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

Fish Passage Center

Weekly Report #17–03

March 24, 2017

This Week's Highlights

Dworshak Operations

Over the last month and a half, 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.

Last week, lower Columbia flood control operations restricted the Dworshak outflow to 22.5 Kcfs until river flows at Vancouver, Washington began to decrease. Further reductions in outflow were needed at Dworshak late on 3/15/17 as high flows/runoff created concern downstream of Dworshak. As a result, outflows from Dworshak were restricted to 12.5 Kcfs for downstream flood control. Outflows from Dworshak were further reduced on 3/19/17 to 7.5-8.0 Kcfs to facilitate the release of hatchery Chinook from the Clearwater Hatchery (~400,000 total). Outflows remained at the 7.5-8.0 Kcfs level through noon on Monday (3/20/17), when flows were increased at a rate of 2 Kcfs/hr up to an outflow of 25 Kcfs.

Due to concern regarding the increased TDG supersaturation levels that would result from Dworshak Dam discharge increasing to 25 Kcfs, Dworshak Hatchery spring Chinook were released on the morning of Monday, March 20th. In addition, spring Chinook at the Nez Perce Tribal Hatchery were also released on the morning of March 20th to get ahead of the planned increase in outflows from Dworshak Dam. With respect to the steelhead that remained at Dworshak Hatchery, three different systems feed different steelhead rearing ponds at the hatchery. After the releases from Clearwater Hatchery are complete, reservoir water can be diverted to one of these systems at Dworshak Hatchery. System 1 will be a mix of water from tailrace and reservoir water (1:1 ratio by end of the week) and, therefore, will have much lower TDG levels. Juvenile steelhead in System 1 (0.9-1.0 million) are expected to be held for as long as possible. Systems 2 and 3 are fed exclusively with river water from the tailrace and have the highest exposure to TDG (105-106% TDG). Fish from these systems (about 1.3 million total) were released this week, which is approximately 3 weeks earlier than originally planned.

Currently, Dworshak is releasing a total outflow of 25 Kcfs, with spill levels around 20 Kcfs, which is producing TDG below Dworshak between 125-126%. After degassing the river water, water input to the hatchery has been 105-106%.

Water Supply

Precipitation throughout the Columbia Basin has varied between 94% and 272% of average at individual sub-basins over March. Precipitation above The Dalles has been 181% of average over March. Over the 2017 water year, precipitation has ranged between 123% and 144% 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 1-22, 2017		Water Year 2017 October 1, 2016 to March 22, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	5.56	231	27.8	128
Snake River Above Ice Harbor	2.48	148	18.0	137
Columbia Above The Dalles	3.42	181	20.8	127
Kootenai	5.32	224	29.0	135
Clark Fork	4.27	239	17.7	123
Flathead	6.48	272	28.2	143
Pend Oreille River Basin above Waneta Dam	5.52	253	24.6	135
Salmon River Basin	3.59	167	23.7	144
Upper Snake Tributaries	1.76	94	21.1	144
Clearwater	7.77	261	31.3	127
Willamette River above Portland	8.66	165	65.7	138

Snowpack within the Columbia Basin has been above average. Average snowpack in the Columbia River for basins above the Snake River confluence is 103% of average, for Snake River Basins the average snowpack is 129% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 118% of average.

Table 2 displays the March 23rd ESP runoff volume forecasts for multiple reservoirs along with the March COE forecasts at Libby and Dworshak. The March 23rd ESP forecast at The Dalles between April and August is 100,783 Kaf (115% of average).

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

Location	March 23, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	115	100,783
Grand Coulee (Apr-Aug)	109	62,072
Libby Res. Inflow, MT (Apr-Aug)	114 115*	6,728 6,783*
Hungry Horse Res. Inflow, MT (Apr-Aug)	111	2,154
Lower Granite Res. Inflow (Apr- July)	136	26,994
Brownlee Res. Inflow (Apr-July)	187	10,258
Dworshak Res. Inflow (Apr-July)	103 118*	2,490 2,867*

* Denotes COE March Forecast

Grand Coulee Reservoir is at 1252.3 feet (3-23-17) and drafted 0.4 feet over the last week. Outflows at Grand Coulee have ranged between 137.9 Kcfs and 200.0 Kcfs over the last week. The end of March FC Elevation at Grand Coulee is 1267.1 feet, the April 15th FC Elevation is 1249.6 ft.

The Libby Reservoir is currently at elevation 2393.7 feet (3-23-17) and has drafted 1.9 ft. over the past week. Daily average outflows at Libby Dam have increased from 4.0 Kcfs to 19.0 Kcfs over the last week. The end of March FC Elevation at Libby is 2382.1 feet.

Hungry Horse is currently at an elevation of 3541.4 feet (3-23-17) and has refilled 0.7 feet last week. Outflows at Hungry Horse have been 7.8-8.6 Kcfs over the last week. The end of March FC Elevation at Hungry Horse is 3539.8 feet.

Dworshak is currently at an elevation of 1531.6 feet (3-23-17) and has refilled 14.2 feet over the last week. Inflows to Dworshak ranged between 27.2 and 48.1 Kcfs last week. Dworshak outflows were variable last week, beginning at 22.5 Kcfs then decreasing to 7.5 Kcfs before increasing to 25 Kcfs on 3-20-17.

The Brownlee Reservoir was at an elevation of 2025.9 feet on March 23, 2017, and refilled 5.6 feet last week.

Outflows at Hells Canyon have ranged between 66.8 and 74.4 Kcfs over the last four days. The minimum flow at Hells Canyon is 8.5 Kcfs. The end of March FC Elevation at Brownlee is 2036.0 feet.

Spill

Flows in the Snake River have been very high over the past week primarily due to flood control operations at Dworshak and Brownlee dams; and, also as a function of increased precipitation and some snowmelt. Consequently, flows at Lower Granite Dam have ranged between 175 and 194 Kcfs over the past week. Flows in the Upper Columbia have also increased as Grand Coulee has increased discharge for flood control operations. Both the Snake River and Upper Columbia River flows are contributing to the high flows in the middle Columbia River.

Due to the high river flows, significant spill has occurred at all of the mainstem federal projects, and at the Upper Columbia projects. BPA has indicated that the involuntary spill that is occurring in the Federal Columbia River Power System is mostly in excess of hydraulic capacity, as several projects are presently operating with generation unit outages, limiting hydraulic capacity.

Variations in total dissolved gas levels for the implementation of the voluntary fish spill programs begin in April, therefore, the 110% standard for total dissolved gas is currently in place. However, since the spill is considered involuntary, the exceedances of the 110% standards are not interpreted as violations by the US Army Corps of Engineers.

High TDG supersaturation levels are occurring below Dworshak Dam, as well as at the Hells Canyon Complex dams on the Snake River, due to discharge in excess of hydraulic capacity for flood control operations. Consequently, TDG supersaturation levels are already in excess of 100% when the river water enters the mainstem hydrosystem. All forebay monitoring sites are now operational, and TDG supersaturation at the Lower Granite Dam forebay monitor has averaged about 107% over the past week. TDG production during lack of load involuntary spill conditions is managed throughout the FCRPS by the US Army Corps of Engineers with implementation of a spill priority list to evenly distribute spill throughout the FCRPS in an effort to manage/minimize TDG production to the extent possible. However, since the present spill is not all due to lack of load, TDG supersaturation levels are variable throughout the system and are a function of hydraulic capacity. Yesterday's tailwater TDG supersaturation average of 12 highest hourly levels were 131% at Lower Granite Dam, 123% at Little Goose Dam, 128% at Lower Monumental Dam and 132% at Ice Harbor Dam. TDG supersaturation levels have also increased at the Middle Columbia projects, ranging from a low of 123% at the tailrace of The Dalles Dam to a high near 130% below John Day Dam.

