847 NE 19th Ave., Suite 250
Portland, OR 97232
(503) 833-3900

Fish Passage Center

Weekly Report #17–01

March 10, 2017

This Week's Highlights

Dworshak Operations

Over the last month, numerous FPAC (Fish Passage Advisory Committee) and TMT (Technical Management Team) meetings have taken place concerning project operations at Dworshak Dam. This year at Dworshak, Unit #3 is out of service for rehabilitation through at least the early summer period. As Unit #3 is the largest in terms of outflow capacity of the three units at Dworshak, flow through the powerhouse is limited to 4.5-4.8 Kcfs. Any outflow beyond the constrained powerhouse capacity at Dworshak, must be spilled; creating concerns over TDG (Total Dissolved Gas supersaturation) in the river environment below Dworshak Dam and subsequently at Dworshak Hatchery as water to the hatchery is supplied by river water. Although Dworshak Hatchery has been outfitted with TDG degassing columns "degassers" which significantly reduce TDG in hatchery supply water, there is still much concern over very high discharges and spill levels at Dworshak that will create unknown levels of TDG below the Dam, and it is also unknown how well the TDG "degassers" will decrease TDG in the water supply to hatcheries at these high levels. At current levels of spill 10.7-14.7 Kcfs at Dworshak, TDG directly below the dam has ranged between 122.0-124.5%, with the water supply to the hatcheries at 103-104%.

Over the last month, the Official Water Supply (calculated by USACE) at Dworshak has increased from 2.54 Maf in February to 2.87 Maf in March. With these increasing water supply forecasts, USACE has continued expressing the need to increase outflows at Dworshak to reach deeper flood control elevations. At a TMT call last week (3-3-17), the planned operation was presented by the USACE to increase outflows to a total discharge of 22 Kcfs (17.2 Kcfs spill) then holding that discharge through at least April 15th, while drafting to a System Flood Control elevation of 1471.1 ft. (based on the March Forecast of 2.87 Maf). The USACE presented two options of getting to the 22 Kcfs by providing a flat flow of 17 for 10 days, followed by an increase to 22 Kcfs; or by increasing 1 Kcfs per day from the present discharge until reaching the 22 Kcfs. Neither operation was preferred regarding fish concerns, but USACE agreed to implement the second strategy giving the hatchery the ability to collect information regarding the efficiency of the degassers.

At this week's TMT call (3-8-17), USACE stated their unofficial "early bird" forecast estimated the April - July Water Supply at Dworshak to be near 3.1 Maf, which would necessitate an April 15th draft to the bottom of the active storage at Dworshak (1445 ft.) and require outflows to be increased to 25 Kcfs (20.2 Kcfs spill). At the 3-8-17 TMT meeting, USACE presented a long term scenario of Dworshak operations that modeled outflows of 25 Kcfs through April 15th to meet a Flood Control Elevation of 1445 ft., followed by a ramp down in outflows over late April to outflows in May and June of 1.5-2.0 Kcfs, with this operation the project refilled to within several feet of full by the end of June. Under this scenario, if future water supply decreases relative to early April estimates (3.1 Maf), Dworshak will have trouble refilling by the end of June as minimum outflows of 1.5-1.6 have to be released during the refill period. Because of the powerhouse constraints at Dworshak, a delay in refill into July or failing to refill could impact summer (July, August, and early September) release volumes which are needed for temperature control in the lower Snake River.

The FPC has provided multiple modeling scenarios to describe possible alternatives to the USACE operations, the last of which modified operations by targeting the April 15th Local Flood Control Elevation of 1497.7 ft. that was based on USACEs early April estimate of 3.1 Maf. Under this alternative, outflows would be expected to remain near 18 Kcfs through April 15th in order to meet the local flood control elevation of 1497.7 ft. Flows would continue at 18 Kcfs through the end of April if an early runoff pattern exists, and

then drop to 3.5 Kcfs for all of May and June. The Alternative May and June discharge is slightly higher than that modeled by the COE but is still less than the current limited powerhouse capacity (so would not require excess spill and TDG) and allows some buffer to refill if forecasts decrease.

In summary, this alternative plan for operations at Dworshak would provide a more manageable outflow in terms of TDG production from now through April, provide slightly higher outflows in May and June, and safeguard refill by June 30th if forecasts decline. The latest alternative operates to the local flood control elevation at Dworshak, rather than the system flood control elevation (typically deeper draft). At present, USACE has not agreed to any operation other than operating to hard system flood control elevations. USACE has so far largely ignored requests to show/analyze the potential risk to system flooding (lower Columbia) that could result from an operation of Dworshak to local Flood Control Elevations as opposed to System Flood Control Elevations. As shown by the long term figure at the 3-8-17 TMT (http://www.nwd-wc.usace.army.mil/tmt/agendas/2017/0308_DWR_Long-term-Dwr-Operations-1996-AY.pdf.) , this type of operation will lead to very high discharges and spill levels (with unknown TDG levels), followed by decreases in discharge in May and June to minimum (or near minimum) outflows, which if forecasted inflows diminish, could impact refill by June 30th. From the perspective of the millions of hatchery fish currently in the Dworshak hatchery, the USACE operation seems very risky in terms of GBT (Gas Bubble Trauma) and potential mortality.

At present, there is a TMT call schedule for Monday March 13th at 2:00 pm.

Water Supply

Precipitation throughout the Columbia Basin has varied between 111% and 327% of average at individual sub-basins over March. Precipitation above The Dalles has been 183% of average over March. Over the 2017 water year, precipitation has ranged between 118% and 149% of average.

