an elevation of 2050.7 feet on September 12th, 2019 and has drafted 1.5 feet over the last week. Outflows at Hells Canyon have ranged between 8.7 and 19.3 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 3rd, 2019), the flow objective this spring was 95 Kcfs at Lower Granite. Flows at Lower Granite Dam averaged 120.4 Kcfs over the spring season. The summer flow period began on June 21st at Lower Granite with a flow Objective of 53 Kcfs, flows averaged 36.4 Kcfs over the summer period.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objective was 220 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Flows at McNary averaged 250.1 Kcfs at McNary and 123.5 Kcfs at Priest Rapids over the spring season. The summer flow period began on July 1st at McNary with a flow objective of 200 Kcfs, flows averaged 143.2 Kcfs over the summer flow season at McNary.

Spill

Flows in the Snake River this week were similar to last week. The daily average flow for this week at Lower Granite Dam was 26.4 Kcfs, whereas that for last week was 24.8 Kcfs. Flows in the Upper and Mid-Columbia decreased again this week, when compared to the previous week. The daily average flows for this week at Rock Island and McNary dams were 55.8 Kcfs and 82.3 Kcfs, respectively. Last week's daily average flows were 71.8 Kcfs at Rock Island Dam and 108.1 Kcfs at McNary Dam.

The summer fish spill program at the FCRPS projects ended on August 31, 2019 and only a small amount of adult attraction spill (0.9-1.3 Kcfs) has been provided at two projects, John Day and Bonneville dams.

Temperature

With the termination of summer spill program, the total dissolved gas (TDG) monitors in the forebays of many FCRPS projects have been removed for the year and many more will be removed in the coming weeks. To date, the TDG monitors in the Lower Granite, Ice Harbor, and McNary forebays have all been removed. Therefore, temperature data from these monitors are no longer be available. However, the forebay temperature strings at these three projects continue to collect data. Herein, we report the daily average temperatures for these three projects from the forebay temperature strings located at the 3m depth. The daily average temperatures at these three sites on September 12, 2019 were 70.2 °F at Lower Granite, 70.6 °F at Ice Harbor, and 70.6 °F at McNary. The forebay TDG monitor at Bonneville is still in operation and continues to collect and report data. The daily average temperature at the Bonneville forebay on September 12, 2019 was 70.6 °F.

Smolt Monitoring

The Smolt Monitoring Program (SMP) is currently collecting and reporting data from six bypass facilities (Bonneville Dam, John Day Dam, McNary Dam, Lower Granite Dam, Little Goose Dam, and Lower Monumental Dam). Sampling at Rock Island Dam ended after the sample on August 31st. Subyearling Chinook dominated the collections at all six bypass facilities this week. Subyearling Chinook passage decreased at five of the six SMP sites this week. The one exception was Bonneville Dam, where the subyearling Chinook daily average passage index for this week was nearly identical to the previous week.

Sampling at Bonneville (BON) continued under the high temperature sampling protocol this week. Therefore, sampling occurred every-other-day and the target sample size was approximately 100 fish. This every-other-day sample is conducted over a 24-hour period so making comparisons to past weeks is possible. Subyearling Chinook continued to dominate the samples at BON this week. This week's daily average passage index for subyearling Chinook at BON was about 70 per day, which is virtually identical to last week's daily average passage index. No spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) were encountered in this week's samples. Pacific lamprey macropthalmia were only encountered in one of this week's samples (September 6th) and no ammocoetes were encountered this week. Everyday sampling will resume at BON when temperatures in the forebay decrease to 69.5°F or below.

John Day (JDA) continued to sample under the high temperature sampling protocol this week. Under the high temperature protocol, sampling occurs only twice per week for condition only, which means that they only sample for a limited number of hours. Therefore, it is not appropriate to compare passage indices from the condition only samples to those of full sampling. Data from these condition only samples are sent to FPC on Tuesdays and Fridays. The only species of salmonid that was encountered in this week's condition samples were subyearling Chinook. No Pacific lamprey juveniles were encountered this week. Regular sampling will resume at JDA when temperatures in the forebay decrease to 69.5°F or below. However, sampling at JDA is scheduled to end after the sample on September 15th.

Sampling at McNary (MCN) also occurs every-other-day. This week's samples at MCN were again dominated by subyearling Chinook, with a daily average passage index of about 30 per day. This is a decrease from last week's daily average passage index of about 70 subyearling Chinook per day. The only spring migrants that were encountered this week were sockeye and steelhead, each of which were encountered in one of this week's samples. Pacific lamprey macropthalmia were encountered in all four of this week's samples, with a daily average collection of 13 per day. No ammocoetes were encountered at MCN this week.

With the implementation of every-other-day trucking, two days of SMP data from Lower Granite Dam (LGR) are submitted to the FPC every-other-day. Subyearling Chinook continued to dominate the samples at LGR this week. This week's daily average passage index for subyearling Chinook was about 180 per day, which is a slight decrease from last week's daily average passage index of about 200 per day. Very few spring migrants were encountered in this week's samples at LGR. Pacific lamprey ammocoetes were encountered in four of this week's samples while macrophthalmia were encountered in three samples this week. Daily sample counts for lamprey ammocoetes and macrophthalmia ranged from zero to three this week.

Subyearling Chinook continued to dominate the samples at Little Goose Dam (LGS) this week. This week's daily average passage index for subyearling Chinook was about 140 per day, which is a decrease from last week's daily average passage index of about 220 per day. The only other salmonids that were encountered in this week's samples at LGS were sockeye and steelhead, which were each encountered in a few of this week's samples. Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of seven per day. Pacific lamprey ammocoetes were encountered in only one of this week's samples.

Similar to LGR, two days of SMP data from Lower Monumental Dam (LMN) are submitted to the FPC every-other-day. Subyearling Chinook continued to dominate the samples at LMN this week. This week's daily average passage index for subyearling Chinook was about 35 per day, which is slightly higher than last week's daily average passage index of about 60 per day. No spring migrants were encountered in this week's samples at LMN and no lamprey juveniles were encountered this week. Per the Fish Passage Plan, truck transport from LMN has been suspended since August 3rd, due to low collection numbers.

Hatchery Releases

FPC has not received preliminary data from some hatcheries as of 09/13/19, therefore, this hatchery release schedule represents the most up to date accounting that are available, but should not be considered a finalized record of hatchery releases.

