



Fish Passage Center

Weekly Report #18-27

September 7, 2018

Starting September 7, the weekly reports will be published every other week; the next report will be September 21.

This Week's Highlights

Water Supply

Precipitation throughout the Columbia Basin has varied between 0% and 31% of average at individual sub-basins over September. Precipitation above The Dalles has been 16% of average over September. Over the 2018 water year, precipitation has ranged between 85% and 107% of average.

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

Location	Water Year 2018		Water Year 2018	
	September 1-5, 2018		October 1, 2017 to September 5, 2018	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.11	31	34.1	94
Snake River Above Ice Harbor	0.00	0	19.5	89
Columbia Above The Dalles	0.04	16	23.8	90
Kootenai	0.07	19	33.0	91
Clark Fork	0.00	0	28.0	104
Flathead	0.00	0	34.6	100
Pend Oreille River Basin above Waneta Dam	0.00	0	31.3	99
Salmon River Basin	0.00	0	25.9	93
Upper Snake Tributaries	0.00	1	23.8	92
Clearwater	0.00	0	42.4	107
Willamette River above Portland	0.00	0	54.4	85

Grand Coulee Reservoir is at 1279.7 feet (9-6-18) and

has refilled 0.7 feet over the last week. Outflows at Grand Coulee have ranged between 61.9 Kcfs and 74.6 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2443.2 feet (9-6-18) and has drafted 0.5 foot over the past week. Daily average outflows at Libby Dam have been 6-8 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3553.1 feet (9-6-18) and has drafted 0.7 feet last week. Outflows at Hungry Horse have been 2.3-2.4 Kcfs over the last week.

Dworshak is currently at an elevation of 1530.2 feet (9-6-18) and has drafted 3.7 feet last week. Dworshak outflows have been 5.4-6.9 Kcfs.

The Brownlee Reservoir was at an elevation of 2048.1 feet on September 6th, 2018 and has drafted 3.0 feet. Outflows at Hells Canyon have ranged between 9.2 and 18.7 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 4th, 2018), the flow objective this spring was 100 Kcfs at Lower Granite. Flows at Lower Granite Dam averaged 111.3 Kcfs over the spring season. The summer biological flow period began on June 21st, 2018 at Lower Granite (Flow Objective = 53.3 Kcfs), flows averaged 37.5 Kcfs over the summer period.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objective is 260 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Flows at McNary averaged 343.0 Kcfs over the season. The summer flow period began on July 1, 2018 at McNary Dam, with a flow objective of 200 Kcfs. Over the summer period, flows averaged 161.9 Kcfs at McNary.

Spill

Flows in the Lower Snake River this week were similar to the previous week. Daily average flows at Lower Granite Dam ranged from 21.7 to 32.0 Kcfs this week. When compared to the previous week, flows in the mid-and Upper Columbia River decreased this week. Daily average flows at McNary and Rock Island dams ranged from 100.4 to 113.6 Kcfs and 66.1 to 88.3 Kcfs this week, respectively. Current forecasts show flows in the 21.5 to 26.5 Kcfs range at Lower Granite Dam and 85.0 to 102.0 Kcfs range at McNary Dam over the next week.

The 2018 spill for fish passage program at the lower Snake River and Mid-Columbia FCRPS projects began just after midnight on April 3rd and April 10th, respectively. Spring spill operations at these projects ran through June 15th in the Mid-Columbia and June 20th in the Snake River. Summer spill operations began on June 16th in the Mid-Columbia and June 21st in the Snake River and, per the Fish Operations Plan, ran through August 31st at all projects.

Temperature

With the termination of the summer spill program, the total dissolved gas (TDG) monitors in the forebays of FCRPS projects will be removed over the next couple of weeks. Therefore, temperature data from these monitors will no longer be available. The last available daily average temperature for the Lower Granite and Ice Harbor forebays is from September 3rd. These daily average temperatures were 66.3 °F at Lower Granite and 68.6 °F at Ice Harbor. The last available daily average temperature for the McNary forebay was 68.5 °F on September 4th. Finally, the Bonneville forebay monitor is still providing data. The daily average temperature for this monitor on September 6th was 67.5 °F.

Smolt Monitoring

Smolt Monitoring Program (SMP) activities continued at all FCRPS bypass facilities this week. Sampling at Rock Island Dam has ended for the 2018 season. This week's samples were dominated by subyearling Chinook at all six FCRPS bypass facilities.

This week's samples at BON were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 180 per day, which is similar to last week's daily average passage index. No spring migrants were encountered

in this week's samples. Pacific lamprey ammocoetes were encountered in two of this week's samples but no macrophthalmia were encountered this week.

Sampling at John Day Dam (JDA) transitioned from the high temperature protocol (i.e., 6-hour sample, twice per week) to normal sampling (i.e., 24-hour sample every-other-day). The first sample under the normal sampling protocol occurred on September 2nd. The only salmonids that were encountered in this week's samples were subyearling Chinook. This week's daily average passage index for subyearling Chinook was nearly 100 per day. Finally, no lamprey juveniles were encountered at JDA this week.

Subyearling Chinook dominated this week's samples at McNary Dam (MCN). 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 250 per day. No other salmonids were encountered in this week's samples. Pacific lamprey macrophthalmia were encountered in two of this week's four samples but no ammocoetes were encountered this week.

Since the transition from barging to trucking, samples from Lower Granite Dam (LGR) may be held for up to 48-hours before being enumerated. Therefore, data from LGR may be delayed for 1-2 days over the remainder of the season. To date, the FPC has data from LGR through the sample on September 5th. Subyearling Chinook continued to dominate the samples at LGR this week. This week's daily average passage index for subyearling Chinook was about 70 per day, which is a decrease from last week's daily average passage index of about 560 per day. Very few spring migrants were encountered in this week's samples. Pacific lamprey macrophthalmia were encountered in two of this week's samples while Pacific lamprey ammocoetes were encountered in three of this week's samples.

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 150 per day, which is a slight increase from last week's daily average passage index of about 110 per day. The only spring migrants that were encountered in this week's samples were sockeye, which were encountered in one of this week's samples (September 2nd). Pacific lamprey macrophthalmia were encountered in six of this week's samples and

ammocoetes were encountered in four of this week's samples.