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

Location	Water Year 2017 March 1-9, 2017		Water Year 2017 October 1, 2016 to March 9, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.93	196	24.2	119
Snake River Above Ice Harbor	1.21	177	16.7	138
Columbia Above The Dalles	1.42	183	18.8	123
Kootenai	1.58	163	25.2	126
Clark Fork	2.39	327	15.8	118
Flathead	2.45	251	24.2	132
Pend Oreille River Basin above Waneta Dam	2.38	266	21.5	126
Salmon River Basin	1.76	200	21.9	144
Upper Snake Tributaries	0.85	111	20.1	149
Clearwater	3.77	310	27.3	120
Willamette River above Portland	4.72	220	61.8	139

Snowpack within the Columbia Basin has been above average. Average snowpack in the Columbia River for basins above the Snake River confluence is 107% of average, for Snake River Basins the average snowpack is 146% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 144% of average.

Table 2 displays the March 9th ESP runoff volume forecasts for multiple reservoirs along with the March COE forecasts at Libby and Dworshak. The March 9th ESP forecast at The Dalles between April and August is 96,623 Kaf (110% of average).

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

Location	March 9, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	110	96,623
Grand Coulee (Apr-Aug)	104	58,900
Libby Res. Inflow, MT (Apr-Aug)	106 115*	6,261 6,783*
Hungry Horse Res. Inflow, MT (Apr-Aug)	117	2,257
Lower Granite Res. Inflow (Apr- July)	133	26,349
Brownlee Res. Inflow (Apr-July)	166	9,074
Dworshak Res. Inflow (Apr-July)	116 118*	2,795 2,867*

* Denotes COE March Forecast

Grand Coulee Reservoir is at 1,257.1 feet (3-8-17) and has drafted 7.7 feet over the last week. Outflows at Grand Coulee have ranged between 114.5 and 151.9 Kcfs over the last week. The end of March FC Elevation at Grand Coulee is currently 1,267.1 feet (based on March Final Forecast). Grand Coulee will be drafted to approximately 1,255 ft. this year for a period of eight weeks for Drum Gate Maintenance (Mid-March to Mid-May).

The Libby Reservoir is currently at elevation 2,394.9 feet (3-8-17) and has drafted 0.3 feet over the previous week. Daily average outflows at Libby Dam have been 4.0 Kcfs over the last week. The end of March FC Elevation at Libby is currently 2,382.1 feet (based on March Final Forecast).

Hungry Horse is currently at an elevation of 3,541.2 feet (3-8-17) and has drafted 0.7 feet over the last week. Outflows at Hungry Horse have been 1.6-2.9 Kcfs over the last week. The end of March FC Elevation at Hungry Horse is currently 3,539.8 feet (based on March Final Forecast).

Dworshak is currently at an elevation of 1,513.7 feet (3-8-17) and has drafted 8.2 feet over the last week. Outflows at Dworshak have increased from 12.5 Kcfs to 17.6 Kcfs over the last week. With the large unit out of service at Dworshak this year, the powerhouse capacity is approximately 4.8 Kcfs, causing spill levels to range between 7.7 Kcfs and 12.7 Kcfs last week. The end of March System FC Elevation at Dworshak is currently 1,493.1 feet (based on COE March Final Forecast).

The Brownlee Reservoir was at an elevation of 2,023.2 feet on March 9th, 2017, and has drafted 17.8 feet over the last week. The end of March FC Elevation at Brownlee is currently 2036.0 feet (based on March Final Forecast). Outflows at Hells Canyon Dam have ranged between 41.7 Kcfs and 56.1 Kcfs over the last four days.

Smolt Monitoring

Smolt Monitoring Program activities began at Bonneville Dam on March 2nd, with the first sample tallied and reported on March 3rd. SMP traps on the Salmon and Snake rivers began sampling on March 5th, with the first samples tallied and reported on March 6th. The SMP trap on the Imnaha River has been sampling since late January. Sampling at the SMP trap on the Grande Ronde River has been delayed, with an approximate start date of March 16th. SMP sampling at the other bypass facilities is expected to begin in late March (at Lower Granite Dam) or early April (at Little Goose, Lower Monumental, McNary, John Day, and Rock Island dams).

Bonneville Dam (BON) is the only SMP bypass facility that has sampled so far this season. Sampling at BON began on March 2nd, with the first sample tallied and reported on March 3rd. Subyearling Chinook have made up the majority of the salmonids sampled at Bonneville so far this year. All of the subyearling Chinook sampled so far this year have been fry. Over the past week the daily average passage index for subyearling Chinook fry was about 470 per day. A relatively small number of yearling Chinook, coho, and sockeye juveniles have also been collected this week. Pacific lamprey macropthalmia were encountered every day this week. Collections of pacific macropthalmia over the last week began with relatively high collections (5,300 on March 3rd) but have since decreased substantially (165 on March 9th). This week's daily average collection for Pacific macropthalmia was nearly 2,400 fish per day.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 and is operated by Idaho Department of Fish and Game. Sampling at WTB began on March 5th, with the first sample being tallied and reported on March 6th. Similar to recent years, sampling at WTB in 2017 will only occur during the weekdays. To date, only yearling Chinook have been collected at this trap. Daily collections

have ranged from 6 to 38 yearling Chinook, all of which have been unclipped.