Smolt Monitoring

Bonneville Dam is the only bypass facility that is currently sampling for the Smolt Monitoring Program (SMP). Due to high flows and/or debris loads, sampling at the Imnaha, Salmon, and Snake river traps was suspended for most/all of this week. Furthermore, high flows and debris loads have prevented sampling at the Grande Ronde River Trap over the last three weeks. Sampling at all four river traps is expected to resume/begin when flows decrease to safe levels. SMP sampling at Lower Granite Dam is expected to begin this weekend while sampling at the other bypass facilities (e.g., Little Goose, Lower Monumental, McNary, John Day, and Rock Island dams) is expected to begin on or around April 1st.

Subyearling Chinook continued to dominate the samples at Bonneville Dam (BON) this week. This week's daily average passage index for subyearling Chinook was approximately 4,750, which is an increase over last week's daily average passage index of nearly 3,700 per day. Nearly all of the subyearling Chinook sampled so far this year have been fry. Yearling Chinook numbers have also increased this week, when compared to the previous week. This week's daily average passage index for yearling Chinook was about 330 per day, whereas that for last week was about 125 per day. A relatively small number of coho and sockeye were also collected this week. No steelhead juveniles were collected at BON this week. Pacific lamprey macropthalmia were encountered every day this week. This week's daily average collection for pacific macropthalmia was about 650 per day, which is an increase over last week daily average collection of nearly about 125 per day. In addition, Pacific lamprey ammocoetes were encountered in the sample from March 21st. This is the first time ammocoetes have been encountered at BON this year.

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 if 5-days per week. Sampling at WTB has been suspended since the March 16th sample due to high flows and high debris loads. Sampling will resume when river conditions are deemed safe.

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 being tallied and reported on March 6th. However, due to high river flows and debris, sampling at LEW has been suspended since the March 9th sample. Sampling will resume when river conditions are deemed safe.

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 21st. However, sampling has been suspended over most of the last week due to high flows in the Imnaha River.

Hatchery Release

Effective 2017, the FPC has reorganized our hatchery release zones in an effort to more closely match the geographical regions used by NOAA in their ESU designations. The new river zones are: 1) Lower Columbia, 2) Middle Columbia, 3) Upper Columbia, and 4) Snake River. In addition, the FPC now provides a summary of hatchery releases below Bonneville Dam (i.e., Lower Columbia River Zone) in the weekly report.

Snake River Zone: The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Approximately 2.85 million yearling spring Chinook juveniles were released into the Clearwater River and its tributaries this week. Of these, approximately 2.08 million were released about 10 days earlier than originally planned, due to elevated concerns over total dissolved gas (TDG) levels at the hatchery and/or below Dworshak Dam. These early releases occurred from Clearwater Hatchery, Dworshak NFH, and the Nez Perce Tribal Hatchery. The high TDG levels in the Dworshak tailrace are due to flood control operations at the dam. These early releases took advantage of a brief period of reduced spill from Dworshak Dam that ended on the afternoon of March 20th. Approximately 155,000 yearling summer Chinook were scheduled to be released into the Selway River this week. Approximately 136,000 coho juveniles were scheduled to be released into Lapwai Creek this week. Finally, approximately 1.91 million steelhead juveniles were released into this zone this week. Of these, 560,000 (29%) were scheduled to be released into the Snake River, below Hells Canyon Dam. The remaining 1.35 million (71%) were from Dworshak NFH and were released either directly into the Clearwater River or into Clear Creek, a tributary of the Clearwater River. The steelhead releases from Dworshak NFH were approximately three weeks earlier than originally scheduled, due to elevated TDG at Dworshak Hatchery from flood control operations at Dworshak Dam. Approximately 1.0 million steelhead juveniles remain on-station at Dworshak NFH. These steelhead juveniles are being held in a rearing pond that is receiving approximately 50% reservoir water. The hope is that TDG will be less of an issue in this rearing pond and that the hatchery will be able to hold these steelhead until their intended release date of April 10th.

Approximately 610,000 yearling fall Chinook juveniles are scheduled to be released to this zone over the next two weeks. Of these, approximately 460,000 (75%) are scheduled to be released from the Captain John Rapids Acclimation pond (above Lower Granite Dam) while the remaining 150,000 (25%) will be released from Lyons Ferry Hatchery, which is located above Lower Monumental Dam. In addition, nearly 3.3 million yearling spring Chinook juveniles are scheduled to be released to this zone over the next two weeks. These yearling Chinook releases are scheduled to occur throughout this river zone, including: 1) tributaries of the Clearwater River (39%), 2) the Salmon River (37%), 3) the Imnaha River (9%), and 4) the Grande Ronde River (8%). The remaining 7% (240,000) of the yearling spring Chinook scheduled to be released into this zone over the next two weeks will be released into the Tucannon River, which enters the Snake River above Lower Monumental Dam. Approximately 1.22 million yearling summer Chinook juveniles are scheduled to be released into the Salmon River and its tributaries over the next two weeks. About 550,000 coho juveniles are

scheduled to be released into Clear Creek, a tributary of the Clearwater River, beginning on or around April 5th. Approximately 64% of these coho juveniles are expected to be unmarked. Finally, about 3.43 million steelhead juveniles are scheduled to be released to this zone over the next two weeks. These releases are scheduled to occur on the Salmon (53%), Pahsimeroi (32%), Wallowa (9%), and Imnaha (6%) rivers.

Upper Columbia Zone: The Upper Columbia Zone encompasses the area of the Columbia River and its tributaries from Priest Rapids Dam to Chief Joseph Dam. No releases were scheduled for this zone this week. However, approximately 64,000 yearling spring Chinook are scheduled to be released into the Methow River on or around April 1st. The only other release that is scheduled for this zone over the next two weeks is a release of approximately 500 subyearling summer Chinook parr to Chelan Falls. This release is part of the WDFW COOP program.

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). Approximately 280,000 yearling fall Chinook juveniles were scheduled to be released into the Umatilla River this week. This is the only release that was scheduled for this zone this week. Approximately 524,000 yearling spring Chinook juveniles are scheduled to be released to this zone over the next two weeks. These releases are scheduled to occur in the Walla Walla (47%), Umatilla (48%), and Deschutes (5%) rives. In addition, about 2.55 million coho juveniles from Washougal Hatchery are scheduled to be released into the Klickitat River, on or around April 1st. Finally, about 162,000 summer steelhead juveniles are scheduled to be released into the Deschutes River on or around April 7th.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Approximately 736,000 yearling spring Chinook juveniles were scheduled for release into this zone this week. Of these, 436,000 (59%) were scheduled to be released into the Willamette River and its tributaries. The remaining 300,000 (41%) were scheduled to be released at Young's Bay, as part of the Select Area Fisheries program.