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 releases were scheduled for this zone this week. However, a release of approximately 330,000 spring Chinook parr is scheduled to begin over the next two weeks. This release is scheduled to take place on the Selway River, a tributary of the Clearwater River.

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. In the past week there were no scheduled releases into this zone, nor are there any scheduled for the next two.

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). In the past week there were no scheduled releases into this zone, nor are there any scheduled for the next two.

Lower Columbia Zone:

The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. In the past week, there were no scheduled releases into this zone. In the next two weeks, there are 400,000 fall Chinook planned for release into Tanner Creek on the 27th.

Adult Passage Count

Adult Passage Daily passage numbers at Bonneville Dam ranged between 3,227 and 14,946 adult Chinook in the last week. The 2019 Bonneville Dam adult fall Chinook count of 138,450 is about 1.2 times greater than the 2018 count, while being 44% of the 10-year average. At Willamette Falls, 114 adult fall Chinook have been counted so far this year. In 2018, 532 adult fall Chinook were counted at Willamette Falls. As of September 11th, a total of 23,256 adult fall Chinook have been counted at McNary Dam and 3,862 have been counted at Lower Granite Dam. The 2019 McNary Dam adult fall Chinook count is about 61.6% of the 2018 count and about 31.2% of the 10-year average count.

The 2019 Bonneville Dam adult steelhead count of 61,391 is about 77.1% the 2018 count of 79,625 and about 25.2% of the 10-year average count of 243,232. The 2019 Bonneville Dam adult unclipped steelhead count of 32,133 is about 1.2 times greater than the 2018 count of 27,861, while being 36.6% of the 10-year average count of 87,743. Daily adult steelhead counts at Lower Granite Dam ranged from 45 to 150 adults per day last week. This year's Lower Granite steelhead count of 5,658 is about 65.3% of the 2018 count of 8,664, while being and about 17.8% of the 10-year average count of 31,717. The 2019 Lower Granite Dam adult unclipped steelhead count of 2,922 has 4 fewer fish than the 2018 count of 2,926 and 25.3% of the 10-year average count of 11,552. At Willamette Falls, the 2019 count for steelhead was 8,248 as of September 11th. This year's steelhead count is about 76.7% of the 2018 count of 10,744 and about 41.2% of the 10-year average count of 20,014.

The 2019 Bonneville Dam adult coho count of 20,227 has 1,317 fewer fish than the 2018 count and about 51.3% of the 10-year average count. A total of 19,342 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2019 lamprey count is about 44.6% of the 2018 count of 43,350 and 58.4% of the 10-year average count of 33,098.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: **9/14/2019** to **9/27/2019**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Nez Perce Tribe	Dworshak NFH	CH1	SP	2019	331,918	09-15-19	09-15-19	Selway River	Clearwater River	M F SNAK
Nez Perce Tribe Total					331,918					
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CH0	FA	2019	400,000	09-27-19	09-27-19	Tanner Creek	Tanner Creek	LCOL
Oregon Dept. of Fish and Wildlife Total					400,000					
Grand Total					731,918					

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

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: **8/31/2019** to **09/13/19**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Washington Dept. of Fish and Wildlife	Speelyai Hatchery	CH0	SP	2019	100,000	07-01-19	09-01-19	Lewis River	Lewis River	LCOL
Washington Dept. of Fish and Wildlife Total					100,000					
Grand Total					100,000					

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

Daily Average Flow and Spill (in Kcfs)

Date 9/13/2019 8:15:25 AM

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Upper Columbia Projects

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/30/2019	83.4	0.1	82.1	0.0	88.7	0.0	90.5	0.0	98.0	0.0	117.4	1.8	111.0	2.8
08/31/2019	75.8	0.0	66.8	0.0	67.1	0.0	68.6	0.0	72.0	0.0	93.9	1.2	92.0	2.9
09/01/2019	66.3	0.1	71.7	0.0	66.7	0.0	60.1	0.0	62.9	0.0	54.0	1.0	52.8	2.7
09/02/2019	69.4	0.1	70.6	0.0	78.9	0.0	77.9	0.3	81.4	0.0	86.0	4.8	82.6	2.8
09/03/2019	60.3	0.1	65.8	0.0	61.1	0.0	58.5	0.0	61.8	0.0	81.3	0.9	85.7	3.3
09/04/2019	67.5	0.1	63.8	0.0	66.3	0.0	65.4	0.0	68.5	0.0	87.0	0.7	77.1	2.5
09/05/2019	61.2	0.1	60.4	0.0	60.3	4.1	55.1	0.0	57.7	0.0	60.1	0.5	61.0	3.6
09/06/2019	68.0	0.1	69.1	0.0	67.7	0.0	67.0	0.0	69.0	0.0	66.8	0.5	64.5	2.3
09/07/2019	40.2	0.1	40.3	0.0	52.1	0.0	51.6	0.0	55.5	0.0	53.5	1.0	45.9	2.3
09/08/2019	44.3	0.0	39.3	0.0	42.5	0.0	40.2	0.0	42.3	0.0	46.4	0.9	46.3	2.5
09/09/2019	63.0	0.1	64.4	0.0	52.4	0.0	51.3	0.0	52.9	0.2	50.5	1.0	47.2	1.4
09/10/2019	46.9	0.1	43.7	0.0	51.7	2.6	56.1	0.0	58.8	0.0	78.8	1.1	76.7	2.8
09/11/2019	52.6	0.1	52.0	0.0	49.1	0.0	48.4	0.0	48.8	0.0	63.5	0.4	62.3	2.8
09/12/2019	67.6	0.1	57.3	0.0	59.7	0.0	60.9	0.0	63.0	0.0	64.1	0.3	61.3	2.7

- Data not available or incorrect

These data were obtained from the Corps of Engineers...