The Snake River Trap at Lewiston, ID (LEW) is located at river kilometer 225 and operated by Idaho Department of Fish and Game. Sampling at LEW began on March 5th, with the first sample tallied and reported on March 6th. To date, salmonid collections at the Snake River Trap have been small, with only a few yearling Chinook and steelhead being collected each day. Due to anticipated high river flows and debris, sampling at LEW was suspended after the March 9th sample. Assuming river flows follow projections, sampling at LEW may resume on March 12th or 13th.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at the Imnaha River Trap is year round. For 2017, the FPC currently has data from IMN for the period of January 27th through March 7th. In that period, a total of 425 yearling Chinook and eight steelhead were sampled at the trap. Over the last week of available data (Feb. 28-Mar. 6), the daily average collection for yearling Chinook was approximately five per day.

Adult Passage

Bonneville Dam uses video counts from January 1st through March 31st and direct counting after this period. Bonneville Dam counts adult salmon and steelhead year round. Lower Granite Dam uses video counts from March 1st through March 31st and direct counting after this period. Lower Granite Dam counts adult salmon and steelhead through December 30th each year. Willamette Falls Dam also uses video counts and reports adult counts year round. Video counts can cause a delay in posting the count data to the web, because the counting staff at the projects have to review the tapes. The FPC collects the adult count data from projects several times a day and updates Adult Dam Count report linked on our homepage (http://www.fpc.org/). During the winter season at Bonneville Dam (from 1/1/2017 through 3/8/2017), 2 adult Chinook and 582 adult steelhead were counted. In 2016 for the same time frame, 29 adult Chinook and 1,704 adult steelhead were counted. The 2017 Bonneville Dam winter season count of adult steelhead had 1,122 fewer fish than the 2016 count.

The Willamette Falls cumulative steelhead count from January 1st through March 8th is 351. The 2017 Willamette Falls winter steelhead count is about 11% of the 2016 count of 3,193 and 14.1% of the 10-year average count of 2,485. This year's Lower Granite steelhead count of 641 is 92.2% of the 2016 count of 695 and has 15 more fish than the 10-year average count of 626.

This winter, based on estimates made by the Technical Advisory Committee (TAC) for U.S. v. Oregon, the spring Chinook run for 2017 is expected to be 227,890. The TAC reported that 274,652 spring Chinook had returned to the river in 2016 (see U.S. v. Oregon, Technical Advisory Committee's March 8, 2017, document *Columbia River Mouth Fish Returns* which displays 2016 actual and 2017 forecasts of spring Chinook, summer Chinook, sockeye, and steelhead counts from the Oregon and Washington Departments of Fish and Wildlife). This is available at: http://www.dfw.state.or.us/fish/OSCRP/CRM/returns_and_expectations/docs/2016_returns_17forecasts.pdf

The Bonneville Dam corner collector was opened on March 2nd for kelt passage. Between March 2nd and March 8th, a total of 13 steelhead were observed over the separator at the Bonneville Juvenile Monitoring Facility (JMF). Kelt passage at the Bonneville JMF can be found at: http://www.fpc.org/adultsalmon/bonkeltcounts.htm.

Hatchery Releases Last Two Weeks

There is no Hatchery Release Report this week

Hatchery Releases Next Two Weeks

There is no Hatchery Release Report this week

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
02/24/2017	123.3	0.0	123.9	0.0	128.2	0.0	129.5	8.1	127.6	0.0	131.3	0.0	131.9	0.0
02/25/2017	125.0	0.0	124.5	0.0	124.2	0.0	127.0	7.8	127.4	0.0	118.9	0.0	114.5	0.0
02/26/2017	119.9	0.0	130.7	0.0	133.4	0.0	135.8	0.0	139.3	0.0	149.1	0.0	137.7	0.0
02/27/2017	120.6	0.0	118.0	0.0	122.4	0.0	123.5	0.0	127.3	0.0	137.5	0.0	136.9	0.0
02/28/2017	121.4	0.0	120.6	2.7	118.6	0.0	117.5	0.0	120.1	0.0	122.8	0.0	121.8	0.0
03/01/2017	137.7	0.0	133.7	0.0	131.3	0.0	126.1	1.2	127.2	0.0	123.6	0.0	121.5	21.0
03/02/2017	151.9	0.0	150.6	10.2	151.6	11.3	149.5	16.9	150.3	1.0	164.1	10.3	165.3	65.5
03/03/2017	144.3	0.0	144.3	16.0	148.9	7.0	150.2	14.5	153.7	4.1	169.0	0.0	172.2	59.0
03/04/2017	132.0	0.0	138.7	4.7	144.6	0.0	144.3	10.9	147.6	1.2	152.8	0.0	154.6	46.8
03/05/2017	126.7	0.0	126.4	0.0	131.1	0.0	131.2	0.0	135.4	0.0	138.6	0.0	128.5	0.0
03/06/2017	125.3	0.0	126.5	0.0	126.5	0.0	123.9	0.0	128.3	0.0	142.4	0.0	138.3	26.5
03/07/2017	118.1	0.0	117.0	0.0	124.7	0.0	126.4	0.2	131.8	0.0	148.0	0.0	144.7	0.0
03/08/2017	114.5	0.0	109.4	0.0	113.9	0.0	110.6	0.0	112.8	1.5	131.5	0.0	134.0	0.0
03/09/2017	115.7	0.0	124.5	0.0	124.0	0.0	121.0	3.6	123.2	0.0	136.4	0.0	135.9	0.0