Approximately 890,000 yearling spring Chinook juveniles are scheduled for release into this zone over the next two weeks. Of these, approximately 650,000 (73%) are scheduled to be released from the Select Area Net Pens at Tongue Point and Young's Bay. The remaining 240,000 are scheduled to be throughout this river zone, including: 1) the Clackamas River (55,000), 2) the Sandy River (66,000), and 3) Cathlamet Channel (119,000) near the mouth of the Elochoman River. In addition, 290,000 chum juveniles are scheduled to be released into Big Creek, on or around March 31st. Just over 1.64 million coho juveniles are also scheduled to be released into this zone over the next two weeks. These coho releases are scheduled to occur in the Lewis River (1.6 million), Cathlamet Channel (39,000), and an unnamed tributary below Bonneville Dam (5,000). Approximately 728,000 summer steelhead juveniles are scheduled to be released into this zone over the next two weeks. Of these, about 92% will be released into the Willamette River and its tributaries while the remaining 8% will be released into the Kalama River. Finally, about 200,000 winter steelhead are scheduled to be released to this zone over the next two weeks. These winter steelhead releases are scheduled to occur on the Clackamas River (50%), Big Creek (30%), and Gnat Creek (20%).

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 has 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 3/22/2017), 12 adult Chinook and 1,256 adult steelhead were counted. In 2016 for the same time frame, 73 adult Chinook and 2,326 adult steelhead were counted. The 2017 Bonneville Dam winter season count of adult steelhead had 1,070 fewer fish than the 2016 count.

The Willamette Falls cumulative steelhead count from January 1st through March 22nd is 450. The 2017 Willamette Falls winter steelhead count is about 11.2%

of the 2016 count of 4,017 and 13.4% of the 10-year average count of 3,356. This year's Lower Granite steelhead count of 2,824 had 263 more fish than the 2016 count of 2,561 and has 268 fewer fish than the 10-year average count of 3,092.

The Bonneville Dam corner collector was opened on March 22nd for kelt passage. Between March 2nd and March 22nd, a total of 20 steelhead and 1 salmon 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.

The Corp of Engineers adult count project and ladder queries are now available on FPC.org at the following url: http://www.fpc.org/environment/home.asp.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 3/11/2017 to 03/24/17

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2017	388,783	03-19-17	03-19-17	N Fk Clearwater River	Clearwater River M F	SNAK
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2017	767,632	03-22-17	03-23-17	Kooskia Hatchery	Clearwater River M F	SNAK
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SU	2017	155,055	03-20-17	03-21-17	Selway River	Clearwater River M F	SNAK
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SU	2017	618,242	03-16-17	03-20-17	Powell Acclim Pond	Lochsa River	SNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2017	560,000	03-20-17	03-29-17	Hells Canyon Dam	Snake River	SNAK
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2017	250,000	03-17-17	03-17-17	Pinehurst Bridge	Little Salmon River	SNAK
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2017	480,000	03-13-17	03-16-17	Hells Canyon Dam	Snake River	SNAK
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2017	2,500,000	03-13-17	04-28-17	Rapid River Hatchery	Little Salmon River	SNAK
Idaho Dept. of Fish and Game Total					**5,719,712**					
Nez Perce Tribe	Cascade Hatchery	CO	UN	2017	136,000	03-21-17	03-21-17	Lapwai Creek	Clearwater River M F	SNAK
Nez Perce Tribe	Cascade Hatchery	CO	UN	2017	350,000	03-16-17	03-18-17	Lapwai Creek	Clearwater River M F	SNAK
Nez Perce Tribe	Clearwater Hatchery	CH1	SP	2017	483,463	03-13-17	03-16-17	Selway River	Clearwater River M F	SNAK
Nez Perce Tribe	Eagle Creek NFH	CO	UN	2017	224,000	03-12-17	03-12-17	Clear Creek	Clearwater River M F	SNAK
Nez Perce Tribe	Kooskia NFH	CH1	SP	2017	680,000	03-17-17	03-17-17	Kooskia Hatchery	Clearwater River M F	SNAK
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2017	190,000	03-20-17	03-20-17	Nez Perce Tribal Hatchery	Clearwater River M F	SNAK
Nez Perce Tribe Total					**2,063,463**					
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH1	SP	2017	150,000	03-15-17	03-15-17	Blind Slough	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH1	SP	2017	300,000	03-22-17	03-22-17	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife	Eagle Creek NFH	CH1	SP	2017	240,000	03-15-17	03-15-17	Eagle Creek Hatchery	Eagle Creek	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	CH1	SP	2017	55,000	03-15-17	03-15-17	Clackamas River	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	ST	WI	2017	25,000	03-15-17	03-15-17	Clackamas River	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Gnat Creek Hatchery	CH1	SP	2017	400,000	03-15-17	03-15-17	Gnat Creek Hatchery	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2017	169,500	03-16-17	04-15-17	Big Canyon Acclim.Pd (Grande Ronde)	Wallowa River	SNAK
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2017	210,000	03-15-17	03-15-17	Imnaha River	Imnaha River	SNAK
Oregon Dept. of Fish and Wildlife	Marion Forks Hatchery	CH1	SP	2017	50,000	03-15-17	03-15-17	S Fk Santiam River	Santiam River	LCOL
Oregon Dept. of Fish and Wildlife	Marion Forks Hatchery	CH1	SP	2017	100,000	03-15-17	03-15-17	Mollala River	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Marion Forks Hatchery	CH1	SP	2017	635,000	03-15-17	03-15-17	S Fk Santiam River	Santiam River	LCOL
Oregon Dept. of Fish and Wildlife	McKenzie Hatchery	CH1	SP	2017	202,000	03-21-17	03-21-17	McKenzie Hatchery	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Willamette Hatchery	CH1	SP	2017	234,000	03-24-17	03-24-17	Dexter Pond	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife Total					**2,770,500**					
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2017	1,500,000	03-20-17	03-20-17	Dworshak Hatchery	Clearwater River M F	SNAK
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2017	402,000	03-21-17	03-23-17	Clear Creek	Clearwater River M F	SNAK
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2017	950,000	03-21-17	03-23-17	Dworshak Hatchery	Clearwater River M F	SNAK
U.S. Fish and Wildlife Service Total					**2,852,000**					
Umatilla Tribe	Bonneville Hatchery	CH1	FA	2017	283,101	03-22-17	03-22-17	Pendelton Acclim Pond	Umatilla River	MCOL
Umatilla Tribe Total					**283,101**					
Washington Dept. of Fish and Wildlife	Fallert Creek Hatchery	CH1	SP	2017	535,000	03-01-17	03-15-17	Fallert Creek Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife Total					**535,000**					
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2017	208,500	03-15-17	05-15-17	Clark Flat Acclim Pond	Yakima River	MCOL
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2017	218,451	03-15-17	05-15-17	Easton Pond	Yakima River	MCOL

Yakama Tribe	Cle Elem Hatchery	CH1	SP	2017	228,881	03-15-17	05-15-17	Jack Creek Acclim Pond	Yakima River	MCOL
Yakama Tribe Total					**655,832**					
Grand Total					**14,879,608**					