Similar to LGR, samples from Lower Monumental Dam (LMN) are held for up to 48-hours before being enumerated, due to the transition to trucking. Therefore, data from LMN may be delayed for 1-2 days over the remainder of the season. To date, the FPC has data from LGR through the sample on September 5th. This week's samples at LMN were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 35 per day, which is a slight increase from last week's daily average passage index of about 25 per day. No spring migrants were encountered in this week's samples. Finally, Pacific lamprey macrophthalmia were encountered in one of this week's samples while Pacific lamprey ammocoetes were encountered in three of this week's samples.

Hatchery Releases

FPC has not received all data from some hatcheries as of 09/07/18, 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. In the past week there were no scheduled releases into this zone, nor are there any scheduled for the next two.

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, nor are there any scheduled for the next two.

Adult Passage

Adult Passage Daily passage numbers at Bonneville Dam ranged between 4,326 and 6,982 adult Chinook in the last week. The 2018 Bonneville Dam adult fall Chinook count of 87,040 is about 1.2 times greater than the 2017 count, while being 44% of the 10-year average. At Willamette Falls, 414 adult fall Chinook have been counted so far this year. In 2017, 34 adult fall Chinook were counted at Willamette Falls. As of September 6th, a total of 22,274 adult fall Chinook have been counted at McNary Dam and 3,290 have been counted at Lower Granite Dam. The 2018 McNary Dam adult fall Chinook count is about 2 times greater than the 2017 count, while being 60.2% of the 10-year average count.

The 2018 Bonneville Dam adult steelhead count of 72,721 is about 89.6% the 2017 count of 81,158 and about 29.3% of the 10-year average count of 248,006. The 2018 Bonneville Dam adult unclipped steelhead count of 26,400 is about 95.8% of the 2017 count of 27,547 and about 29.3% of the 10-year average count of 90,041. Daily adult steelhead counts at Lower Granite Dam ranged from 40 to 104 adults per day last week. This year's Lower Granite steelhead count of 6,851 is about 81.9% of the 2017 count of 8,360 and about 26.5% of the 10-year average count of 25,897. The 2018 Lower Granite Dam adult unclipped steelhead count of 2,415 is about 66% of the 2017 count of 3,657 and 24% of the 10-year average count of 10,073. At Willamette Falls, the 2018 count for steelhead was 10,705 as of September 6th. This year's steelhead count is about 3.9 times greater than the 2017 count of 2,731 while being 51.6% of the 10-year average count of 20,728.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 0 and 2 last week. The 2018 adult sockeye count at Bonneville Dam of 193,816 is about 2.2 times greater than the 2017 count, while being 60.2% of the 10-year average count. The 2018 adult sockeye count at McNary Dam of 155,472 is about 2.7 times greater than the 2017 count, while being 67.5% of the 10-year average count. The Lower Granite Dam 2018 adult sockeye count of 272 has 45 more fish than the 2017 count of 227 and 805 fewer fish than the

10-year average count of 1,077. The 2018 Bonneville Dam adult coho count of 13,847 is about 3.7 times greater than the 2017 count, while being 57.3% of the 10-year average count.

As of September 6th at Bonneville Dam, the adult shad count was 6,059,933. This year's shad count is about 1.9 times greater than the 2017 count of 3,135,401 and 2.9 times greater than the 10-year average count of 2,101,623. A total of 43,140 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2018 lamprey count is about 52.9% of the 2017 count of 81,534, while being about 1.4 times greater than the 10-year average count of 29,818.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: **8/24/2018** to **9/7/2018**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
No Planned Releases										
Grand Total					0					

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

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: **9/8/2018** to **9/21/2018**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
No Planned Releases										
Grand Total					0					

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/24/2018	110.8	0.1	111.2	0.0	111.5	3.3	107.0	0.0	109.9	0.0	107.6	2.0	102.0	1.7
08/25/2018	91.1	0.1	90.3	0.0	99.3	0.0	100.5	0.0	106.8	0.0	132.5	1.6	127.5	1.7
08/26/2018	75.0	0.1	72.4	0.0	76.7	0.0	74.9	0.0	77.7	0.0	83.4	1.2	80.4	1.7
08/27/2018	111.8	0.1	109.4	0.0	101.0	5.6	96.4	0.0	97.6	0.0	108.0	1.1	104.7	1.7
08/28/2018	103.5	0.1	104.9	0.0	104.4	3.4	106.5	0.0	110.7	0.7	125.7	1.2	119.5	1.7
08/29/2018	88.6	0.1	85.5	0.0	91.5	0.0	85.7	0.0	90.1	0.0	101.1	0.7	100.8	1.7
08/30/2018	90.0	0.1	92.0	0.0	87.9	0.8	84.0	0.0	87.7	0.0	68.9	1.0	66.4	1.7
08/31/2018	85.8	0.1	87.0	0.0	87.8	1.8	84.8	0.0	88.3	0.0	92.3	1.7	86.8	1.7
09/01/2018	74.6	0.1	77.0	0.0	80.9	7.5	76.5	0.0	78.8	0.0	71.4	1.8	68.6	1.8
09/02/2018	66.3	0.1	64.2	0.0	66.9	0.0	70.6	0.0	73.9	0.0	93.6	2.0	90.0	1.8
09/03/2018	61.9	0.1	63.7	0.0	68.8	0.0	65.2	0.0	66.1	0.0	74.6	1.5	72.1	1.8
09/04/2018	72.8	0.1	72.9	0.0	83.3	0.0	81.1	0.0	85.1	0.0	83.1	1.6	79.5	1.8
09/05/2018	73.3	0.1	72.9	0.0	71.7	0.0	71.0	0.0	73.2	0.0	89.7	1.6	85.8	1.7
09/06/2018	62.5	0.1	62.3	0.0	68.8	0.0	67.1	0.0	69.3	0.0	86.9	1.2	83.6	1.7