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

	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
02/24/2017	10.1	5.3	---	45.0	88.2	2.4	88.2	0.0	94.6	12.9	97.3	38.0
02/25/2017	10.3	5.5	---	44.8	80.6	0.0	78.9	0.0	85.6	4.7	92.4	33.8
02/26/2017	9.9	5.2	---	44.8	83.7	0.0	84.1	0.0	83.2	1.4	82.2	24.2
02/27/2017	10.0	5.2	---	43.2	70.6	3.2	71.9	0.0	77.7	1.2	83.1	24.8
02/28/2017	10.0	5.2	---	42.6	74.4	3.0	73.5	2.0	77.2	1.6	80.2	22.1
03/01/2017	10.0	5.2	---	40.2	69.3	1.8	71.1	0.0	74.3	0.0	75.7	16.6
03/02/2017	12.5	7.7	---	38.1	67.0	0.0	66.5	0.0	70.2	0.0	72.1	8.6
03/03/2017	12.6	7.7	---	38.6	69.7	0.0	68.2	0.0	70.8	0.0	71.9	0.2
03/04/2017	13.9	9.1	---	40.7	67.1	0.0	65.2	0.0	67.1	0.0	67.3	0.0
03/05/2017	14.6	9.7	---	44.5	76.7	0.0	70.3	0.0	73.7	0.0	73.7	0.0
03/06/2017	15.6	10.7	---	47.8	82.3	0.0	81.1	0.0	83.6	2.4	80.1	16.7
03/07/2017	16.6	11.7	---	50.0	84.4	0.0	87.2	0.0	89.0	6.1	93.6	40.4
03/08/2017	17.6	12.6	---	44.2	90.0	9.3	80.4	0.0	84.0	1.9	86.7	31.1
03/09/2017	18.3	13.3	---	49.9	101.2	13.5	91.6	0.0	98.1	14.1	98.9	43.1

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

	McNary		John Day		The Dalles		Bonneville			
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
02/24/2017	253.5	42.1	255.2	37.2	253.0	39.9	284.3	38.6	101.0	133.3
02/25/2017	242.4	29.5	250.9	19.9	245.9	38.2	266.9	23.1	97.3	135.0
02/26/2017	212.1	0.0	243.3	0.7	241.4	20.1	271.1	19.7	106.0	134.0
02/27/2017	220.1	13.3	214.7	13.3	212.3	25.6	244.8	8.1	96.5	128.3
02/28/2017	226.8	23.0	218.2	27.1	210.4	46.1	225.8	1.0	90.7	125.7
03/01/2017	214.3	10.3	217.0	29.6	212.6	43.9	237.3	0.8	95.0	132.4
03/02/2017	215.8	6.3	217.4	26.3	209.7	51.1	230.0	0.9	91.5	130.4
03/03/2017	240.6	29.6	237.6	36.1	231.2	57.5	235.1	3.1	90.7	133.4
03/04/2017	246.0	34.5	256.7	23.1	248.8	58.6	267.0	15.8	100.1	138.8
03/05/2017	223.4	12.3	228.5	20.1	225.1	21.4	267.3	15.6	102.8	136.8
03/06/2017	227.6	24.3	214.3	40.5	209.4	14.5	229.4	2.7	96.2	122.7
03/07/2017	237.1	39.4	237.5	80.4	224.0	22.2	247.2	22.7	96.9	118.3
03/08/2017	241.6	40.0	247.2	89.7	228.5	12.3	252.9	22.4	98.4	120.2
03/09/2017	245.2	45.2	247.9	89.9	241.5	23.7	272.8	41.9	---	---

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	97.5	97.7	98.0	24	---	---	---	0	98.1	98.1	98.2	24	97.9	98.5	105.8	24	97.5	97.5	97.6	4
2/25	97.5	97.7	97.9	24	---	---	---	0	98.6	99.0	99.3	24	98.1	98.7	99.0	24	98.6	98.6	98.7	3
2/26	97.8	97.9	98.2	24	---	---	---	0	99.6	99.8	100.0	24	99.2	99.6	100.0	24	99.4	99.4	99.5	9
2/27	98.0	98.2	98.5	24	---	---	---	0	99.9	100.1	100.3	24	99.4	99.5	100.0	24	99.8	99.8	99.8	11
2/28	97.4	97.8	97.9	24	---	---	---	0	99.0	99.4	100.0	24	98.3	98.7	99.2	24	98.6	98.6	99.7	14
3/1	96.8	97.0	97.1	24	---	---	---	0	98.2	98.5	98.6	24	97.5	97.7	97.7	24	97.8	97.9	98.1	14
3/2	96.6	97.0	97.1	22	---	---	---	0	98.3	98.6	98.8	24	97.5	97.9	98.0	24	97.9	98.3	98.4	24
3/3	96.8	97.1	97.5	24	---	---	---	0	99.6	100.3	100.6	24	98.9	99.6	99.9	24	99.3	99.9	100.2	24
3/4	97.5	97.6	97.8	24	---	---	---	0	100.4	100.6	100.7	24	99.7	100.0	100.3	24	100.0	100.1	100.2	22
3/5	97.9	98.1	98.2	24	---	---	---	0	100.9	101.0	101.1	24	100.2	100.5	100.7	24	100.5	100.5	100.8	16
3/6	97.2	97.4	97.6	24	---	---	---	0	100.0	100.2	100.4	24	99.6	100.0	100.3	24	99.7	99.7	99.9	8
3/7	96.8	97.1	98.5	24	---	---	---	0	99.5	99.9	100.0	24	99.0	99.4	99.7	24	---	---	---	0
3/8	96.7	96.9	97.1	24	---	---	---	0	99.4	99.5	99.7	24	99.2	99.2	99.5	11	98.9	98.9	99.1	13
3/9	96.1	96.1	96.3	16	---	---	---	0	99.3	99.4	99.7	18	99.0	99.1	99.3	15	98.7	98.8	99.0	17