Daily Average Flow and Spill (in Kcfs)

Date 9/13/2019 8:15:25 AM

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Snake Basin Projects

Date	Dworshak		Brownlee		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Inflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/30/2019	7.3	0.0			24.6	11.8	21.8	8.7	22.4	9.6	22.5	6.7		
08/31/2019	7.5	0.0			24.7	11.8	22.9	7.0	20.5	8.3	23.7	7.1		
09/01/2019	7.0	0.0			23.2	0.0	22.5	0.0	19.6	0.0	18.6	0.0		
09/02/2019	7.0	0.0			23.2	0.0	23.4	0.0	23.0	0.0	19.8	0.0		
09/03/2019	6.8	0.0			24.7	0.0	21.4	0.0	21.6	0.0	19.8	0.0		
09/04/2019	7.0	0.0			24.6	0.0	25.0	0.0	24.7	0.0	25.5	0.0		
09/05/2019	7.0	0.0			29.0	0.0	22.0	0.0	22.8	0.0	23.0	0.0		
09/06/2019	6.5	0.0			28.6	0.0	26.3	0.0	23.8	0.0	23.9	0.6		
09/07/2019	6.2	0.0			25.0	0.0	26.6	0.0	27.4	0.0	25.5	0.0		
09/08/2019	5.9	0.0			26.2	0.0	20.6	0.0	22.2	0.0	23.0	0.0		
09/09/2019	5.9	0.0			23.4	0.0	20.5	0.0	20.4	0.0	19.5	0.0		
09/10/2019	5.9	0.0			25.2	0.0	22.9	0.0	22.0	0.0	24.3	0.0		
09/11/2019	5.9	0.0			27.6	0.0	24.1	0.0	24.2	0.0	22.4	0.0		
09/12/2019	5.4	0.0			28.6	0.0	30.7	0.0	30.7	0.0	30.7	0.0		

- Data not available or incorrect

These data were obtained from the Corps of Engineers...

Daily Average Flow and Spill (in Kcfs)

Date 9/13/2019 8:15:25 AM

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Mid - Columbia Projects

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
08/30/2019	132.8	75.7	117.5	40.8	108.7	43.3	128.8	85.0	0.9	30.6
08/31/2019	129.8	73.9	117.8	41.2	108.5	43.5	125.1	81.3	0.9	30.5
09/01/2019	100.8	0.2	98.2	1.1	97.8	0.1	108.3	1.8	0.9	97.9
09/02/2019	82.8	0.0	90.7	1.0	92.2	0.0	100.5	1.3	1.1	90.6
09/03/2019	112.1	0.0	105.7	1.0	105.5	0.0	110.0	1.3	13.8	87.5
09/04/2019	100.2	0.0	98.2	1.0	97.4	0.0	106.4	1.4	0.7	97.0
09/05/2019	98.0	0.0	92.0	0.8	92.6	0.0	104.0	1.3	-0.2	95.6
09/06/2019	83.8	0.0	89.3	1.0	90.3	0.0	102.8	1.3	0.9	93.6
09/07/2019	85.8	0.0	87.5	1.0	86.9	0.0	104.1	1.3	0.9	94.9
09/08/2019	86.9	0.0	72.8	1.1	74.6	0.0	91.4	1.3	0.9	82.2
09/09/2019	70.7	0.0	68.8	1.0	69.5	0.0	81.7	1.3	0.9	72.5
09/10/2019	79.2	0.0	80.9	1.0	82.0	0.0	87.7	1.3	0.9	78.5
09/11/2019	82.2	0.0	82.8	1.0	84.1	0.0	94.6	1.3	0.9	85.4
09/12/2019	87.7	0.2	105.2	0.9	104.6	0.0	112.9	1.3	0.9	104.2

- Data not available or incorrect

These data were obtained from the Corps of Engineers...

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
(Washington Calculation)**

Date 9/13/2019 8:15:12 AM

Total Dissolved Gas Data at Upper Columbia Sites

Date	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph				Chief J. Dnst				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30									102.4	103.8	103.6	24	103.8	104.4	104.9	24	103.4	104.1	103.9	21	103.0	103.6	103.5	24	08/30
08/31									102.4	102.9	103.3	24	104.4	105.4	106.1	24	103.6	103.8	104.0	24	103.2	103.5	103.8	24	08/31
09/01									102.9	103.1	103.5	24	104.6	105.6	106.1	24	104.0	104.6	105.1	23	103.2	103.7	104.3	24	09/01
09/02									102.5	102.7	103.6	24	104.1	104.7	105.2	24	104.0	104.4	104.6	18	102.9	103.5	103.6	24	09/02
09/03									102.9	103.2	103.9	24	104.3	105.2	106.1	24	104.4	104.9	105.4	22	103.4	103.8	104.0	24	09/03
09/04									104.1	104.1	104.4	24	104.0	104.9	105.9	24	104.4	105.2	105.8	21	103.5	104.0	104.5	24	09/04
09/05									103.5	104.1	104.1	24	103.8	105.1	106.4	24	104.5	105.1	105.2	12	103.4	103.9	104.7	24	09/05
09/06									102.8	103.4	103.6	24	103.3	104.0	104.9	24	104.0	105.2	104.4	6	103.4	103.6	104.0	24	09/06
09/07									102.3	102.4	102.7	24	104.6	105.7	106.2	24				0	103.9	104.5	105.0	24	09/07
09/08									104.0	104.1	104.3	24	105.1	105.7	106.3	24	102.5	104.6	104.6	5	103.9	104.3	104.9	24	09/08
09/09									103.1	104.0	104.2	24	104.0	104.9	105.7	24	104.2	104.6	104.6	8	103.5	103.9	104.8	24	09/09
09/10									102.3	103.1	103.5	24	104.0	104.9	105.7	24	103.7	104.2	104.2	13	103.4	103.9	104.6	24	09/10
09/11									101.6	101.8	102.3	24	103.3	104.2	104.9	24	102.8	103.2	103.1	10	102.4	103.5	103.1	24	09/11
09/12									101.2	102.3	102.6	22	103.3	104.0	104.6	22	102.9	103.2	103.4	17	102.2	102.8	103.2	22	09/12