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill			Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/24/2018	7.6	0.0	---	---	26.2	12.6	23.7	8.6	21.8	8.4	24.3	14.4
08/25/2018	7.6	0.0	---	---	27.6	15.5	26.0	8.6	25.4	12.1	29.9	19.9
08/26/2018	7.6	0.0	---	---	28.6	20.2	27.4	8.7	26.6	13.1	29.5	19.5
08/27/2018	7.6	0.0	---	---	25.1	12.1	25.2	8.6	23.5	10.3	26.7	16.9
08/28/2018	7.6	0.0	---	---	26.1	13.3	23.6	8.7	22.5	9.1	27.7	17.7
08/29/2018	7.6	0.0	---	---	31.5	17.9	30.0	7.0	28.1	14.8	31.5	21.3
08/30/2018	7.6	0.0	---	---	29.7	15.5	28.5	10.1	26.9	13.6	31.3	21.2
08/31/2018	7.6	0.0	---	---	32.0	17.9	29.7	10.3	30.4	16.9	31.5	21.5
09/01/2018	6.9	0.0	---	---	27.0	0.0	25.9	0.0	25.7	0.0	26.7	0.0
09/02/2018	6.5	0.0	---	---	24.3	0.0	23.7	0.0	24.5	0.0	23.1	0.0
09/03/2018	6.2	0.0	---	---	21.7	0.0	21.3	0.0	21.9	0.0	23.4	0.0
09/04/2018	5.5	0.0	---	---	23.2	0.0	22.4	0.0	21.1	0.0	20.4	0.0
09/05/2018	5.5	0.0	---	---	24.7	0.0	23.2	0.0	21.6	0.0	20.9	0.0
09/06/2018	5.4	0.0	---	---	22.7	0.0	20.8	0.0	21.6	0.0	22.8	0.0

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
08/24/2018	128.4	64.4	123.5	37.1	116.4	46.3	139.3	95.3	0.0	31.6
08/25/2018	168.2	84.2	148.8	44.5	137.5	54.8	137.9	93.3	0.0	32.3
08/26/2018	149.8	75.2	153.4	45.9	141.7	56.6	161.5	96.0	0.0	53.2
08/27/2018	126.9	63.7	126.4	38.2	116.7	46.6	132.2	88.4	0.0	31.3
08/28/2018	137.2	68.9	125.1	37.5	114.8	45.9	126.2	82.9	0.0	30.9
08/29/2018	159.4	80.1	140.4	43.4	130.2	52.0	143.6	90.3	0.0	40.9
08/30/2018	133.3	67.0	129.3	38.8	121.2	48.3	138.2	94.9	0.0	30.9
08/31/2018	113.6	57.0	114.9	34.3	108.9	43.6	129.5	86.3	0.0	30.8
09/01/2018	104.5	0.1	98.1	0.9	100.8	0.0	100.8	1.5	0.0	91.9
09/02/2018	105.8	0.0	101.1	1.0	96.3	0.0	101.7	1.4	0.0	92.9
09/03/2018	100.4	0.0	98.0	1.0	94.6	0.0	100.7	1.3	0.0	92.0
09/04/2018	103.4	0.0	104.3	1.0	104.2	0.0	107.5	1.4	4.2	94.5
09/05/2018	105.8	0.0	96.2	0.9	99.0	0.0	108.0	1.4	0.7	98.5
09/06/2018	105.1	0.0	97.2	0.8	99.8	0.0	108.7	1.4	0.0	99.9

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 9/7/2018 7:15:10 AM

Page 1 of 4

Total Dissolved Gas Data at Upper Columbia Sites

Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph				Chief J. Dnst				Date	
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	Date
08/24									106.3	106.8	106.8	24	105.3	105.8	106.4	24	104.6	105.7	105.2	24	104.4	105.5	105.1	24	08/24
08/25									105.7	106.3	106.1	24	105.3	105.8	106.4	24	104.1	104.7	104.4	17	103.7	104.4	104.5	24	08/25
08/26									105.7	106.1	106.2	24	106.0	106.5	107.0	24	103.9	104.1	104.1	18	103.6	103.9	104.3	24	08/26
08/27									105.6	106.1	108.1	24	104.7	106.3	105.7	24	103.4	103.9	103.7	17	103.2	103.7	103.9	24	08/27
08/28									104.9	105.4	105.5	24	104.2	104.8	105.7	24	103.9	104.1	104.4	15	103.2	103.7	104.1	24	08/28
08/29									104.1	104.9	106.0	24	105.2	106.2	107.1	24	105.1	105.5	105.7	19	104.5	105.0	105.5	24	08/29
08/30									105.8	106.0	106.2	24	105.2	105.7	106.3	24	104.4	105.4	104.9	24	103.8	104.7	104.6	24	08/30
08/31									105.7	106.0	106.2	24	105.0	105.4	106.0	24	103.9	104.3	104.3	24	103.3	103.8	104.1	24	08/31
09/01									105.6	105.9	105.8	24	105.1	105.7	106.9	24	103.8	104.2	104.5	24	103.4	103.9	104.5	24	09/01
09/02									104.9	105.5	105.4	24	105.6	106.3	106.8	24	104.1	104.5	104.9	20	103.6	104.4	105.1	24	09/02
09/03									105.1	105.2	105.4	24	105.4	106.0	106.8	24	104.0	104.5	104.3	24	103.6	104.1	104.2	24	09/03
09/04									104.9	105.1	105.2	24	104.4	104.9	105.1	24	103.7	104.0	104.1	17	103.2	103.6	104.1	24	09/04
09/05									104.1	105.0	104.8	24	104.1	104.8	105.4	24	104.1	104.3	104.5	14	103.2	103.8	104.5	24	09/05
09/06									103.4	103.8	104.8	23	103.9	104.6	105.0	23	104.7	104.9	105.1	13	103.8	104.3	104.9	23	09/06