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	97.1	97.2	97.5	24	100.1	101.1	101.7	24	100.6	101.4	102.4	24	100.9	101.1	101.2	24	104.5	107.1	111.2	20
2/25	97.7	98.4	98.6	24	97.2	97.6	97.7	24	97.8	98.1	98.5	24	101.7	102.3	102.8	24	106.0	108.5	111.6	23
2/26	98.8	99.0	99.2	24	98.0	98.2	98.5	24	98.3	98.6	98.9	24	101.8	102.6	103.0	24	102.2	102.8	103.1	21
2/27	99.1	99.4	99.5	24	98.3	98.5	98.6	24	98.7	98.9	99.2	24	99.7	99.9	100.4	24	100.0	100.1	100.7	20
2/28	99.7	101.1	109.5	24	97.5	97.7	98.0	24	97.8	98.1	98.5	24	98.6	98.9	99.6	24	98.8	99.1	99.9	24
3/1	97.6	97.8	98.0	24	98.1	99.1	106.7	24	98.4	99.5	107.0	24	98.0	98.2	98.4	24	98.4	98.7	102.4	23
3/2	102.1	107.1	109.5	24	97.5	97.7	98.0	24	100.9	104.2	111.3	24	98.3	98.8	99.2	24	108.6	109.6	113.0	22
3/3	106.4	109.5	109.9	24	99.5	100.7	101.5	22	101.5	102.5	104.1	22	101.4	103.5	105.3	24	111.1	113.3	114.3	23
3/4	101.8	104.0	109.7	24	100.8	101.2	101.4	24	101.1	101.3	101.5	24	103.0	103.6	104.1	24	108.7	111.1	112.0	22
3/5	100.0	100.2	100.5	24	100.5	101.0	101.4	24	100.9	101.4	101.7	24	103.0	103.2	103.7	24	103.4	103.7	104.4	22
3/6	99.2	99.4	99.5	24	98.8	99.1	99.3	24	99.1	99.5	99.9	24	101.2	101.4	101.8	24	101.3	101.6	102.2	24
3/7	98.4	98.7	98.9	24	97.9	98.1	98.1	24	98.2	98.5	98.9	24	99.5	99.7	100.3	24	99.7	100.0	100.4	22
3/8	98.7	98.7	98.7	1	97.8	98.0	98.2	24	98.2	98.5	98.9	24	98.9	99.0	99.5	24	99.0	99.1	99.6	22
3/9	98.5	98.8	99.3	20	98.0	98.3	98.4	23	98.4	98.7	98.7	23	98.8	99.0	99.3	23	100.7	101.9	108.7	20

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	100.0	100.4	100.7	22	99.9	100.3	100.5	20	98.0	98.1	98.2	34	98.3	98.6	98.8	34	97.8	97.9	97.9	34
2/25	103.2	104.0	104.8	23	103.2	104.0	105.0	22	98.7	99.6	100.0	34	99.7	100.9	101.1	34	98.0	98.6	98.9	34
2/26	102.1	102.4	103.0	22	102.1	102.3	103.1	19	100.3	100.5	100.6	34	101.5	101.9	102.0	34	99.5	99.8	99.9	34
2/27	99.7	99.9	100.5	21	99.6	99.8	100.5	18	102.4	103.3	103.6	24	103.5	104.2	104.4	24	100.3	100.5	100.6	24
2/28	98.2	98.4	99.1	24	98.2	98.4	99.2	22	102.2	102.8	103.4	24	102.2	102.8	103.6	24	100.1	100.4	100.6	24
3/1	97.7	97.8	98.0	23	97.7	97.8	98.1	21	100.4	100.9	101.3	24	100.0	100.6	101.1	24	99.6	99.8	100.0	24
3/2	100.0	101.6	102.0	23	100.1	101.7	102.4	20	99.3	99.4	99.6	24	101.5	103.9	115.3	24	101.0	102.7	107.1	24
3/3	102.8	103.8	104.1	23	103.8	104.1	104.4	21	100.3	100.9	101.3	24	100.2	100.9	101.4	24	101.9	102.3	103.5	24
3/4	104.3	105.0	105.3	23	104.4	105.1	105.3	21	102.0	102.7	103.5	24	102.7	103.6	104.3	24	102.0	102.2	102.4	24
3/5	103.1	103.7	105.0	23	103.4	104.0	105.2	22	103.9	104.0	104.0	24	104.5	104.7	104.9	24	102.4	102.5	102.6	24
3/6	100.7	101.0	101.8	24	100.8	101.1	102.0	24	103.1	103.3	103.7	24	103.9	104.2	104.4	24	101.5	101.8	102.1	24
3/7	99.4	99.5	100.0	23	99.5	99.7	100.1	20	102.5	102.6	102.8	24	102.3	102.5	102.9	24	101.1	101.5	101.7	24
3/8	98.5	98.7	98.8	23	98.9	99.3	100.8	22	---	---	---	0	---	---	---	0	---	---	---	0
3/9	98.4	98.7	100.0	21	98.6	98.8	99.5	19	---	---	---	0	---	---	---	0	---	---	---	0