Total Dissolved Gas Data at Upper Columbia Sites

Date	Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr				Rock Island				Rock I. Tlwr				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	103.7	104.2	104.6	24	104.3	106.8	110.6	24	104.5	105.3	106.5	24	103.4	104.2	105.3	21	103.5	103.8	104.0	24	103.5	103.7	104.0	13	08/30
08/31	104.0	104.5	104.9	24	103.5	103.9	104.1	24	105.2	106.0	106.1	24	103.6	104.4	104.7	21	104.7	105.7	106.3	24	104.5	105.5	106.1	12	08/31
09/01	104.1	104.5	104.8	24	103.7	103.9	104.1	24	105.8	106.4	106.9	24	104.5	106.1	106.6	20	104.4	105.7	105.2	24	104.5	105.7	105.1	12	09/01
09/02	103.8	104.4	105.0	24	103.4	103.8	104.1	24	104.6	106.1	105.1	24	104.9	106.1	107.3	21	104.9	105.2	105.4	24	104.5	105.1	105.2	12	09/02
09/03	104.3	105.2	106.3	24	103.5	103.9	104.4	24	104.6	105.3	106.4	24	104.2	104.9	105.8	21	104.1	105.0	104.9	24	104.0	104.9	104.7	13	09/03
09/04	104.1	105.0	105.4	24	103.3	103.9	103.9	24	104.3	105.3	105.1	24	104.2	105.0	105.8	15	103.8	104.4	104.3	24	103.4	104.3	103.9	12	09/04
09/05	104.4	105.2	106.0	24	104.6	106.4	114.3	24	104.4	104.7	105.5	24	103.4	104.9	104.7	18	103.7	104.0	104.3	24	103.2	103.6	103.9	11	09/05
09/06	103.8	105.1	105.1	24	105.1	108.3	111.4	24	103.8	104.8	104.5	24	103.7	104.4	104.6	16	103.5	103.8	103.9	24	103.0	103.6	103.5	13	09/06
09/07	104.5	105.4	105.9	24	103.7	104.6	104.8	24	104.5	105.2	106.6	24	103.7	104.0	104.8	20	103.7	104.1	104.6	24	103.1	103.7	104.0	12	09/07
09/08	104.4	105.3	105.4	24	104.0	104.6	104.5	24	105.1	105.9	106.7	24	102.2	103.9	105.8	16	103.9	104.4	105.0	24	103.3	104.1	104.9	11	09/08
09/09	103.9	104.6	105.2	24	103.8	104.2	104.2	24	106.2	106.7	107.5	24	104.3	105.8	106.9	18	103.6	104.4	104.6	24	102.9	104.1	103.9	11	09/09
09/10	103.2	104.3	104.2	24	104.6	105.9	109.5	24	104.6	106.5	105.4	24	103.6	106.0	105.6	19	104.7	105.0	105.4	24	104.6	105.4	105.5	11	09/10
09/11	102.1	103.2	103.9	24	102.0	103.2	103.4	24	103.6	104.3	104.3	24	101.5	102.6	102.6	20	103.2	104.6	104.0	24	103.2	104.9	103.8	11	09/11
09/12	102.6	103.8	104.3	20	102.1	103.5	103.9	20	103.5	103.9	104.3	21	101.5	102.4	103.2	16	103.0	103.4	103.6	21	102.9	103.5	103.6	9	09/12

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
(Washington Calculation)**

Date 9/13/2019 8:15:12 AM

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Total Dissolved Gas Data at Upper and Mid-Columbia Sites

Date	Wanapum				Wanapum Tlwr				Priest Rapids				Priest R. Dnstr				Pasco				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	103.9	105.0	105.6	24	104.3	104.7	104.5	24	103.5	104.0	104.5	24	103.8	104.3	104.6	24					08/30
08/31	103.7	106.5	107.6	24	104.4	104.7	104.9	24	103.6	104.1	105.0	24	104.3	104.9	105.2	24					08/31
09/01	102.1	105.9	104.8	24	104.3	104.7	104.6	18	102.9	103.9	104.9	24	103.9	104.6	105.2	24					09/01
09/02	102.3	106.3	107.1	21				0	102.4	103.4	103.9	24	103.1	104.4	104.0	24					09/02
09/03	105.3	107.1	109.5	24				0	103.5	103.8	104.7	24	104.0	104.9	105.8	24					09/03
09/04	104.0	106.1	107.2	24				0	102.6	103.6	104.6	24	103.0	104.0	104.2	24					09/04
09/05	101.1	106.3	109.4	22				0	103.2	104.2	105.3	24	103.0	103.9	103.5	5					09/05
09/06	105.5	107.0	108.9	24				0	103.2	104.0	105.1	24				0					09/06
09/07	104.3	106.6	108.2	24				0	103.9	104.4	105.1	24	104.5	105.4	105.9	24					09/07
09/08	101.5	105.9	103.8	24				0	103.5	104.5	104.9	24	104.1	105.4	104.8	24					09/08
09/09	100.1	102.0	104.1	22				0	95.9	103.4	103.1	22	103.3	104.2	104.5	24					09/09
09/10	101.4	103.8	104.7	22				0	99.6	100.7	102.4	24	102.4	103.4	103.3	24					09/10
09/11	99.0	103.8	103.6	24	103.6	103.7	103.7	2	98.1	100.6	101.1	24	102.0	102.5	104.0	24					09/11
09/12	101.2	103.2	105.3	24	103.4	103.6	103.8	16	98.2	100.0	101.4	24	102.3	103.2	104.5	24					09/12

Total Dissolved Gas Data at Snake and Clearwater Sites

Date	Dworshak				Clwrtr Peck				Anatone				Clwrtr-Lewiston				Lower Granite				Lower G. Tlwr				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	100.1	100.4	100.8	24	101.5	102.6	103.7	24	101.3	102.9	104.3	24					99.1	99.7	99.9	24	108.9	109.1	109.3	24	08/30
08/31	100.2	100.6	101.1	24	101.6	102.8	103.9	24	101.6	103.1	104.5	24					100.6	101.1	101.4	24	108.9	109.1	109.4	24	08/31
09/01	100.3	100.7	101.2	24	101.7	103.0	104.1	24	101.4	102.9	104.3	24					100.7	101.2	101.2	24	100.2	108.9	108.6	24	09/01
09/02	100.0	100.5	100.8	24	101.4	102.6	103.6	24	101.0	102.5	103.8	24					100.0	100.7	100.5	24	99.2	99.5	99.6	24	09/02
09/03	100.5	100.9	101.1	24	101.7	102.9	103.7	24	101.0	102.5	104.0	24					100.0	100.2	100.5	24	99.6	100.2	100.5	24	09/03
09/04	100.1	100.6	100.9	24	101.4	102.5	103.6	24	101.0	102.3	103.7	24					99.5	100.1	99.8	24	99.1	100.2	99.7	24	09/04
09/05	100.0	100.3	100.7	24	101.1	102.2	102.8	24	100.5	101.6	102.7	24					99.7	100.2	100.7	16	100.0	101.1	101.7	24	09/05
09/06	100.4	100.7	101.2	24	100.2	101.7	100.4	9	98.6	101.1	99.9	24							0	100.1	101.1	101.2	24	09/06	
09/07	101.9	102.5	102.8	24				0	98.0	98.5	99.3	24							0	100.7	101.8	102.1	24	09/07	
09/08	100.5	102.5	101.8	24				0	97.3	98.3	97.9	24							0	100.1	101.8	101.2	24	09/08	
09/09	100.3	100.6	101.0	24				0	98.3	99.4	100.6	24							0	99.0	99.9	99.9	24	09/09	
09/10	100.3	100.7	101.2	24				0	99.4	100.5	101.6	24							0	99.1	99.5	99.8	24	09/10	
09/11	99.7	100.4	100.6	24				0	97.3	99.8	99.3	24							0	97.6	99.2	98.2	24	09/11	
09/12	99.5	100.0	100.5	23				0	97.8	98.7	99.9	23							0	97.3	98.0	98.3	23	09/12	