Total Dissolved Gas Data at Upper Columbia Sites

Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr				Rock Island				Rock I. Tlwr				Date	
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	Date
08/24	104.3	105.2	105.0	23	105.7	107.5	111.5	23	106.5	107.7	108.4	24	106.9	107.8	108.5	19	104.0	105.4	105.9	23	104.3	105.7	105.4	19	08/24
08/25	103.7	104.4	104.2	24	104.2	106.6	108.5	24	104.9	107.4	105.7	24	105.2	107.8	106.5	22	104.9	105.9	106.3	24	105.3	106.1	106.4	22	08/25
08/26	103.2	103.7	103.5	24	103.4	103.9	103.9	24	104.4	105.2	105.1	23	104.8	106.1	106.5	20	103.9	104.2	104.6	23	104.0	104.4	104.7	20	08/26
08/27	102.7	103.3	103.1	24	104.6	106.5	109.9	24	104.6	105.1	105.5	24	104.8	105.4	105.8	21	103.5	104.1	104.7	22	103.6	104.4	104.7	20	08/27
08/28	103.2	103.8	104.3	24	104.5	106.3	112.1	24	103.4	104.3	105.1	22	103.8	104.5	105.8	21	103.0	104.2	103.9	22	103.5	104.3	104.6	21	08/28
08/29	103.7	104.4	105.1	24	104.4	106.8	109.2	24	105.2	105.3	105.6	24	105.6	105.8	106.5	23	104.0	105.1	105.5	23	104.1	105.2	105.5	20	08/29
08/30	103.7	104.2	104.6	24	104.0	104.5	106.0	24	104.1	105.1	105.1	24	104.4	105.5	105.8	21	104.0	105.3	105.3	23	104.3	105.4	105.4	20	08/30
08/31	103.7	104.1	104.3	24	104.8	105.5	108.5	24	104.5	105.1	105.5	22	104.5	105.3	105.9	18	103.4	104.3	105.1	21	103.4	104.2	105.1	17	08/31
09/01	103.5	104.0	104.2	24	106.2	109.2	117.5	24	103.2	104.0	103.7	24	103.3	104.4	105.0	23	103.0	104.5	103.9	23	103.3	104.6	104.4	22	09/01
09/02	103.2	103.8	103.8	24	103.7	107.9	104.9	24	104.1	104.8	105.6	24	103.9	104.5	105.8	22	102.7	103.3	103.6	24	102.9	103.4	103.6	21	09/02
09/03	103.1	103.6	103.9	24	103.4	104.0	104.6	24	104.4	105.0	105.8	23	103.9	104.9	105.9	22	103.6	104.0	104.4	23	103.7	104.1	104.6	19	09/03
09/04	102.8	103.3	103.7	24	102.9	103.6	104.2	24	105.9	106.4	106.8	24	106.1	106.1	106.5	19	103.7	104.7	106.8	20	103.9	104.6	106.7	17	09/04
09/05	103.2	103.9	104.3	24	103.3	104.1	104.6	24	103.6	105.3	104.2	24	104.2	105.9	105.5	17	104.7	106.0	106.4	21	105.0	106.0	106.4	17	09/05
09/06	103.4	104.0	104.2	22	103.6	104.2	104.8	22	103.6	103.9	104.5	23	103.2	104.6	104.6	21	102.7	104.0	103.5	23	103.2	104.1	103.9	20	09/06

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 9/7/2018 7:15:10 AM

Page 2 of 4

Total Dissolved Gas Data at Upper and Mid-Columbia Sites

Wanapum				Wanapum Tlwr				Priest Rapids				Priest R. Dnstr				Pasco				Date	
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	Date
08/24	103.7	105.6	106.4	24	102.9	104.7	104.4	24	104.2	106.0	105.0	24	103.9	105.9	104.5	24					08/24
08/25	104.1	104.9	105.1	24	103.3	103.9	104.0	24	103.7	104.9	105.3	18	103.5	103.9	104.2	24					08/25
08/26	102.1	103.9	103.2	24	101.3	103.2	102.9	24				0	103.1	103.9	103.6	24					08/26
08/27	101.6	102.6	103.6	24	100.8	101.4	102.0	24				0	102.1	103.1	102.7	24					08/27
08/28	103.0	104.3	105.0	24	102.4	103.1	103.4	24				0	102.6	103.5	103.9	24					08/28
08/29	104.0	105.0	106.9	24	102.4	103.2	103.7	24				0	104.6	105.2	105.5	24					08/29
08/30	101.5	104.0	103.7	24	100.9	102.0	102.5	24				0	103.7	105.0	104.2	24					08/30
08/31	101.9	102.9	104.0	24	101.0	101.8	102.6	24				0	102.8	103.8	103.9	24					08/31
09/01	101.5	102.7	104.2	24	100.0	101.7	100.9	24				0	102.5	103.4	103.5	24					09/01
09/02	101.9	102.7	103.4	24	100.6	101.3	102.1	24				0	102.2	103.0	103.1	24					09/02
09/03	101.4	102.6	103.4	24	100.2	101.3	101.4	24				0	101.5	102.7	102.1	7					09/03
09/04	102.3	103.6	105.0	24	100.7	101.7	102.2	24				0				0					09/04
09/05				0				0				0				0					09/05
09/06				0				0				0				0					09/06