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

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

	Priest R. Dnst				Pasco				Dworshak				Clrwtr-Peck				Anatone			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	98.4	98.5	98.6	34	---	---	---	0	113.8	114.5	114.9	24	104.9	105.7	105.9	24	---	---	---	0
2/25	98.7	99.5	99.8	34	---	---	---	0	114.6	114.9	115.5	24	106.0	106.5	107.1	24	---	---	---	0
2/26	100.5	101.1	101.2	34	---	---	---	0	114.3	114.5	114.7	24	106.2	106.4	106.9	24	---	---	---	0
2/27	101.4	101.7	101.8	24	---	---	---	0	114.6	114.8	115.0	24	106.4	106.8	107.0	24	---	---	---	0
2/28	101.8	101.9	102.0	24	---	---	---	0	113.9	114.2	114.5	24	106.0	106.3	106.6	24	---	---	---	0
3/1	103.3	105.6	110.0	24	---	---	---	0	113.2	113.3	113.6	24	106.0	106.4	106.8	24	---	---	---	0
3/2	108.0	112.3	114.1	24	---	---	---	0	118.6	118.9	119.2	24	110.1	110.8	111.5	24	---	---	---	0
3/3	110.3	111.5	113.8	24	---	---	---	0	119.2	119.9	121.3	24	111.0	111.9	112.5	24	---	---	---	0
3/4	108.2	109.4	109.9	24	---	---	---	0	121.4	122.0	122.2	24	112.1	112.7	113.1	24	---	---	---	0
3/5	103.2	103.5	104.7	24	---	---	---	0	122.2	122.3	122.4	24	112.1	112.3	112.5	24	---	---	---	0
3/6	105.7	108.3	110.0	24	---	---	---	0	122.2	122.3	122.5	24	112.3	112.8	113.2	24	---	---	---	0
3/7	102.7	103.0	103.3	24	---	---	---	0	122.5	122.7	122.9	24	113.2	113.8	114.2	24	---	---	---	0
3/8	---	---	---	0	---	---	---	0	122.4	122.7	123.0	24	113.5	113.5	113.9	9	---	---	---	0
3/9	---	---	---	0	---	---	---	0	123.3	123.4	123.8	18	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Snake River Sites

	Clrwtr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	---	---	---	0	---	---	---	0	101.8	102.3	102.7	24	---	---	---	0	101.3	102.4	103.1	24
2/25	---	---	---	0	---	---	---	0	102.7	103.5	104.1	24	---	---	---	0	105.1	106.0	106.3	24
2/26	---	---	---	0	---	---	---	0	104.7	105.2	105.4	24	---	---	---	0	104.7	105.4	106.3	24
2/27	---	---	---	0	---	---	---	0	106.5	107.7	116.9	24	---	---	---	0	103.0	103.1	103.3	24
2/28	---	---	---	0	---	---	---	0	105.7	107.0	110.4	24	---	---	---	0	103.3	104.2	108.4	24
3/1	---	---	---	0	---	---	---	0	103.8	104.5	105.1	24	---	---	---	0	101.9	101.9	102.1	24
3/2	---	---	---	0	---	---	---	0	103.0	103.3	103.5	24	---	---	---	0	102.7	103.4	103.7	24
3/3	---	---	---	0	---	---	---	0	104.5	105.3	105.8	24	---	---	---	0	104.8	105.5	105.7	24
3/4	---	---	---	0	---	---	---	0	106.5	106.9	107.2	24	---	---	---	0	105.8	106.2	107.2	24
3/5	---	---	---	0	---	---	---	0	107.0	107.2	107.3	24	---	---	---	0	105.7	105.9	106.2	24
3/6	---	---	---	0	---	---	---	0	105.0	105.7	106.2	24	---	---	---	0	104.0	104.2	104.3	18
3/7	---	---	---	0	---	---	---	0	103.4	103.7	104.0	24	---	---	---	0	103.7	104.2	104.5	24
3/8	---	---	---	0	---	---	---	0	106.2	108.0	108.1	24	---	---	---	0	103.6	103.8	104.2	24
3/9	---	---	---	0	---	---	---	0	108.3	108.4	108.6	18	---	---	---	0	103.0	103.1	103.3	16