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
(Washington Calculation)**

Date 9/13/2019 8:15:12 AM

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Total Dissolved Gas Data at Lower Snake Sites

Date	Little Goose				L. Goose Tlwr				Lower Mon.				Lwr. Mon. Tlwr				Ice Harbor				Tlwr Ice Harbor				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	104.7	106.5	106.2	24	108.5	109.0	109.4	24	106.0	106.6	107.4	24	110.2	110.6	111.2	24	107.6	108.1	108.0	24	106.9	107.1	107.3	24	08/30
08/31	105.1	105.4	106.9	24	108.2	108.7	109.2	24	106.4	106.6	107.5	24	110.0	110.5	110.5	15	108.3	108.7	108.9	24	107.3	107.5	107.7	24	08/31
09/01	105.4	105.7	107.0	24	106.0	108.3	107.4	24	106.1	106.6	106.9	24				0	108.8	108.9	109.3	24	107.4	107.6	107.8	24	09/01
09/02	105.9	106.2	106.4	24	105.9	106.4	106.7	24	105.4	105.8	106.0	24				0	108.4	108.8	108.8	24	107.2	107.6	107.5	24	09/02
09/03	106.0	106.4	106.6	24	105.6	106.2	106.6	24	106.2	106.6	107.1	24	107.5	109.9	112.3	14	108.0	108.4	109.0	24	108.2	109.1	109.8	24	09/03
09/04	105.0	106.1	105.4	24	104.5	105.8	105.2	24	105.1	106.6	106.2	24	105.0	106.7	106.0	24	107.8	108.1	108.4	24	108.1	109.0	109.4	24	09/04
09/05	105.6	106.3	106.3	12	105.5	107.2	110.5	24	105.2	105.2	105.5	10	105.1	106.1	107.2	24	107.7	108.1	108.3	24	108.2	109.0	109.5	24	09/05
09/06				0	104.4	107.1	105.0	24				0	104.4	105.5	105.4	24	106.8	107.5	107.2	24	110.5	112.5	114.6	24	09/06
09/07				0	103.8	104.5	105.1	24				0	104.7	105.6	106.2	24	105.6	106.6	106.3	24	119.6	122.1	124.1	24	09/07
09/08				0	100.5	104.1	102.5	24				0	103.6	105.5	105.0	24	104.4	105.8	105.7	24	127.2	129.0	130.0	24	09/08
09/09				0	99.6	100.0	101.9	24				0	102.8	103.4	105.2	24	103.8	104.2	104.2	24	113.0	130.6	131.7	24	09/09
09/10				0	99.6	100.3	100.7	24				0	102.4	103.3	103.4	24	102.9	103.7	103.7	24	103.7	104.1	104.6	24	09/10
09/11				0	98.4	100.0	99.2	24				0	101.4	102.4	102.2	24	101.0	102.3	102.0	24	102.3	103.7	103.7	24	09/11
09/12				0	98.0	98.8	99.1	23				0	100.4	101.0	101.3	23	101.2	101.7	101.7	8	101.8	102.4	103.0	23	09/12

Total Dissolved Gas Data at Mid-Columbia Sites

Date	McNary-Wash.				Tlwr McNary				John Day				Tlwr John Day				The Dalles				Dnstr T. Dalles				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	104.1	104.4	104.5	24	114.1	114.8	115.8	24	103.8	104.1	104.5	24	113.9	114.6	114.7	24	107.1	109.2	108.1	24	113.7	115.4	114.7	24	08/30
08/31	104.3	104.4	104.9	24	114.1	114.8	114.8	24	104.4	104.9	105.3	24	113.6	114.2	114.1	24	106.6	107.3	107.7	24	113.7	114.3	114.8	24	08/31
09/01	103.7	104.4	104.7	24	104.9	114.1	113.5	24	104.5	104.9	105.5	24	103.9	113.2	107.9	24	107.0	107.4	107.4	24	108.9	114.1	113.7	24	09/01
09/02	102.6	103.2	103.3	24	103.2	104.0	104.1	24	104.6	105.2	106.0	24	104.2	104.8	105.2	24	106.0	107.3	107.0	24	107.7	108.1	108.3	24	09/02
09/03	103.3	103.8	104.7	24	103.5	104.0	104.4	24	105.0	105.3	105.7	24	104.3	104.7	105.0	24	103.4	105.3	104.2	24	104.9	107.5	105.8	24	09/03
09/04	103.7	104.1	104.5	24	103.9	104.4	104.9	24	105.1	105.6	106.1	24	104.0	104.6	104.9	24	103.5	103.8	104.1	24	104.7	105.1	105.4	24	09/04
09/05	104.0	104.4	105.4	24	103.6	104.4	104.9	24	105.3	105.7	106.9	24	104.4	104.6	105.0	24	103.6	104.1	104.4	24	104.9	105.1	105.3	24	09/05
09/06	104.4	105.1	105.5	24	103.2	103.9	103.6	24	105.5	105.9	106.9	24	104.4	104.7	104.9	24	103.8	104.2	104.1	24	105.1	105.2	105.4	24	09/06
09/07	104.5	105.6	106.9	24	103.4	104.0	104.4	24	105.8	106.3	107.2	24	104.9	105.5	106.1	24	104.0	104.3	104.7	24	105.2	105.6	106.0	24	09/07
09/08	103.1	105.6	104.8	24	102.3	104.0	103.5	24	104.8	106.2	105.7	24	103.3	105.1	104.0	24	103.2	104.3	103.8	24	105.0	105.4	105.7	24	09/08
09/09	102.1	102.7	102.4	24	101.7	102.4	104.0	24	104.0	104.4	104.5	24	103.0	103.4	104.3	24	102.0	102.8	102.4	24	104.3	104.8	105.0	24	09/09
09/10	101.7	102.2	102.2	24	101.3	101.9	101.8	24	103.5	104.2	103.9	24	102.5	103.3	103.5	24	101.6	101.9	102.0	24	103.6	104.4	104.8	24	09/10
09/11	101.2	101.5	101.3	9	100.5	101.4	101.6	24	102.4	103.4	102.8	24	101.2	102.6	101.8	24	101.3	101.8	101.5	24	103.1	103.8	104.2	24	09/11
09/12				0	101.0	101.4	101.9	22	102.1	102.5	102.8	22	101.8	102.2	102.5	22	101.4	101.9	102.4	22	102.9	103.2	103.4	22	09/12