Total Dissolved Gas Data at Snake and Clearwater Sites

Dworshak				Clwrtr Peck				Anatone				Clwrtr-Lewiston				Lower Granite				Lower G. Tlwr				Date	
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	Date
08/24	102.2	102.5	102.9	24	102.6	103.8	104.9	24	101.0	102.3	103.1	24	102.6	104.4	105.7	24	99.9	101.1	100.2	24	108.4	108.9	109.8	24	08/24
08/25	102.0	102.4	102.7	24	102.2	103.5	104.6	24	101.1	102.3	103.3	24	102.4	104.1	105.5	24	100.1	100.4	100.9	24	108.2	108.7	109.2	24	08/25
08/26	101.9	102.2	102.2	24	101.6	103.0	102.3	24	100.6	101.9	101.3	24	101.2	103.8	102.1	24	100.9	101.0	101.2	24	112.6	115.4	116.2	24	08/26
08/27	101.8	102.1	102.4	24	101.7	102.3	103.2	24	100.1	100.8	100.8	24	101.0	101.6	102.5	24	100.0	100.9	100.8	24	108.3	110.2	108.6	24	08/27
08/28	101.5	101.8	102.2	24	101.8	102.9	104.0	24	101.3	102.7	103.9	24	102.4	104.4	106.0	24	99.6	100.1	100.7	24	109.2	109.4	111.2	24	08/28
08/29	102.2	102.7	103.1	24	102.4	103.7	104.8	24	102.1	103.3	104.6	24	102.8	104.7	106.2	24	99.6	100.0	100.2	24	112.4	112.8	113.1	24	08/29
08/30	102.0	102.5	102.5	24	102.0	103.3	103.6	24	101.4	103.0	102.8	24	102.0	104.3	104.6	24	98.3	99.8	99.2	24	110.5	112.6	112.3	24	08/30
08/31	101.7	102.0	102.4	24	102.0	103.2	104.4	24	101.6	102.8	104.2	24	102.6	104.4	106.0	24	97.5	98.1	98.2	24	112.1	112.4	112.6	24	08/31
09/01	101.7	102.1	102.6	24	102.0	103.3	104.5	24	101.6	102.7	104.0	24	102.6	104.4	106.1	24	98.5	98.9	99.2	24	99.2	112.3	110.7	24	09/01
09/02	102.5	102.9	103.5	24	102.4	103.8	105.0	24	101.5	102.8	104.2	24	102.6	104.6	106.3	24	99.1	99.5	99.7	24	98.3	98.8	99.1	24	09/02
09/03	103.2	103.6	104.1	24	102.9	104.3	105.6	24	101.4	102.5	103.7	24	102.8	104.7	106.4	24	99.0	99.6	99.8	24	98.8	99.4	99.9	24	09/03
09/04	101.6	103.3	102.6	24	102.0	103.8	104.5	24	101.4	102.7	104.0	24	101.5	105.0	105.4	14	98.3	99.1	99.1	9	98.7	99.5	99.8	24	09/04
09/05	101.6	102.1	102.7	24	100.8	103.3	103.3	13	100.4	102.3	100.4	4				0				0	99.8	100.8	101.3	24	09/05
09/06	101.6	102.0	102.5	23				0				0				0				0	99.7	100.7	101.0	23	09/06

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 9/7/2018 7:15:10 AM

Page 3 of 4

Total Dissolved Gas Data at Lower Snake Sites

Little Goose				L. Goose Tlwr				Lower Mon.				Lwr. Mon. Tlwr				Ice Harbor				Tlwr Ice Harbor				Date	
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	Date
08/24	106.3	107.5	107.7	24	108.4	109.3	109.2	24	106.5	107.0	106.9	24	109.6	110.5	112.2	24	107.6	108.5	108.2	24	119.9	139.8	140.3	24	08/24
08/25	105.6	106.1	106.2	24	108.4	108.7	109.1	24	107.0	107.0	107.2	24	112.8	113.3	113.8	24	107.2	107.5	107.6	24	110.6	112.1	113.4	24	08/25
08/26	105.3	105.5	105.6	24	108.2	108.5	108.7	24	107.1	107.2	107.4	24	113.2	114.0	115.5	24	107.1	107.3	107.7	24	110.6	112.6	114.5	24	08/26
08/27	104.2	105.4	105.6	24	108.1	108.5	108.7	24	106.0	107.2	107.1	24	111.6	113.7	113.4	24	106.9	107.2	107.5	24	109.5	112.5	113.6	24	08/27
08/28	104.1	104.3	104.6	24	108.6	109.3	109.6	24	105.4	105.8	106.3	24	110.7	111.3	111.8	24	106.5	106.8	107.3	24	108.7	109.8	110.6	24	08/28
08/29	104.8	105.2	105.7	24	107.7	109.1	108.4	24	105.8	106.2	106.4	24	113.7	115.9	116.5	24	107.0	107.1	107.7	24	110.7	112.6	114.2	24	08/29
08/30	103.1	105.2	104.4	24	108.2	108.9	109.2	24	105.3	106.2	106.1	24	113.3	115.4	114.8	24	106.9	107.2	107.7	24	110.7	113.4	113.4	24	08/30
08/31	103.3	103.9	104.5	24	108.2	108.8	109.1	24	105.2	105.4	105.8	24	114.8	115.2	115.9	24	106.7	107.0	107.9	24	111.4	113.1	114.1	24	08/31
09/01	104.6	105.3	106.3	24	104.5	108.8	108.6	24	105.5	105.6	105.7	24	106.1	114.8	114.5	24	106.4	107.0	106.7	24	107.7	109.3	108.7	24	09/01
09/02	105.5	106.2	106.6	24	104.5	105.2	105.8	24	105.0	105.5	105.8	24	105.3	106.1	106.9	24	107.1	107.4	107.7	24	107.8	108.7	109.2	24	09/02
09/03	105.7	106.3	107.1	24	104.4	105.2	104.9	24	103.7	105.2	104.7	24	104.0	105.7	105.1	24	107.3	108.0	108.7	24	108.2	109.0	109.8	24	09/03
09/04	105.1	106.2	106.6	24	103.9	104.5	104.9	24	104.1	104.2	104.5	24	104.1	104.8	105.4	24	107.3	108.0	107.5	11	108.0	109.3	110.2	22	09/04
09/05	105.1	105.9	106.6	24	104.2	105.1	105.5	24	105.1	105.8	106.4	24	104.6	105.8	106.8	24				0	109.2	110.0	110.9	24	09/05
09/06	106.4	106.9	107.5	23	104.9	105.8	106.0	23	105.1	105.8	107.2	23	104.8	105.9	106.5	23				0	109.4	110.1	110.6	23	09/06