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

	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	---	---	---	0	110.7	111.0	111.2	23	---	---	---	0	116.8	117.5	117.7	24	---	---	---	0
2/25	---	---	---	0	106.3	109.2	110.2	24	---	---	---	0	115.7	116.2	116.4	24	---	---	---	0
2/26	---	---	---	0	104.2	105.7	109.8	24	---	---	---	0	111.2	112.9	115.7	24	---	---	---	0
2/27	---	---	---	0	106.4	107.2	110.6	24	---	---	---	0	111.2	114.3	115.6	24	---	---	---	0
2/28	---	---	---	0	104.1	105.4	109.0	24	---	---	---	0	109.0	109.1	109.3	24	---	---	---	0
3/1	---	---	---	0	100.9	101.2	101.6	24	---	---	---	0	106.7	108.3	108.9	24	---	---	---	0
3/2	---	---	---	0	101.5	102.2	102.4	24	---	---	---	0	104.5	105.7	105.9	24	---	---	---	0
3/3	---	---	---	0	103.0	103.7	103.9	24	---	---	---	0	102.8	103.3	104.3	24	---	---	---	0
3/4	---	---	---	0	104.7	105.5	109.0	24	---	---	---	0	103.4	103.8	103.9	24	---	---	---	0
3/5	---	---	---	0	105.4	105.5	105.6	24	---	---	---	0	103.9	104.1	104.3	24	---	---	---	0
3/6	---	---	---	0	105.5	106.6	108.9	24	---	---	---	0	108.3	113.4	115.7	24	---	---	---	0
3/7	---	---	---	0	106.2	107.8	109.9	24	---	---	---	0	116.3	117.3	117.6	24	---	---	---	0
3/8	---	---	---	0	103.8	104.9	108.3	24	---	---	---	0	114.7	115.0	117.2	24	---	---	---	0
3/9	---	---	---	0	109.8	110.4	112.1	17	---	---	---	0	116.8	116.8	117.1	17	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	McNary-Wash				McNary Tlwr				John Day				John Day Tlwr				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
2/24	---	---	---	0	110.0	110.2	110.5	24	---	---	---	0	112.9	113.8	113.9	24	---	---	---	0
2/25	---	---	---	0	109.5	110.4	110.6	24	---	---	---	0	110.7	110.9	111.1	24	---	---	---	0
2/26	---	---	---	0	105.3	105.6	105.7	24	---	---	---	0	105.7	106.1	111.0	24	---	---	---	0
2/27	---	---	---	0	107.2	108.6	108.8	24	---	---	---	0	109.2	111.3	111.6	24	---	---	---	0
2/28	---	---	---	0	107.4	108.1	109.1	24	---	---	---	0	112.2	112.8	112.9	24	---	---	---	0
3/1	---	---	---	0	103.8	105.1	108.7	24	---	---	---	0	112.1	113.1	114.0	24	---	---	---	0
3/2	---	---	---	0	103.1	104.4	104.7	24	---	---	---	0	111.8	112.7	112.8	24	---	---	---	0
3/3	---	---	---	0	108.8	111.2	111.7	24	---	---	---	0	113.6	114.1	114.2	24	---	---	---	0
3/4	---	---	---	0	111.4	111.7	112.1	24	---	---	---	0	112.1	113.5	113.7	24	---	---	---	0
3/5	---	---	---	0	109.9	110.1	110.4	24	---	---	---	0	109.7	113.7	118.2	24	---	---	---	0
3/6	---	---	---	0	109.5	110.4	111.1	24	---	---	---	0	112.6	116.3	117.2	24	---	---	---	0
3/7	---	---	---	0	110.7	111.5	111.9	24	---	---	---	0	118.5	119.3	119.5	24	---	---	---	0
3/8	---	---	---	0	110.5	111.0	111.7	24	---	---	---	0	119.0	119.1	119.2	24	---	---	---	0
3/9	---	---	---	0	111.8	112.1	112.5	17	---	---	---	0	119.3	119.4	119.5	17	---	---	---	0

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	The Dalles Dnst				Bonneville				Warrendale				Camas\Washougal				Cascade Island			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
2/24	105.4	105.6	105.9	24	---	---	---	0	112.7	115.3	117.7	24	---	---	---	0	---	---	---	0
2/25	105.4	105.5	105.6	24	---	---	---	0	110.2	112.6	117.2	24	---	---	---	0	---	---	---	0
2/26	105.1	105.5	105.7	24	---	---	---	0	108.9	109.6	111.2	24	---	---	---	0	---	---	---	0
2/27	104.7	105.6	105.7	24	---	---	---	0	107.1	108.0	109.6	24	---	---	---	0	---	---	---	0
2/28	106.2	107.3	111.8	24	---	---	---	0	103.8	104.3	105.1	24	---	---	---	0	---	---	---	0
3/1	106.5	107.6	112.4	24	104.6	104.7	106.1	15	104.1	104.5	104.8	24	---	---	---	0	106.1	106.2	106.7	13
3/2	107.7	109.1	110.7	24	106.7	107.1	107.7	24	106.4	106.6	107.1	14	106.4	106.4	107.2	12	108.0	108.3	108.6	24
3/3	108.3	109.0	109.5	24	109.3	110.0	111.0	24	---	---	---	0	107.7	108.8	109.6	24	110.5	111.6	114.0	24
3/4	108.4	108.9	109.5	24	110.5	110.9	111.2	24	---	---	---	0	109.5	110.7	111.5	24	114.3	114.6	114.8	24
3/5	106.2	106.6	106.9	24	110.3	110.7	110.9	24	---	---	---	0	109.4	109.7	109.8	24	114.4	114.6	114.8	24
3/6	105.2	106.7	108.3	24	106.8	107.6	108.3	24	---	---	---	0	107.0	107.6	108.3	24	109.9	111.7	114.2	24
3/7	106.4	108.7	109.7	24	105.7	106.6	107.4	24	---	---	---	0	105.0	105.2	105.4	24	114.5	115.0	121.6	24
3/8	109.2	109.5	110.0	24	104.8	105.9	107.5	24	---	---	---	0	105.0	105.5	105.7	24	114.3	114.9	115.3	24
3/9	110.4	110.6	111.0	17	109.1	109.5	110.4	17	---	---	---	0	105.7	106.3	107.6	17	116.9	117.5	118.6	17

Two-Week Summary of Passage Indices

Source: Fish Passage Center Updated: 3/10/2017 14:16

Two-Week Summary of Passage Indices

* One or more of the sites on this date had an incomplete or biased sample.
See Sampling Comments: http://www.fpc.org/currentDaily/smpcomments.htm
For clip information see: http://www.fpc.org/CurrentDaily/catch.htm
For sockeye and yearling chinook (Snake only) race information see: http://www.fpc.org/smoltqueries/currentsmpsubmitdata.asp