FISH PASSAGE CENTER

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
(Washington Calculation)**

[INTERNAL PURPOSES ONLY]

Date 9/13/2019 8:15:12 AM

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Total Dissolved Gas Data at Mid-Columbia Sites

Date	Bonneville				Warrendale				Camas\Washug.				Cascade Isld.				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
08/30	108.4	109.6	109.6	24	116.3	116.8	116.9	24	114.5	115.4	116.2	24	114.5	116.9	117.0	24	08/30
08/31	107.7	108.2	107.9	24	116.1	116.5	117.0	24	115.0	115.7	116.3	24	114.0	114.8	114.9	24	08/31
09/01	106.7	107.7	107.1	24	109.2	116.1	115.8	24	114.2	115.8	115.4	24	111.7	115.1	117.3	24	09/01
09/02	106.4	106.8	107.0	24	106.7	107.1	107.4	24	107.0	113.7	110.1	24	112.8	114.8	123.7	24	09/02
09/03	106.3	106.5	106.9	24	106.7	107.1	107.5	24	106.0	106.7	107.2	24	113.3	118.4	121.8	24	09/03
09/04	104.8	106.5	106.3	24	105.5	106.8	106.3	24	105.2	106.6	106.5	24	113.2	115.9	121.9	24	09/04
09/05	103.6	104.2	104.0	24	104.5	105.0	105.4	24	104.5	106.0	105.8	24	113.4	118.3	122.5	24	09/05
09/06	102.1	103.5	103.0	24	103.1	104.6	103.5	24	103.4	104.5	104.1	24	111.7	115.8	118.8	24	09/06
09/07	102.0	102.1	102.4	24	102.5	102.9	103.2	24	102.1	103.7	103.3	24	111.5	114.7	120.5	24	09/07
09/08	101.1	102.0	101.6	24	102.1	102.5	102.8	24	101.5	101.8	101.8	24	112.2	117.0	122.0	24	09/08
09/09	100.5	101.0	100.8	24	101.6	102.0	102.2	24	101.1	101.8	101.8	24	109.4	111.8	113.7	24	09/09
09/10	100.5	100.6	100.8	24	101.6	102.0	102.5	24	100.8	101.1	101.2	24	109.1	109.9	115.7	24	09/10
09/11	100.1	100.5	100.7	24	101.2	101.7	102.1	24	100.7	101.0	101.3	24	109.9	112.0	117.4	24	09/11
09/12	100.9	101.2	101.7	22	102.1	102.9	104.1	22	101.3	101.9	102.4	22	111.5	114.2	117.5	22	09/12

Hours used in calculating values:

24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/13/2019 7:16:10 AM

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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)
08/30/2019					6	0	0	0		0	
08/31/2019					0	0	0	0	0		0
09/01/2019					2	0	0				
09/02/2019					0	0	0		0		0
09/03/2019					1	0	0			0	
09/04/2019					1	0	0		0		0
09/05/2019					0	0	0				
09/06/2019					1	0	0		0	0	0
09/07/2019					3	0	0				
09/08/2019					1	0	0		0		0
09/09/2019					2	0	0				
09/10/2019					0	0	0		0	0	0
09/11/2019					0	0	0				
09/12/2019					0	0	0		0		0
09/13/2019											
Total:	0	0	0	0	17	0	0	0	0	0	0
# Days:	0	0	0	0	14	14	14	2	7	4	7
Average:	0	0	0	0	1	0	0	0	0	0	0
YTD:	16,130	22,180	12,656	5,063	2,955,572	2,007,537	1,697,396	18,809	825,244	701,920	1,764,794

Number of hours sampled:

- No data available or no sample conducted

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/13/2019 7:16:10 AM

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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)
08/30/2019					446	112	73	6		23	
08/31/2019					367	213	11	4	108		39
09/01/2019					187	232	35				
09/02/2019					105	246	54		52		85
09/03/2019					132	264	91			10	
09/04/2019					93	210	94		53		94
09/05/2019					112	249	48				
09/06/2019					149	252	19		36	5	59
09/07/2019					191	188	38				
09/08/2019					228	221	48		28		20
09/09/2019					197	119	35				
09/10/2019					183	71	24		36	5	21
09/11/2019					165	52	41				
09/12/2019					140	51	33		12		184
09/13/2019											
Total:	0	0	0	0	2,695	2,480	644	10	325	43	502
# Days:	0	0	0	0	14	14	14	2	7	4	7
Average:	0	0	0	0	193	177	46	5	46	11	72
YTD:	1	4	9	1,070	679,691	532,874	354,546	14,978	531,395	506,740	3,463,552

Number of hours sampled:

- No data available or no sample conducted

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/13/2019 7:16:10 AM

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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)
08/30/2019					0	0	0	1		0	
08/31/2019					0	0	0	0	0		0
09/01/2019					0	0	0				
09/02/2019					0	0	0		0		11
09/03/2019					0	0	0			0	
09/04/2019					0	0	0		0		0
09/05/2019					0	0	0				
09/06/2019					0	0	0		0	0	0
09/07/2019					0	0	0				
09/08/2019					0	0	0		0		0
09/09/2019					0	0	0				
09/10/2019					0	0	0		0	0	0
09/11/2019					0	0	0				
09/12/2019					0	0	0		0		0
09/13/2019											
Total:	0	0	0	0	0	0	0	1	0	0	11
# Days:	0	0	0	0	14	14	14	2	7	4	7
Average:	0	0	0	0	0	0	0	1	0	0	2
YTD:	0	0	1,565	87	119,646	95,249	46,021	46,937	57,824	71,452	535,732

Number of hours sampled:

- No data available or no sample conducted

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/13/2019 7:16:10 AM

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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)
08/30/2019					0	0	0	0		0	
08/31/2019					0	3	0	0	0		0
09/01/2019					3	1	0				
09/02/2019					0	1	0		4		0
09/03/2019					0	0	0			0	
09/04/2019					2	1	0		0		0
09/05/2019					1	0	0				
09/06/2019					0	0	0		0	0	0
09/07/2019					0	0	0				
09/08/2019					1	1	0		4		0
09/09/2019					1	0	0				
09/10/2019					0	1	0		0	0	0
09/11/2019					0	0	0				
09/12/2019					0	0	0		0		0
09/13/2019											
Total:	0	0	0	0	8	8	0	0	8	0	0
# Days:	0	0	0	0	14	14	14	2	7	4	7
Average:	0	0	0	0	1	1	0	0	1	0	0
YTD:	884	15,707	4,137	1,155	4,386,498	2,941,411	2,461,590	9,870	431,131	824,766	473,503

Number of hours sampled:

- No data available or no sample conducted

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/13/2019 7:16:10 AM

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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)
08/30/2019					0	0	0	1		0	
08/31/2019					0	0	0	0	0		0
09/01/2019					0	1	0				
09/02/2019					0	1	0		0		0
09/03/2019					0	0	0			0	
09/04/2019					0	0	0		0		0
09/05/2019					0	0	0				
09/06/2019					0	0	0		0	0	0
09/07/2019					0	0	0				
09/08/2019					0	2	0		0		0
09/09/2019					1	1	0				
09/10/2019					0	0	0		4	0	0
09/11/2019					0	1	0				
09/12/2019					1	1	0		0		0
09/13/2019											
Total:	0	0	0	0	2	7	0	1	4	0	0
# Days:	0	0	0	0	0	1	0	1	1	0	0
Average:	0	0	0	0	0	1	0	1	1	0	0
YTD:	1	0	0	506	73,726	52,408	63,511	7,401	166,189	89,744	158,595

Number of hours sampled:

- No data available or no sample conducted

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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Smolt Monitoring Program Two Week Passage Index Report

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COMBINED LAMPREY JUVENILES

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR* (Sample)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/30/2019					8	5	0	4		0	
08/31/2019					2	3	0	0	20		5
09/01/2019					4	2	0				
09/02/2019					0	3	0		16		10
09/03/2019					3	3	0			0	
09/04/2019					0	7	0		8		0
09/05/2019					3	3	0				
09/06/2019					0	6	0		16	0	14
09/07/2019					6	7	0				
09/08/2019					0	9	0		4		0
09/09/2019					2	10	0				
09/10/2019					2	6	0		4	0	0
09/11/2019					4	6	0				
09/12/2019					0	6	0		28		0
09/13/2019											
Total:	0	0	0	0	34	76	0	4	96	0	29
# Days:	0	0	0	0	18	21	14	2	7	4	7
Average:	0	0	0	0	2	4	0	2	14	0	4
YTD:	2	67	98		613	24,534	67,369	509	189,519	178,367	104,802

- No data available or no sample conducted

- 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.

Number of hours sampled:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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Smolt Monitoring Program Two Week Passage Index Report

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Smolt Monitoring Program Sites and Agency Collaborations:

- 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
- LGS (Index) - Little Goose Bypass Collection System : Passage Index Counts
- LMN (Index) - Lower Monumental Dam Bypass Collection System : Passage Index Counts
- RIS (Index) - Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
- MCN (Index) - McNary Dam Bypass Collection System : Passage Index Counts
- JDA (Index) - John Day Dam Bypass Collection System : Passage Index Counts
- BO2 (Index) - Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

- No data available or no sample conducted

Number of hours sampled:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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Important Information About this Report:

- For clip information see: <http://www.fpc.org/currentdaily/smpcomments.htm>
- 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. Equations for passage index are provided below for each site.
 - LGR, LGS, LMN, MCN, JDA (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts Passage Index = Collection Counts / (Powerhouse Flow / (Powerhouse Flow + Spill))
 - RIS, BO2 (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts Passage Index = Collection Counts / (Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill))
- 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.
- 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.

FISH PASSAGE CENTER

Two Week Transportation Summary Report

8/30/2019 12:00:00 AM TO 9/13/2019 12:00:00 AM

Date 9/13/2019 7:17:36 AM

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Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	2,220	13	0	2	7	2,242
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	0	0	0	0	6	6
Sum of Number Trucked	2,204	13	0	2	0	2,219
Sum of Sample Morts	15	0	0	0	1	16
Sum of Facility Morts	1	0	0	0	0	1
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	16	0	0	0	1	17

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	2,297	0	0	7	7	2,311
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	1	0	0	0	0	1
Sum of Number Trucked	2,227	0	0	3	7	2,237
Sum of Sample Morts	45	0	0	3	0	48
Sum of Facility Morts	24	0	0	1	0	25
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	69	0	0	4	0	73

FISH PASSAGE CENTER

Two Week Transportation Summary Report

8/30/2019 12:00:00 AM TO 9/13/2019 12:00:00 AM

Date 9/13/2019 7:17:36 AM

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Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	595	0	0	0	0	595
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	588	0	0	0	0	588
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	5	0	0	0	0	5
Sum of Facility Morts	2	0	0	0	0	2
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	7	0	0	0	0	7

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	5,112	13	0	9	14	5,162
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	589	0	0	0	6	601
Sum of Number Trucked	4,431	13	0	5	7	4,463
Sum of Sample Morts	65	0	0	3	1	70
Sum of Facility Morts	27	0	0	1	0	28
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	92	0	0	4	1	98