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: 3/25/2017 to 4/7/2017

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2017	1,289,231	03-27-17	03-30-17	Red River	S Fk Clearwater River	SNAK
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2017	187,154	04-05-17	04-07-17	Little Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2017	281,898	04-03-17	04-06-17	Pahsimeroi River	Pahsimeroi River	SNAK
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2017	162,707	04-03-17	04-06-17	Knox Bridge	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2017	946,134	04-03-17	04-06-17	Knox Bridge	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2017	560,000	03-20-17	03-29-17	Hells Canyon Dam	Snake River	SNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2017	805,000	03-30-17	04-17-17	Pahsimeroi River	Pahsimeroi River	SNAK
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2017	119,299	04-03-17	04-03-17	Sawtooth Hatchery	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2017	1,114,789	04-03-17	04-03-17	Sawtooth Hatchery	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game Total					**5,466,212**					
Nez Perce Tribe	Dworshak NFH	CO	UN	2017	550,000	04-05-17	04-05-17	Clear Creek	Clearwater River M F	SNAK
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2017	150,000	04-03-17	04-07-17	Cpt John Acclim Pond	Snake River	SNAK
Nez Perce Tribe	McCall Hatchery	CH1	SU	2017	111,405	04-01-17	04-02-17	Johnson Cr Idaho	South Fork Salmon River	SNAK
Nez Perce Tribe Total					**811,405**					
Oregon Dept. of Fish and Wildlife	Big Creek Hatchery	CM	UN	2017	290,000	03-31-17	03-31-17	Big Creek Hatchery	Big Creek	LCOL
Oregon Dept. of Fish and Wildlife	Big Creek Hatchery	ST	WI	2017	60,000	04-07-17	04-07-17	Big Creek Hatchery	Big Creek	LCOL
Oregon Dept. of Fish and Wildlife	Clackamas Hatchery	CH1	SP	2017	66,000	04-06-17	04-06-17	Bull Run Acclimation	Sandy River	LCOL
Oregon Dept. of Fish and Wildlife	Clackamas Hatchery	ST	SU	2017	125,000	04-07-17	04-07-17	Clackamas Hatchery	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH1	SP	2017	250,000	03-31-17	03-31-17	Tongue Pt	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH1	SP	2017	400,000	03-31-17	03-31-17	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife	Eagle Creek NFH	ST	WI	2017	100,000	03-31-17	03-31-17	Eagle Creek Hatchery	Eagle Creek	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	CH1	SP	2017	55,000	04-07-17	04-07-17	Clackamas River	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Gnat Creek Hatchery	ST	WI	2017	40,000	04-07-17	04-07-17	Gnat Creek Hatchery	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2017	215,000	04-01-17	04-30-17	Little Sheep Creek	Imnaha River	SNAK
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2017	320,000	04-01-17	04-01-17	Wallowa Acclim Pond	Wallowa River	SNAK
Oregon Dept. of Fish and Wildlife	Leaburg Hatchery	ST	SU	2017	108,000	04-07-17	04-07-17	McKenzie River	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2017	250,000	04-01-17	04-01-17	Lookingglass Creek	Grande Ronde River	SNAK
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2017	280,000	04-01-17	04-01-17	Imnaha Acclim Pond	Imnaha River	SNAK
Oregon Dept. of Fish and Wildlife	Roaring River Hatchery	ST	SU	2017	96,000	04-01-17	04-01-17	Willamette River	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2017	162,000	04-07-17	04-07-17	Deschutes River	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	South Santiam Hatchery	ST	SU	2017	55,000	03-31-17	03-31-17	Minto Pond	Santiam River	LCOL
Oregon Dept. of Fish and Wildlife	South Santiam Hatchery	ST	SU	2017	161,500	04-03-17	04-03-17	South Santiam Hatchery	Santiam River	LCOL
Oregon Dept. of Fish and Wildlife	Willamette Hatchery	ST	SU	2017	61,000	04-05-17	04-05-17	Dexter Pond	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Willamette Hatchery	ST	SU	2017	66,000	03-31-17	03-31-17	Minto Pond	Santiam River	LCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2017	7,500	03-25-17	03-25-17	Metolius River	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2017	7,500	03-25-17	03-25-17	Wychus Creek	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2017	10,000	03-25-17	03-25-17	Crooked River (OR)	Deschutes River	MCOL

Oregon Dept. of Fish and Wildlife Total					**3,185,500**					
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2017	120,000	03-31-17	04-01-17	McNabb/Salmon River	Salmon River (ID)	SNAK
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2017	1,500,000	04-04-17	04-07-17	Sawtooth Hatchery	Salmon River (ID)	SNAK
U.S. Fish and Wildlife Service Total					**1,620,000**					
Umatilla Tribe	Carson NFH	CH1	SP	2017	249,095	03-28-17	03-28-17	Walla Walla River	Walla Walla River	MCOL
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2017	250,000	04-03-17	04-03-17	Imeques Acclim Pond	Umatilla River	MCOL
Umatilla Tribe Total					**499,095**					
Washington Dept. of Fish and Wildlife	COOP	CH1	SP	2017	55,000	03-01-17	04-01-17	Cowlitz River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2017	500	04-01-17	04-01-17	Chelan Falls	Rocky Reach Pool	UCOL
Washington Dept. of Fish and Wildlife	COOP	CO	NO	2017	5,000	04-01-17	04-01-17	Cathlamet Channel Net Pen	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	COOP	CO	NO	2018	39,000	04-01-17	06-01-17	Below Bonn Dam	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Hatchery	CH1	SP	2017	119,000	04-01-17	04-15-17	Cathlamet Channel Net Pen	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	Kalama Falls Hatchery	ST	SU	2017	55,000	04-01-17	04-01-17	Kalama Falls Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Lewis River Hatchery	CO	NO	2017	900,000	04-01-17	04-10-17	Lewis River Hatchery	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Lewis River Hatchery	CO	SO	2017	700,000	04-01-17	04-10-17	Lewis River Hatchery	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2017	460,000	04-01-17	04-06-17	Lyons Ferry Hatchery	Snake River	SNAK
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2017	64,000	04-01-17	04-01-17	Chewuch Acclim Pond	Methow River	UCOL
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2017	240,000	04-01-17	04-15-17	Curl Lake Acclim Pond	Tucannon River	SNAK
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2017	2,550,000	04-01-17	04-01-17	Klickitat River	Klickitat River	MCOL
Washington Dept. of Fish and Wildlife Total					**5,187,500**					
Grand Total					**16,769,712**					