				COMBINED YEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/24/2017	*	---	5	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	8	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	6	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	12	---	---	---	---	---	---	---	---	---
02/28/2017		---	15	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	2	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	8	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	2	---	---	---	---	---	---	---	---	25
03/04/2017	*	---	1	---	---	---	---	---	---	---	---	26
03/05/2017	*	---	1	---	---	---	---	---	---	---	---	55
03/06/2017	*	17	3	---	2	---	---	---	---	---	---	74
03/07/2017		20	---	---	2	---	---	---	---	---	---	19
03/08/2017		6	---	---	0	---	---	---	---	---	---	148
03/09/2017		34	---	---	4	---	---	---	---	---	---	217
03/10/2017	*	38	---	---	0	---	---	---	---	---	---	---
Total:		**115**	**63**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**564**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**23**	**6**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**81**
YTD		**115**	**425**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**564**

				COMBINED SUBYEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/24/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/28/2017		---	0	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	0	---	---	---	---	---	---	---	---	572
03/04/2017	*	---	0	---	---	---	---	---	---	---	---	1,050
03/05/2017	*	---	0	---	---	---	---	---	---	---	---	810
03/06/2017	*	0	0	---	0	---	---	---	---	---	---	1,164
03/07/2017		0	---	---	0	---	---	---	---	---	---	928
03/08/2017		0	---	---	0	---	---	---	---	---	---	611
03/09/2017		0	---	---	0	---	---	---	---	---	---	990
03/10/2017	*	0	---	---	0	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,125**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**875**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,125**

Two-Week Summary of Passage Indices

				COMBINED COHO								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/24/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/28/2017		---	0	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/04/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/05/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/06/2017	*	0	0	---	0	---	---	---	---	---	---	0
03/07/2017		0	---	---	0	---	---	---	---	---	---	0
03/08/2017		0	---	---	0	---	---	---	---	---	---	10
03/09/2017		0	---	---	0	---	---	---	---	---	---	0
03/10/2017	*	0	---	---	0	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**

				COMBINED STEELHEAD								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/24/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/28/2017		---	1	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	0	---	---	---	---	---	---	---	---	8
03/04/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/05/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/06/2017	*	0	0	---	1	---	---	---	---	---	---	18
03/07/2017		0	---	---	0	---	---	---	---	---	---	0
03/08/2017		0	---	---	0	---	---	---	---	---	---	0
03/09/2017		0	---	---	0	---	---	---	---	---	---	0
03/10/2017	*	0	---	---	0	---	---	---	---	---	---	---
Total:		**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**26**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
YTD		**0**	**8**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**26**

Two-Week Summary of Passage Indices

				COMBINED SOCKEYE								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/24/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/28/2017		---	0	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/04/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/05/2017	*	---	0	---	---	---	---	---	---	---	---	0
03/06/2017	*	0	0	---	0	---	---	---	---	---	---	37
03/07/2017		0	---	---	0	---	---	---	---	---	---	19
03/08/2017		0	---	---	0	---	---	---	---	---	---	10
03/09/2017		0	---	---	0	---	---	---	---	---	---	0
03/10/2017	*	0	---	---	0	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**66**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**66**

				COMBINED LAMPREY JUVENILES								
		WTB	IMN	GRN	LEW	LGR†	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(Samp)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)
02/24/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/25/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/26/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/27/2017	*	---	0	---	---	---	---	---	---	---	---	---
02/28/2017		---	0	---	---	---	---	---	---	---	---	---
03/01/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/02/2017	*	---	0	---	---	---	---	---	---	---	---	---
03/03/2017	*	---	0	---	---	---	---	---	---	---	---	5,270
03/04/2017	*	---	0	---	---	---	---	---	---	---	---	5,870
03/05/2017	*	---	0	---	---	---	---	---	---	---	---	3,135
03/06/2017	*	0	0	---	0	---	---	---	---	---	---	1,570
03/07/2017		0	---	---	0	---	---	---	---	---	---	560
03/08/2017		0	---	---	0	---	---	---	---	---	---	205
03/09/2017		0	---	---	0	---	---	---	---	---	---	165
03/10/2017	*	0	---	---	0	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16,775**
# Days:		**5**	**11**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,396**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16,775**

Two-Week Summary of Passage Indices

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

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

Three classes of fish counts are shown in these tables:
Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details †.
Collection counts (Coll), which account for sample rates but are not adjusted for flow;
Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.
Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.

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

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

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

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
IMN (Collection) = Imnaha River Trap : Collection Counts
GRN (Collection) = Grande Ronde River Trap : Collection Counts
LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}
MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts
  Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.
RIS data collected for the FPC by Chelan Co. PUD.
LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.
LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.
IMN data collected for the FPC by the Nez Perce Tribe.
Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)
WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

Cumulative Adult Passage at Mainstem Dams Through: 03/09

		Spring Chinook						Summer Chinook						Fall Chinook					
		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.	
dam	enddate	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	03/08	2	0	29	1	14	0	0	0	0	0	0	0	0	0	0	0	0	0
TDA	03/08	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	03/08	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	03/07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	03/08	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

		Coho						Sockeye			Steelhead						Lamprey		
		2017		2016		10-Yr Avg.				10-Yr			10-Yr	Unclipped	Unclipped	10-Yr			10-Yr
DAM	ENDDATE	Adult	Jack	Adult	Jack	Adult	Jack	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.
BON	03/08	0	0	0	0	0	0	0	1	0	582	1704	1116	238	698	410	0	-1	0
TDA	03/08	0	0	0	0	0	0	0	0	0	237	0	379	70	0	154	0	0	0
JDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	03/08	0	0	0	0	1	0	0	0	0	594	0	944	190	0	299	0	0	0
IHR		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	03/07	0	0	0	0	0	0	0	0	0	641	695	626	239	288	173	0	0	0
PRD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	03/08	0	0	0	0	0	0	0	0	0	351	3193	2485	0	0	0	0	0	0

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

Page last updated on: 03/10/17