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 9/13/2019 7:17:12 AM

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Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	432657	1866557	77392	49630	2730582	5156818
Sum of Number Barged	375240	1258040	56679	49346	1360137	3099442
Sum of Number Bypassed	44318	606527	20623	150	1370166	2041784
Sum of Number Trucked	12015	225	5	3	5	12253
Sum of Sample Morts	197	44	1	1	24	267
Sum of Facility Morts	887	1706	84	130	225	3032
Sum of Reseach Morts	0	15	0	0	25	40
Sum of Total Project Mort	1084	1765	85	131	274	3339

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	321141	1158140	55910	30932	1702659	3268782
Sum of Number Barged	283249	943186	52730	30724	1027508	2337397
Sum of Number Bypassed	16238	212682	3062	40	674797	906819
Sum of Number Trucked	20961	1	12	9	127	21110
Sum of Sample Morts	200	40	10	6	11	267
Sum of Facility Morts	493	2231	96	153	216	3189
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	693	2271	106	159	227	3456

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 9/13/2019 7:17:12 AM

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Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	223121	1176566	30700	44108	1655432	3129927
Sum of Number Barged	218639	818457	27126	43977	1027465	2135664
Sum of Number Bypassed	4159	357066	3570	128	627715	992638
Sum of Number Trucked	72	0	0	0	2	74
Sum of Sample Morts	44	15	1	0	14	74
Sum of Facility Morts	207	1028	3	3	236	1477
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	251	1043	4	3	250	1551

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	976919	4201263	164002	124670	6088673	11555527
Sum of Number Barged	877128	3019683	136535	124047	3415110	7572503
Sum of Number Bypassed	64715	1176275	27255	318	2672678	3941241
Sum of Number Trucked	33048	226	17	12	134	33437
Sum of Sample Morts	441	99	12	7	49	608
Sum of Facility Morts	1587	4965	183	286	677	7698
Sum of Reseach Morts	0	15	0	0	25	40
Sum of Total Project Mort	2028	5079	195	293	751	8346

Cumulative Adult Passage at Mainstem Dams Through: 09/12

dam	enddate	Spring Chinook						Summer Chinook						Fall Chinook					
		2019		2018		10-Yr Avg.		2019		2018		10-Yr Avg.		2019		2018		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	09/12	54657	6728	87894	6456	148623	24719	51050	8885	61057	4349	100070	21076	138450	21677	117609	15827	314804	41772
TDA	09/12	38008	5796	57935	4793	115472	20593	42648	7497	49296	3787	82960	16728	60748	9580	62155	7835	159410	28054
JDA	09/10	35134	6000	50572	5053	100594	19392	39000	8116	42835	4293	73478	15838	27595	5409	42290	5794	88480	17262
MCN	09/12	31650	5142	44427	3472	92034	15431	37911	6393	42649	2513	70498	11599	23256	4214	37742	3657	74635	11511
IHR	09/12	21594	3619	32600	2197	66058	10645	4243	1606	5808	560	17319	4380	5641	1366	9953	1318	17840	5370
LMN	09/12	21790	4404	35398	3020	66187	10631	3408	1984	6143	717	17533	5796	5158	1637	9389	1795	14391	5265
LGS	09/12	20732	3850	31834	2486	62132	11577	5112	1661	7458	589	17998	6006	4645	1028	7996	1009	12648	3643
LGR	09/12	19155	3870	31161	2948	60949	12208	4461	2131	7304	819	15867	6443	3862	969	6963	891	9778	3202
PRD	09/11	8109	633	7067	949	17545	1894	37960	3103	40076	2269	60094	3002	6509	942	5763	842	11229	2194
WAN	09/11	8117	525	8071	964	16932	2151	40169	2650	37808	1450	56803	2320	3752	677	3354	758	5574	1306
RIS	09/11	8788	783	7894	997	17793	2585	41090	1705	38816	1646	59723	4848	3327	211	2471	439	4354	2096
RRH	09/11	6533	387	5919	807	8380	1199	38090	1142	33110	1106	48203	3356	2466	173	1808	360	3351	1304
WEL	09/11	8059	677	7499	977	9149	1660	23290	1798	22141	1101	37862	3542	1085	109	573	110	1355	427
WFA	09/11	18882	1735	24543	1999	36843	1856	0	0	0	0	0	0	114	26	532	65	450	91

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2019		2018		10-Yr Avg.		2019	2018	10-Yr Avg.	10-Yr Unclipped		Unclipped		10-Yr Avg.	2019	2018	10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack				2019	2018	2019	2018					
BON	09/12	20227	2237	18910	3075	39421	2582	63047	193816	319966	61391	79625	243232	32133	27861	87743	19342	43350	33098
TDA	09/12	2957	1020	9455	978	12548	1761	50678	152077	271087	27107	38907	146335	14641	13202	54128	4130	10366	9752
JDA	09/10	1045	334	6535	833	5733	910	52515	168466	262233	12380	25004	103737	7368	9522	38717	4553	8321	7230
MCN	09/12	397	180	3913	263	3228	522	51557	155474	231249	10575	21888	84020	6020	8186	30081	972	1478	1255
IHR	09/12	13	20	37	9	191	38	318	382	943	5531	10560	51090	2533	3116	14533	260	976	512
LMN	09/12	3	2	39	17	92	25	195	398	1082	5289	9409	48252	2598	3307	15241	170	415	143
LGS	09/12	2	2	10	1	74	21	82	280	1016	3824	6591	33801	1822	2290	11673	48	84	92
LGR	09/12	0	0	3	0	8	0	81	273	1022	5658	8664	31717	2922	2926	11552	92	206	55
PRD	09/11	13	3	523	35	487	80	45225	189883	270336	1928	2686	10903	0	0	0	3011	11116	6870
WAN	09/11	7	0	474	46	260	53	53889	196181	241470	1875	2275	9812	0	0	0	2599	8172	5810
RIS	09/11	20	0	500	1	177	33	58547	171957	261735	2154	2364	8962	1375	1206	3955	885	4564	3393
RRH	09/11	5	2	74	0	15	2	50436	162639	220929	1454	1672	6472	874	796	2723	765	4821	3687
WEL	09/11	3	9	14	0	1	0	49817	153577	208305	1123	1303	4556	769	653	1920	14	168	4
WFA	09/11	42	29	76	197	621	261	0	0	0	8248	10744	20014	3367	2169	191	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.