Total Dissolved Gas Data at Mid-Columbia Sites

McNary-Wash.				Tlwr McNary				John Day				Tlwr John Day				The Dalles				Dnstr T. Dalles				Date	
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	Date
08/24	103.6	104.2	104.3	24	113.4	114.1	114.2	24	103.3	104.9	104.2	24	111.9	113.2	112.4	24	103.7	106.2	104.4	24	110.0	112.0	110.6	24	08/24
08/25	103.1	103.8	103.9	24	114.6	115.4	115.9	24	102.5	103.0	103.1	24	112.5	113.1	113.7	24	103.5	104.0	104.4	24	110.2	110.7	111.2	24	08/25
08/26	101.8	102.6	102.6	24	113.8	115.3	114.2	24	102.3	102.7	102.5	24	113.2	113.6	114.0	24	104.7	104.8	105.0	24	110.8	111.0	111.3	24	08/26
08/27	100.8	101.5	101.4	24	113.9	114.1	114.6	24	102.1	102.4	102.9	24	111.9	112.7	112.4	24	104.6	104.8	105.2	24	110.9	111.2	111.8	24	08/27
08/28	101.4	101.6	102.2	24	113.8	114.1	114.6	24	102.1	102.4	102.7	24	111.3	112.1	113.1	24	106.9	107.9	108.2	24	116.2	119.8	120.7	24	08/28
08/29	102.6	103.0	103.6	24	113.7	114.0	114.6	24	102.4	102.6	102.9	24	112.9	113.5	114.1	24	108.1	108.8	109.3	24	116.1	120.7	122.5	24	08/29
08/30	102.8	103.1	103.6	24	113.0	113.6	113.8	24	101.7	102.4	102.1	24	113.2	114.2	115.5	24	105.8	108.2	106.6	24	111.5	113.1	112.4	24	08/30
08/31	102.2	102.7	102.4	24	113.2	113.7	114.0	24	101.5	101.8	102.0	24	114.1	114.9	115.3	24	104.3	105.2	104.9	24	110.4	111.4	110.9	24	08/31
09/01	102.6	102.9	103.7	24	103.7	113.4	112.8	24	101.7	101.9	102.1	24	102.2	113.1	107.3	24	104.3	104.6	104.9	24	105.2	110.4	109.8	24	09/01
09/02	103.6	104.3	105.0	24	103.5	104.3	104.8	24	102.2	102.8	103.2	24	102.3	102.9	103.3	24	103.1	104.4	103.8	24	103.5	104.2	104.4	24	09/02
09/03	103.8	104.5	105.5	24	103.7	104.3	105.1	24	102.5	102.8	102.9	24	102.6	103.1	103.6	24	101.6	102.7	102.3	24	102.2	103.5	102.7	24	09/03
09/04	104.2	105.0	106.4	24	103.8	104.5	105.5	24	103.5	104.5	105.6	24	103.1	103.6	104.0	24	101.7	102.2	102.5	24	102.1	102.6	103.1	24	09/04
09/05	103.8	105.0	105.1	9	103.3	104.5	104.2	23	104.7	105.0	105.3	24	104.4	104.7	105.3	24	102.6	103.4	103.7	24	102.8	103.2	103.5	24	09/05
09/06				0	103.1	103.6	103.6	22	104.6	105.4	105.7	17	104.5	104.8	105.2	17	103.5	104.3	104.8	22	103.5	103.7	104.0	22	09/06

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 9/7/2018 7:15:10 AM

Page 4 of 4

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	
08/24	104.6	108.0	107.2	24	116.0	116.5	116.6	24	112.2	113.0	114.2	24	116.9	117.1	117.1	24	08/24
08/25	103.5	104.0	103.9	24	115.4	116.3	116.1	24	113.0	113.9	114.4	24	115.1	116.9	117.3	24	08/25
08/26	103.3	103.6	103.8	24	114.9	116.6	117.7	24	112.6	114.0	114.2	24	115.4	116.3	117.1	24	08/26
08/27	104.3	104.9	105.4	24	116.1	116.2	116.5	24	111.1	113.3	114.8	24	116.0	117.0	117.3	24	08/27
08/28	106.0	106.6	107.1	24	116.5	117.0	117.8	24	113.5	114.4	114.7	24	114.4	115.9	117.7	24	08/28
08/29	108.8	109.9	110.3	24	116.7	117.0	117.4	24	122.5	132.2	159.5	23	116.4	116.8	117.9	24	08/29
08/30	107.7	109.9	109.5	24	117.1	117.4	118.1	24	128.7	154.6	158.2	24	116.9	117.1	119.0	23	08/30
08/31	105.6	107.2	106.6	16	116.3	117.7	118.8	24	114.3	115.5	116.5	24	114.5	118.3	118.7	24	08/31
09/01				0	108.0	115.0	114.8	24	112.4	115.6	114.9	24	113.0	115.3	121.2	24	09/01
09/02				0	105.4	106.1	106.2	24	106.7	112.5	109.7	24	112.8	116.9	121.4	24	09/02
09/03				0	105.0	105.6	106.2	24	105.0	106.7	105.9	24	112.3	115.1	121.3	24	09/03
09/04				0	105.6	106.4	107.2	24	105.2	106.2	106.7	24	114.7	118.3	122.3	24	09/04
09/05	102.8	102.9	103.2	13	104.9	106.2	105.7	24	105.8	106.5	106.6	10	114.9	118.9	124.5	24	09/05
09/06	102.8	103.2	103.4	23	104.7	105.3	105.9	23	104.9	105.5	106.3	18	113.5	119.3	124.5	23	09/06

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
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 1 of 7

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)
08/24/2018					0	0	0	0		0	
08/25/2018					0	0	0	0	0		0
08/26/2018					0	0	0	0			
08/27/2018					0	0	0	0	0		0
08/28/2018					2	0	0	0		0	0
08/29/2018					0	0	0	0	0		0
08/30/2018					0	0	0	0			0
08/31/2018					0	0	0	0	0	0	0
09/01/2018					0	0	0				0
09/02/2018					0	0	0		0	0	0
09/03/2018					0	0	0				0
09/04/2018					0	0	0		0	0	0
09/05/2018					0	0	0				0
09/06/2018						0			0	0	0
09/07/2018											
Total:	0	0	0	0	2	0	0	0	0	0	0
# Days:	0	0	0	0	13	14	13	8	7	6	12
Average:	0	0	0	0	0	0	0	0	0	0	0
YTD:	23,452	41,212	21,824	12,792	4,639,019	2,838,053	2,045,317	49,702	1,494,206	1,257,455	1,890,717

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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 2 of 7

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)
08/24/2018					843	238	34	13		34	
08/25/2018					530	98	45	9	317		166
08/26/2018					495	73	23	10			
08/27/2018					722	43	6	9	183		223
08/28/2018					608	37	19	10		112	78
08/29/2018					460	111	21	12	241		122
08/30/2018					273	186	23	3			294
08/31/2018					110	214	15	4	109	32	310
09/01/2018					75	314	26				212
09/02/2018					45	196	19		192	81	224
09/03/2018					61	158	54				132
09/04/2018					69	109	35		156	182	152
09/05/2018					42	34	62				107
09/06/2018						56			104	86	131
09/07/2018											
Total:	0	0	0	0	4,333	1,867	382	70	1,302	527	2,151
# Days:	0	0	0	0	13	14	13	8	7	6	12
Average:	0	0	0	0	333	133	29	9	186	88	179
YTD:	0	6	89	192	874,458	940,314	508,253	36,289	2,288,811	1,068,380	2,880,806