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

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
03/10/2017	101.5	0.0	106.9	0.0	107.5	0.0	104.4	0.0	107.5	0.4	102.2	0.0	104.9	0.0
03/11/2017	107.1	0.0	110.6	0.0	111.7	0.0	108.4	0.0	114.6	0.0	107.7	0.0	110.7	0.0
03/12/2017	104.1	0.0	100.5	0.0	100.1	0.0	96.9	0.0	98.2	0.0	99.1	0.4	94.5	12.7
03/13/2017	90.3	0.0	95.2	0.0	103.3	0.0	105.4	0.0	111.6	0.0	121.6	0.0	117.7	0.0
03/14/2017	89.1	0.0	86.3	0.0	76.3	0.0	71.0	0.2	74.0	0.0	94.0	2.8	101.3	0.0
03/15/2017	106.7	0.0	108.0	0.0	111.4	0.0	108.3	0.0	115.5	0.0	100.8	10.3	95.4	0.0
03/16/2017	103.4	0.0	100.9	3.5	110.4	0.0	109.0	0.1	117.4	0.0	131.4	5.5	126.5	0.0
03/17/2017	147.1	0.6	147.4	49.7	145.7	1.4	141.1	14.4	147.9	5.6	138.0	1.7	133.8	33.0
03/18/2017	137.9	0.0	136.1	42.3	141.4	10.5	139.2	12.4	146.4	1.7	144.4	7.5	154.8	74.0
03/19/2017	150.6	7.2	150.0	79.9	151.9	13.5	149.1	19.2	151.2	9.1	162.0	18.8	158.7	68.6
03/20/2017	171.6	7.4	171.9	84.2	182.9	38.8	190.0	73.5	190.0	34.4	202.8	49.5	210.3	83.9
03/21/2017	173.1	13.0	170.0	91.9	178.6	29.5	180.7	57.8	178.8	24.1	189.8	40.7	192.7	69.9
03/22/2017	199.8	29.7	196.2	118.0	200.9	52.2	202.2	74.0	196.1	41.6	211.4	64.0	210.4	83.7
03/23/2017	205.4	29.0	215.6	137.2	221.8	70.3	224.8	90.5	215.1	64.5	250.5	94.3	253.1	124.5

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
03/10/2017	19.5	14.5	---	57.1	133.9	45.5	127.3	10.0	128.3	43.7	131.7	75.6
03/11/2017	20.5	15.5	---	59.4	151.2	62.0	146.8	21.2	161.4	77.4	166.1	108.2
03/12/2017	21.5	16.4	---	59.6	141.0	52.3	138.7	17.0	146.3	62.4	153.0	95.1
03/13/2017	22.4	17.3	---	59.6	137.3	49.6	133.1	15.7	142.8	60.0	148.3	90.6
03/14/2017	22.4	17.2	---	59.6	144.0	56.3	137.3	11.1	147.5	66.7	147.3	90.0
03/15/2017	22.4	17.3	---	59.6	162.6	74.8	154.0	22.9	163.2	80.2	167.6	110.0
03/16/2017	19.3	14.3	---	63.2	191.6	100.7	178.5	49.2	200.2	118.0	201.8	143.2
03/17/2017	12.4	7.5	---	68.2	189.2	99.3	192.2	64.1	213.1	131.6	212.9	153.9
03/18/2017	12.4	7.5	---	66.9	174.9	85.5	164.6	36.2	175.0	94.8	179.6	121.4
03/19/2017	7.8	3.0	---	68.1	194.0	103.1	190.8	62.7	204.1	123.5	202.5	143.5
03/20/2017	13.7	8.9	---	68.5	180.5	101.4	178.8	60.1	193.8	116.4	198.5	140.6
03/21/2017	25.0	20.2	---	72.3	184.7	107.8	191.0	70.4	204.3	137.2	198.4	144.3
03/22/2017	25.0	20.2	---	72.6	186.1	106.6	181.6	56.1	192.3	129.0	192.8	141.5
03/23/2017	24.9	20.1	---	72.4	184.1	105.7	181.3	59.9	194.3	123.7	194.9	139.1

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
03/10/2017	271.2	63.3	265.5	32.3	260.2	35.0	299.6	67.5	103.9	115.8
03/11/2017	298.0	83.6	292.8	59.4	280.1	37.2	306.8	79.1	99.8	115.5
03/12/2017	280.0	69.5	303.7	68.0	289.1	40.9	336.4	103.9	106.7	113.5
03/13/2017	274.7	69.3	286.8	49.0	277.6	49.7	320.6	87.7	105.3	115.2
03/14/2017	282.8	73.8	319.0	78.3	315.9	83.4	351.2	122.9	102.5	113.4
03/15/2017	295.4	91.9	338.1	96.2	327.1	103.7	370.8	137.5	107.1	113.8
03/16/2017	338.7	132.0	340.2	90.6	319.0	105.4	371.2	143.3	103.5	113.0
03/17/2017	381.2	175.7	368.8	105.1	358.3	150.5	389.4	162.2	105.7	109.1
03/18/2017	375.7	160.4	400.0	132.7	383.7	161.5	411.8	186.8	107.1	105.5
03/19/2017	372.4	158.4	369.3	104.3	357.3	149.5	409.6	190.1	107.9	99.2
03/20/2017	420.5	207.2	404.7	143.3	384.3	179.8	417.6	202.5	107.0	95.7
03/21/2017	409.3	202.2	428.5	170.0	427.1	229.0	443.2	228.0	102.7	100.1
03/22/2017	416.6	216.1	435.6	174.0	422.9	249.2	450.4	240.2	100.2	97.7
03/23/2017	445.9	244.5	447.5	187.7	437.3	269.0	458.6	239.9	99.6	106.7

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
3/10	96.3	96.4	96.6	24	---	---	---	0	99.9	100.1	100.1	24	100.0	100.3	100.5	24	99.5	99.6	99.7	24
3/11	96.5	96.8	96.9	24	---	---	---	0	100.2	100.6	100.7	24	99.9	100.3	100.7	24	99.7	99.9	100.2	24
3/12	96.2	96.4	96.6	23	---	---	---	0	100.1	100.2	100.4	23	100.0	100.2	100.4	23	99.3	99.5	99.7	23
3/13	96.3	96.4	96.5	24	---	---	---	0	100.7	101.0	101.1	24	100.4	100.7	100.8	24	100.1	100.3	100.4	24
3/14	96.0	96.0	96.2	24	---	---	---	0	101.6	101.8	101.9	24	101.2	101.5	102.3	24	100.6	100.9	101.1	24
3/15	96.3	96.5	96.6	24	---	---	---	0	102.3	102.5	102.6	24	101.6	101.8	102.1	24	101.6	102.0	102.1	24
3/16	96.3	96.5	96.6	24	---	---	---	0	101.6	101.8	102.4	24	101.2	101.5	101.9	24	100.9	101.2	101.7	24
3/17	95.7	96.0	96.2	24	---	---	---	0	102.5	103.4	103.7	24	102.2	103.6	109.6	24	101.2	101.8	102.1	24
3/18	96.6	96.8	97.0	24	---	---	---	0	104.1	104.4	104.6	24	102.4	102.8	103.2	24	102.5	103.0	103.2	24
3/19	96.3	96.6	98.5	24	---	---	---	0	102.6	102.7	103.0	24	108.9	112.7	114.3	24	101.9	102.6	103.4	24
3/20	95.9	96.2	96.3	24	---	---	---	0	102.9	103.2	103.4	24	110.5	112.0	112.8	24	102.1	102.2	102.7	15
3/21	95.7	96.1	96.3	24	---	---	---	0	103.9	104.1	104.2	24	115.3	117.5	121.6	24	109.9	111.1	111.4	24
3/22	96.0	96.1	96.2	24	---	---	---	0	104.0	104.1	104.2	24	121.2	122.0	123.0	24	111.4	112.2	112.4	24
3/23	101.1	106.1	111.3	23	---	---	---	0	103.6	103.8	103.9	23	118.1	120.4	121.7	23	115.8	118.1	119.4	23

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
3/10	99.2	99.4	99.7	24	98.5	98.7	98.9	22	98.9	99.2	99.6	22	99.2	99.4	99.5	24	99.4	99.5	99.9	23
3/11	99.2	99.6	99.8	24	99.0	99.4	99.7	24	99.3	99.8	100.3	24	99.6	100.0	100.1	24	99.7	100.0	100.1	23
3/12	99.0	99.2	99.4	23	98.5	98.6	98.8	23	98.9	99.1	99.5	23	99.5	99.6	99.9	23	99.5	99.6	99.9	20
3/13	99.7	99.9	100.2	24	99.0	99.4	99.6	24	99.4	99.8	100.1	24	100.2	100.5	100.8	24	100.1	100.3	100.7	20
3/14	100.4	100.8	101.4	24	100.0	100.4	100.5	24	100.4	100.8	101.1	24	101.0	101.3	101.4	24	101.0	101.3	102.3	22
3/15	101.2	101.5	101.6	24	100.6	100.9	101.1	24	101.0	101.3	101.5	24	101.6	101.9	102.2	24	101.5	101.8	102.0	24
3/16	101.8	103.0	104.4	24	100.3	100.7	101.2	24	100.4	100.7	101.2	24	100.9	101.2	101.6	24	100.8	101.0	101.8	22
3/17	114.8	117.9	121.7	24	101.1	101.7	102.7	24	101.1	101.8	102.7	24	101.1	101.5	101.9	24	107.4	112.4	114.6	23
3/18	113.4	117.1	117.8	24	107.3	108.5	109.1	24	108.2	111.4	118.5	24	102.4	102.6	102.7	23	107.7	110.1	115.3	22
3/19	117.6	119.5	122.1	24	107.6	107.6	107.7	3	109.3	109.3	109.4	3	102.7	103.9	108.2	24	107.4	112.4	121.8	24
3/20	119.1	119.5	119.9	24	---	---	---	0	---	---	---	0	108.1	109.4	112.1	24	121.7	122.6	123.8	22
3/21	119.5	119.9	121.1	24	112.4	113.0	114.1	15	114.4	114.9	116.4	15	114.6	117.1	118.0	24	122.3	122.9	123.4	20
3/22	121.7	122.3	123.0	24	114.9	115.6	116.5	24	119.6	120.5	123.4	24	114.8	115.9	117.6	24	124.2	124.8	125.2	21
3/23	119.5	121.4	122.5	23	117.1	118.1	119.1	23	122.5	123.6	127.8	23	118.3	118.8	120.0	23	126.2	126.5	127.0	18

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
3/10	99.4	99.8	101.3	24	99.6	100.1	101.5	22	100.0	100.2	100.5	24	100.1	100.2	100.5	24	100.7	101.0	101.3	24
3/11	99.2	99.6	99.9	23	99.3	99.6	99.9	22	100.1	100.3	100.5	24	100.2	100.5	100.9	24	100.8	101.1	101.4	24
3/12	99.0	99.3	99.7	21	99.1	99.3	99.7	20	99.7	99.8	99.9	23	100.4	100.9	103.6	23	100.2	100.3	100.6	23
3/13	99.5	100.1	100.4	23	99.8	100.0	100.5	19	100.3	100.4	100.6	24	100.5	100.6	101.0	24	100.6	100.8	100.8	24
3/14	100.4	100.7	100.8	22	100.8	100.9	101.2	20	100.9	101.1	101.2	24	101.8	102.9	117.2	24	101.2	101.4	101.6	24
3/15	101.2	101.3	101.5	24	101.3	101.4	101.6	20	101.4	101.7	101.9	24	106.4	111.0	122.3	24	101.8	102.0	102.1	24
3/16	100.4	100.7	100.9	23	100.4	100.7	101.1	21	100.6	100.8	101.2	24	102.7	104.6	117.7	24	103.3	103.9	104.8	24
3/17	101.4	102.6	105.1	24	102.5	104.4	107.0	23	101.2	101.6	101.9	24	101.6	102.1	103.7	24	102.5	102.8	103.0	24
3/18	103.5	104.4	104.7	24	104.2	105.2	106.2	22	102.2	102.5	102.8	24	103.9	105.3	114.6	24	103.1	103.5	103.6	24
3/19	103.0	104.1	105.2	24	104.3	106.0	110.5	23	101.4	101.9	102.5	24	104.9	107.0	117.9	21	104.6	107.5	110.7	24
3/20	111.1	113.3	113.8	23	114.0	115.6	117.8	21	102.7	103.0	103.3	24	---	---	---	0	108.3	112.5	114.2	24
3/21	114.9	116.1	116.8	22	116.6	117.2	117.8	19	107.2	110.0	112.3	24	---	---	---	0	112.0	112.5	114.3	24
3/22	117.3	117.6	118.0	22	119.5	120.4	121.2	20	113.2	113.8	114.2	24	---	---	---	0	113.2	114.7	115.6	24
3/23	117.7	120.0	121.0	19	122.9	123.9	125.0	17	---	---	---	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
3/10	100.6	100.8	100.9	24	---	---	---	0	124.3	124.4	124.5	24	---	---	---	0	---	---	---	0
3/11	100.4	100.7	101.0	24	---	---	---	0	124.6	124.7	125.1	24	109.7	110.2	110.5	24	---	---	---	0
3/12	101.9	104.0	113.5	23	---	---	---	0	124.7	124.8	125.2	23	110.7	111.3	111.7	23	---	---	---	0
3/13	100.6	101.0	101.2	24	---	---	---	0	125.2	125.3	125.4	24	111.8	111.9	112.0	24	---	---	---	0
3/14	101.3	101.7	102.0	24	---	---	---	0	125.3	125.4	126.0	24	110.8	111.3	111.9	24	---	---	---	0
3/15	102.2	102.7	104.9	24	---	---	---	0	125.4	125.5	125.7	24	108.7	109.1	109.7	24	---	---	---	0
3/16	104.5	106.9	111.9	24	---	---	---	0	123.8	125.4	125.6	24	106.1	107.0	107.8	24	104.8	105.1	105.4	16
3/17	105.4	108.7	112.8	24	---	---	---	0	119.7	119.9	120.1	24	104.7	105.1	105.2	24	105.9	106.7	107.0	24
3/18	112.1	114.4	115.8	24	---	---	---	0	119.9	120.0	120.4	24	104.7	104.9	105.0	24	106.1	106.5	106.6	24
3/19	112.2	114.6	115.7	24	---	---	---	0	107.7	108.9	114.5	24	102.1	102.7	103.7	24	104.4	104.7	105.2	24
3/20	115.7	117.7	118.4	24	---	---	---	0	115.5	122.5	126.2	24	104.7	107.3	109.8	24	105.9	106.5	106.7	24
3/21	116.3	116.8	118.4	24	---	---	---	0	126.3	126.5	126.6	24	110.0	110.3	110.7	24	106.8	107.1	107.4	24
3/22	118.5	120.1	120.8	24	---	---	---	0	125.9	126.1	126.1	24	109.7	109.9	110.1	24	106.6	106.8	107.0	24
3/23	---	---	---	0	---	---	---	0	125.6	125.7	125.9	23	109.6	110.2	110.5	23	106.7	107.2	107.6	23