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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 3 of 7

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)
08/24/2018					0	0	0	0		0	
08/25/2018					2	0	0	0	0		0
08/26/2018					3	0	0	0			
08/27/2018					3	0	0	0	0		0
08/28/2018					2	0	0	0		0	0
08/29/2018					0	0	0	0	0		15
08/30/2018					0	0	0	0			0
08/31/2018					0	0	0	0	0	0	0
09/01/2018					0	0	0				8
09/02/2018					0	0	0		0	0	0
09/03/2018					0	0	0				0
09/04/2018					0	0	0		0	0	0
09/05/2018					0	0	0				0
09/06/2018						0			0	0	0
09/07/2018											
Total:	0	0	0	0	10	0	0	0	0	0	23
# Days:	0	0	0	0	13	14	13	8	7	6	12
Average:	0	0	0	0	1	0	0	0	0	0	2
YTD:	0	0	1,224	1,365	262,530	215,275	42,479	44,218	226,511	120,100	477,487

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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 4 of 7

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)
08/24/2018					0	2	0	1		0	
08/25/2018					0	2	0	0	0		0
08/26/2018					0	0	0	0			
08/27/2018					0	0	0	0	0		0
08/28/2018					2	0	0	0		0	0
08/29/2018					0	0	0	0	0		0
08/30/2018					0	0	0	0			0
08/31/2018					0	0	0	1	0	0	0
09/01/2018					0	0	0				0
09/02/2018					1	0	0		0	0	0
09/03/2018					1	0	0				0
09/04/2018					0	0	0		0	0	0
09/05/2018					0	0	0				0
09/06/2018						0			0	0	0
09/07/2018											
Total:	0	0	0	0	4	4	0	2	0	0	0
# Days:	0	0	0	0	13	14	13	8	7	6	12
Average:	0	0	0	0	0	0	0	0	0	0	0
YTD:	723	27,446	3,888	5,328	3,924,764	3,004,340	1,942,821	24,918	240,968	681,274	356,557

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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 5 of 7

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)
08/24/2018					0	0	0	0		0	
08/25/2018					0	0	0	0	0		0
08/26/2018					0	0	0	0			
08/27/2018					0	0	0	0	0		0
08/28/2018					0	0	0	0		0	0
08/29/2018					0	2	0	1	0		0
08/30/2018					0	0	0	0			0
08/31/2018					0	0	0	0	0	0	0
09/01/2018					0	0	0				0
09/02/2018					1	1	0		0	0	0
09/03/2018					0	0	0				0
09/04/2018					0	0	0		0	0	0
09/05/2018					0	0	0				0
09/06/2018						0			0	0	0
09/07/2018											
Total:	0	0	0	0	1	3	0	1	0	0	0
# Days:	0	0	0	0	0	0	0	0	0	0	0
Average:	0	0	0	0	0	0	0	0	0	0	0
YTD:	0	0	4	115	260,630	120,864	58,625	76,238	1,527,709	383,716	741,292

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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 6 of 7

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)
08/24/2018					0	0	1	0		0	
08/25/2018					3	2	1	0	12		0
08/26/2018					1	4	0	0			
08/27/2018					16	6	4	0	8		0
08/28/2018					0	2	0	0		0	0
08/29/2018					10	4	1	0	4		0
08/30/2018					0	3	26	0			0
08/31/2018					5	3	0	0	0	0	0
09/01/2018					0	2	0				0
09/02/2018					2	2	2		0	0	10
09/03/2018					1	1	1				0
09/04/2018					0	4	0		4	0	0
09/05/2018					5	6	1				14
09/06/2018						5			12	0	0
09/07/2018											
Total:	0	0	0	0	43	44	37	0	40	0	24
# Days:	0	0	0	0	15	19	15	8	7	6	12
Average:	0	0	0	0	3	2	2	0	6	0	2
YTD:		1	3		537	35,986	56,855	371	219,350	227,728	27,329

- 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
---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 9/7/2018 8:16:57 AM

Page 7 of 7

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

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 $\text{Passage Index} = \text{Collection Counts} / (\text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}))$
 RIS, BO2 (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts $\text{Passage Index} = \text{Collection Counts} / (\text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}))$
- 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 8/24/2018 12:00:00 AM TO 9/7/2018 12:00:00 AM

Date 9/7/2018 7:17:34 AM

Page 1 of 2

Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	2,048	1	4	1	3	2,060
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	1	0	0	0	2	5
Sum of Number Trucked	2,575	1	4	0	0	2,580
Sum of Sample Morts	16	0	0	0	1	18
Sum of Facility Morts	0	0	0	1	0	1
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	16	0	0	1	1	19

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	1,291	0	0	2	2	1,297
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	1	0	0	0	0	1
Sum of Number Trucked	1,216	0	0	1	2	1,221
Sum of Sample Morts	25	0	0	0	0	25
Sum of Facility Morts	8	0	0	0	0	8
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	33	0	0	0	0	33

FISH PASSAGE CENTER

Two Week Transportation Summary Report

8/24/2018 12:00:00 AM TO 9/7/2018 12:00:00 AM

Date 9/7/2018 7:17:35 AM

Page 2 of 2

Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	286	0	0	0	0	572
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	304	0	0	0	0	608
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	5	0	0	0	0	10
Sum of Facility Morts	0	0	0	0	0	0
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	5	0	0	0	0	10

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	3,625	1	4	3	5	3,643
Sum of Number Barged	0	0	0	0	0	0
Sum of Number Bypassed	306	0	0	0	2	310
Sum of Number Trucked	3,791	1	4	1	2	3,801
Sum of Sample Morts	46	0	0	0	1	48
Sum of Facility Morts	8	0	0	1	0	9
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	54	0	0	1	1	57

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 9/7/2018 7:17:12 AM

Page 1 of 2

Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	529983	3041146	182824	188702	2522944	8988543
Sum of Number Barged	508800	2429169	179217	184065	1811318	6923887
Sum of Number Bypassed	14637	610813	3539	4465	711356	2056166
Sum of Number Trucked	5344	1	4	0	0	5349
Sum of Sample Morts	241	58	0	9	45	398
Sum of Facility Morts	936	1063	64	163	190	2606
Sum of Reseach Morts	25	42	0	0	35	137
Sum of Total Project Mort	1202	1163	64	172	270	3141

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	567602	1857033	137102	74672	1969535	6575479
Sum of Number Barged	559195	1546147	136377	66134	1357466	5022785
Sum of Number Bypassed	855	306206	407	7716	611659	1538502
Sum of Number Trucked	3104	0	2	1	6	3119
Sum of Sample Morts	175	41	4	13	14	261
Sum of Facility Morts	4026	4639	312	807	390	10564
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	4201	4680	316	820	404	10825

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 9/7/2018 7:17:12 AM

Page 2 of 2

Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	305370	1218103	24944	35305	1178568	3940858
Sum of Number Barged	304570	1018208	24840	33659	926249	3233775
Sum of Number Bypassed	431	199433	100	1598	252171	705904
Sum of Number Trucked	129	0	0	0	0	129
Sum of Sample Morts	21	7	0	3	7	45
Sum of Facility Morts	219	455	4	45	141	1005
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	240	462	4	48	148	1050

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	1402955	6116282	344870	298679	5671047	19504880
Sum of Number Barged	1372565	4993524	340434	283858	4095033	15180447
Sum of Number Bypassed	15923	1116452	4046	13779	1575186	4300572
Sum of Number Trucked	8577	1	6	1	6	8597
Sum of Sample Morts	437	106	4	25	66	704
Sum of Facility Morts	5181	6157	380	1015	721	14175
Sum of Reseach Morts	25	42	0	0	35	137
Sum of Total Project Mort	5643	6305	384	1040	822	15016

Cumulative Adult Passage at Mainstem Dams Through: 09/06

dam	enddate	Spring Chinook						Summer Chinook						Fall Chinook					
		2018		2017		10-Yr Avg.		2018		2017		10-Yr Avg.		2018		2017		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	09/06	87894	6456	83624	18110	152393	25835	61057	4349	88044	10648	101791	21805	87040	11872	74730	10426	197554	27036
TDA	09/06	57935	4793	58310	12497	119227	21697	49296	3787	69246	9277	84539	17568	42740	5291	29971	4174	91532	17263
JDA	09/05	50572	5053	46675	12475	103731	20380	42835	4293	60416	7363	75555	16777	27483	3415	15074	2188	51865	10894
MCN	09/06	44427	3472	44292	7020	94405	16297	42649	2513	57279	4705	71705	12468	22274	1854	11197	1355	36992	6413
IHR	09/06	32600	2197	28306	6949	68113	11204	6046	521	9284	2087	19109	4826	6087	607	3489	396	10342	2683
LMN	09/06	35398	3020	28545	8270	68100	11017	6091	716	8216	3388	19658	6010	5398	787	2479	359	7841	2672
LGS	09/06	31834	2486	26598	8335	63992	12109	7458	589	9086	3754	19425	6430	4418	423	1824	273	6338	1571
LGR	09/06	31161	2948	27357	8256	62850	13009	7304	819	8952	3627	17398	6872	3290	346	1524	268	4295	1378
PRD	09/03	7067	949	7268	783	18018	1858	40076	2269	52981	1760	60015	3091	1973	510	2506	325	5253	2102
WAN	09/03	8071	964	6612	484	17542	2163	37808	1450	49392	1355	56843	2474	1196	500	1822	261	3552	1530
RIS	09/05	7894	997	8080	564	18255	2598	38816	1646	56265	1333	59661	4992	1184	337	2340	334	3264	1805
RRH	09/05	5919	807	5864	406	8195	1153	33110	1106	42608	1060	47856	3464	1027	259	1778	230	2684	1134
WEL	09/05	7500	976	6589	820	8670	1609	22163	1101	30101	1102	37754	3567	266	67	557	72	922	291
WFA	09/04	24543	1999	34573	2499	35770	1705	0	0	0	0	0	0	414	34	0	0	273	54

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2018		2017		10-Yr Avg.		10-Yr			10-Yr			Unclipped		Unclipped		10-Yr	
		Adult	Jack	Adult	Jack	Adult	Jack	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.
BON	09/06	13847	1931	3754	575	24144	1612	193816	87687	321943	72721	81158	248006	26400	27547	90041	43140	81534	29818
TDA	09/06	5770	531	663	270	5733	989	152059	64007	273667	31894	24156	136505	11672	9464	52653	10205	29723	8955
JDA	09/05	3128	495	244	97	2588	539	168462	65931	264695	17600	10353	97660	7680	5141	37378	8177	21811	6819
MCN	09/06	1450	104	37	13	803	178	155472	57987	230355	13560	9413	72351	5909	4076	26930	1447	2336	1192
IHR	09/06	3	1	5	0	40	6	658	392	959	5949	3861	42564	2099	1791	12556	942	1239	424
LMN	09/06	1	1	0	0	12	2	395	345	1118	5513	3829	41297	2343	1967	13626	391	391	122
LGS	09/06	0	1	0	0	5	0	280	285	1046	3930	2802	27118	1578	1427	10145	97	495	90
LGR	09/06	0	0	0	0	0	0	272	227	1077	6851	8360	25897	2415	3657	10073	198	330	42
PRD	09/03	35	2	0	0	84	11	189879	66668	271043	1719	1357	9520	0	0	0	10676	23493	5676
WAN	09/03	10	0	1	0	23	3	196181	76073	241635	1562	1189	8752	0	0	0	7576	22342	4442
RIS	09/05	15	0	0	0	14	9	171926	73175	263889	1753	1371	8189	939	782	3720	4263	17679	2701
RRH	09/05	3	0	0	0	0	0	162614	46674	220786	1302	947	5952	649	468	2549	4571	20345	2945
WEL	09/05	1	0	0	0	0	0	153542	42271	209458	1096	763	3923	558	451	1724	165	136	3
WFA	09/04	13	47	119	121	99	68	0	0	0	10705	2731	20728	2161	750	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.