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
3/10	---	---	---	0	---	---	---	0	119.4	122.5	123.2	24	---	---	---	0	106.3	108.7	109.3	24
3/11	---	---	---	0	---	---	---	0	125.1	126.1	127.1	24	---	---	---	0	111.9	112.8	114.3	24
3/12	---	---	---	0	---	---	---	0	122.1	122.7	123.3	23	---	---	---	0	113.6	114.3	114.7	23
3/13	---	---	---	0	107.8	107.9	108.4	13	119.7	121.5	123.4	24	---	---	---	0	115.2	115.5	115.7	24
3/14	106.3	106.4	106.8	17	108.5	108.5	108.6	24	120.2	121.4	122.5	24	---	---	---	0	115.9	116.2	116.5	24
3/15	105.6	105.8	106.0	24	108.3	108.5	108.6	24	123.9	124.9	125.0	24	---	---	---	0	115.8	116.8	117.9	24
3/16	104.8	105.3	105.7	24	106.0	106.6	107.7	24	130.7	132.5	133.3	24	116.2	116.2	116.9	11	121.6	124.3	127.2	24
3/17	103.4	103.8	104.2	24	105.9	106.3	106.5	24	131.4	132.7	133.3	24	120.0	122.2	124.1	24	125.7	127.2	127.9	24
3/18	103.3	103.7	103.8	24	106.7	106.9	107.1	24	128.4	129.0	129.4	24	124.8	125.8	126.1	24	120.2	120.5	120.6	24
3/19	101.8	102.2	102.4	24	105.3	105.6	106.1	24	131.5	131.8	131.9	24	120.0	120.6	122.0	24	125.1	125.5	125.7	24
3/20	102.1	103.0	105.3	24	105.5	105.9	106.2	24	129.2	130.7	131.7	24	122.2	123.7	124.8	24	124.7	126.6	127.6	24
3/21	107.1	107.5	107.9	24	106.6	106.9	107.2	24	129.5	130.8	132.2	24	124.7	125.1	125.9	24	127.2	128.9	129.7	24
3/22	106.8	107.1	107.8	24	107.3	107.5	107.5	24	130.0	130.7	131.3	24	124.0	124.4	124.9	24	123.2	124.6	126.6	24
3/23	106.9	107.5	108.1	23	106.9	107.1	107.4	23	130.1	131.1	131.5	23	122.1	122.7	123.2	23	123.8	125.9	126.8	23

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
3/10	---	---	---	0	116.4	118.8	119.1	24	---	---	---	0	120.1	121.4	122.1	24	---	---	---	0
3/11	---	---	---	0	122.3	123.4	124.1	24	---	---	---	0	123.0	124.5	125.2	24	---	---	---	0
3/12	---	---	---	0	120.6	120.9	121.1	23	---	---	---	0	121.0	121.4	121.6	23	---	---	---	0
3/13	---	---	---	0	120.3	120.3	120.4	24	115.6	115.6	115.7	8	120.4	120.5	120.6	24	---	---	---	0
3/14	---	---	---	0	121.5	122.3	123.0	24	116.7	117.1	117.3	24	120.3	121.2	121.9	24	---	---	---	0
3/15	116.9	116.9	117.4	11	123.8	124.8	125.9	24	118.5	118.9	119.0	24	123.9	125.7	126.0	24	---	---	---	0
3/16	114.4	114.9	115.6	24	126.7	127.6	128.1	24	118.0	118.4	119.0	24	130.5	133.5	135.1	24	---	---	---	0
3/17	121.5	124.7	126.1	24	128.0	128.8	129.6	24	123.2	125.0	126.2	24	133.4	134.8	135.3	24	---	---	---	0
3/18	123.9	125.5	126.6	24	125.7	126.1	127.2	24	125.8	127.0	127.4	24	126.4	127.0	129.4	24	---	---	---	0
3/19	119.5	120.5	122.7	24	127.4	127.8	128.0	24	121.3	122.2	123.3	24	131.3	132.8	134.4	24	---	---	---	0
3/20	123.5	123.7	124.0	24	127.1	127.6	127.9	24	124.7	125.3	125.8	24	130.8	132.4	134.4	24	---	---	---	0
3/21	124.6	125.5	126.4	24	128.8	129.9	134.4	24	125.4	125.7	126.1	24	131.3	133.4	134.4	24	---	---	---	0
3/22	125.0	126.9	127.8	24	128.8	131.3	135.3	24	126.4	127.2	128.4	24	131.6	133.4	134.4	24	---	---	---	0
3/23	122.3	122.9	124.2	23	127.0	127.4	127.7	23	125.5	126.1	126.9	23	131.6	131.7	131.9	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	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
3/10	---	---	---	0	112.6	113.2	114.3	24	---	---	---	0	112.9	113.9	114.3	24	---	---	---	0
3/11	---	---	---	0	114.6	115.7	116.1	24	---	---	---	0	116.4	118.9	119.3	24	---	---	---	0
3/12	---	---	---	0	113.9	114.3	115.4	23	---	---	---	0	117.2	119.1	119.4	23	---	---	---	0
3/13	---	---	---	0	113.9	114.7	115.2	24	---	---	---	0	115.6	117.0	118.3	24	---	---	---	0
3/14	108.1	108.1	109.0	12	114.1	115.3	115.5	24	---	---	---	0	119.3	120.2	120.8	24	---	---	---	0
3/15	106.9	107.5	107.7	24	116.0	116.4	116.7	24	---	---	---	0	122.6	124.3	127.7	24	111.0	111.1	112.3	13
3/16	103.9	104.2	105.4	24	118.0	119.9	120.5	24	109.7	109.7	110.0	13	120.3	123.5	124.5	24	110.6	111.5	112.1	24
3/17	106.1	107.0	107.6	24	121.3	121.9	122.4	24	110.7	111.0	111.4	20	123.2	128.4	131.0	24	110.4	111.0	112.2	24
3/18	108.6	109.4	109.8	24	121.2	121.7	122.4	24	111.5	111.9	112.1	24	128.7	131.8	133.5	24	114.9	115.5	115.8	24
3/19	105.2	106.2	107.6	24	120.4	120.7	121.0	24	111.3	112.2	112.9	24	123.8	124.5	125.3	24	112.0	113.0	113.4	24
3/20	109.0	111.4	114.0	24	123.2	124.7	125.0	24	115.6	116.9	117.5	24	124.6	126.5	131.8	24	115.0	116.2	117.9	24
3/21	112.5	113.5	114.3	24	123.1	123.4	123.8	24	118.0	118.1	118.3	24	123.3	123.9	124.3	24	118.0	118.3	118.6	24
3/22	113.1	113.9	115.0	24	123.8	124.5	127.9	24	117.6	117.8	118.0	24	123.2	124.6	125.4	24	117.0	117.4	118.6	24
3/23	113.4	114.6	116.1	23	124.2	124.4	124.9	23	119.3	120.0	120.5	23	127.5	129.2	130.0	23	119.2	120.7	122.0	23

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
3/10	108.7	110.9	111.5	24	109.8	110.0	110.4	24	---	---	---	0	109.3	109.7	109.9	24	116.9	117.5	122.7	24
3/11	105.9	106.2	107.2	24	110.2	111.3	111.5	24	---	---	---	0	110.2	110.6	110.9	24	117.2	117.5	117.6	24
3/12	108.3	108.8	109.1	23	106.8	107.2	107.8	23	---	---	---	0	110.0	110.3	110.7	23	118.2	118.4	118.5	23
3/13	108.3	108.7	108.9	24	110.1	110.7	110.9	24	111.9	111.9	112.5	11	109.8	110.2	110.8	24	117.8	118.0	118.5	24
3/14	110.1	111.0	111.7	24	110.2	110.4	110.5	24	113.0	113.5	113.9	24	111.2	111.5	111.7	24	119.6	120.2	122.3	24
3/15	113.0	113.8	114.4	24	111.8	112.6	113.1	24	114.4	114.6	115.0	24	112.9	113.3	113.4	24	120.5	120.8	121.2	24
3/16	114.1	114.8	117.1	24	112.4	113.3	114.1	24	114.8	115.5	116.0	24	113.3	114.2	114.6	24	121.0	121.1	121.6	24
3/17	118.1	119.4	120.5	24	114.5	115.0	115.9	24	117.1	117.8	119.0	24	114.7	115.0	115.2	24	121.9	122.5	123.2	24
3/18	120.3	122.1	123.4	24	116.8	117.2	117.7	24	119.1	119.4	120.2	24	116.4	116.9	117.2	24	123.4	123.5	123.7	24
3/19	117.9	118.5	119.1	24	117.5	117.8	117.9	24	120.1	120.4	120.6	24	118.7	119.7	120.1	24	123.3	123.4	123.5	24
3/20	120.3	121.6	122.1	24	117.8	118.3	118.7	24	120.9	121.5	122.4	24	117.6	118.1	119.1	24	123.6	124.1	124.8	24
3/21	121.8	122.1	122.5	24	120.8	121.8	122.2	24	123.7	124.5	125.4	24	119.6	120.7	121.5	24	125.2	125.6	126.1	24
3/22	121.0	121.8	122.5	24	121.9	122.2	122.5	24	124.8	125.3	125.8	24	122.8	123.6	123.9	24	126.3	126.8	128.3	24
3/23	121.9	123.0	123.8	23	121.2	122.0	123.1	23	124.4	124.9	125.4	23	123.7	124.2	124.5	23	126.2	126.6	129.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center Updated: 3/24/2017 12:57

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)
03/10/2017	*	38	3	---	---	---	---	---	---	---	---	83
03/11/2017		---	20	---	---	---	---	---	---	---	---	74
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	80
03/13/2017		117	---	---	---	---	---	---	---	---	---	56
03/14/2017		548	---	---	---	---	---	---	---	---	---	95
03/15/2017	*	321	44	---	---	---	---	---	---	---	---	168
03/16/2017		301	---	---	---	---	---	---	---	---	---	317
03/17/2017		---	---	---	---	---	---	---	---	---	---	479
03/18/2017	*	---	18	---	---	---	---	---	---	---	---	358
03/19/2017		---	---	---	---	---	---	---	---	---	---	193
03/20/2017		---	---	---	---	---	---	---	---	---	---	324
03/21/2017		---	---	---	---	---	---	---	---	---	---	389
03/22/2017		---	---	---	---	---	---	---	---	---	---	192
03/23/2017		---	---	---	---	---	---	---	---	---	---	364
03/24/2017		---	---	---	---	---	---	---	---	---	---	323
Total:		**1,325**	**85**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3,495**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**265**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**233**
YTD		**1,402**	**513**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**4,059**

				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)
03/10/2017	*	0	0	---	---	---	---	---	---	---	---	2,401
03/11/2017		---	0	---	---	---	---	---	---	---	---	6,456
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	3,476
03/13/2017		0	---	---	---	---	---	---	---	---	---	2,456
03/14/2017		0	---	---	---	---	---	---	---	---	---	2,400
03/15/2017	*	0	0	---	---	---	---	---	---	---	---	3,122
03/16/2017		0	---	---	---	---	---	---	---	---	---	5,307
03/17/2017		---	---	---	---	---	---	---	---	---	---	3,735
03/18/2017	*	---	0	---	---	---	---	---	---	---	---	3,635
03/19/2017		---	---	---	---	---	---	---	---	---	---	4,228
03/20/2017		---	---	---	---	---	---	---	---	---	---	2,975
03/21/2017		---	---	---	---	---	---	---	---	---	---	6,701
03/22/2017		---	---	---	---	---	---	---	---	---	---	5,523
03/23/2017		---	---	---	---	---	---	---	---	---	---	6,526
03/24/2017		---	---	---	---	---	---	---	---	---	---	3,209
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**62,150**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,143**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68,275**

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)
03/10/2017	*	0	0	---	---	---	---	---	---	---	---	24
03/11/2017		---	0	---	---	---	---	---	---	---	---	234
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	241
03/13/2017		0	---	---	---	---	---	---	---	---	---	0
03/14/2017		0	---	---	---	---	---	---	---	---	---	14
03/15/2017	*	0	0	---	---	---	---	---	---	---	---	0
03/16/2017		0	---	---	---	---	---	---	---	---	---	32
03/17/2017		---	---	---	---	---	---	---	---	---	---	0
03/18/2017	*	---	0	---	---	---	---	---	---	---	---	18
03/19/2017		---	---	---	---	---	---	---	---	---	---	0
03/20/2017		---	---	---	---	---	---	---	---	---	---	20
03/21/2017		---	---	---	---	---	---	---	---	---	---	22
03/22/2017		---	---	---	---	---	---	---	---	---	---	21
03/23/2017		---	---	---	---	---	---	---	---	---	---	0
03/24/2017		---	---	---	---	---	---	---	---	---	---	20
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**646**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**656**

				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)
03/10/2017	*	0	0	---	---	---	---	---	---	---	---	12
03/11/2017		---	2	---	---	---	---	---	---	---	---	0
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	13
03/13/2017		1	---	---	---	---	---	---	---	---	---	0
03/14/2017		0	---	---	---	---	---	---	---	---	---	0
03/15/2017	*	0	1	---	---	---	---	---	---	---	---	31
03/16/2017		1	---	---	---	---	---	---	---	---	---	0
03/17/2017		---	---	---	---	---	---	---	---	---	---	0
03/18/2017	*	---	5	---	---	---	---	---	---	---	---	0
03/19/2017		---	---	---	---	---	---	---	---	---	---	0
03/20/2017		---	---	---	---	---	---	---	---	---	---	0
03/21/2017		---	---	---	---	---	---	---	---	---	---	0
03/22/2017		---	---	---	---	---	---	---	---	---	---	0
03/23/2017		---	---	---	---	---	---	---	---	---	---	0
03/24/2017		---	---	---	---	---	---	---	---	---	---	20
Total:		**2**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**76**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
YTD		**2**	**16**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**102**

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)
03/10/2017	*	0	0	---	---	---	---	---	---	---	---	24
03/11/2017		---	0	---	---	---	---	---	---	---	---	0
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	67
03/13/2017		0	---	---	---	---	---	---	---	---	---	28
03/14/2017		0	---	---	---	---	---	---	---	---	---	27
03/15/2017	*	0	0	---	---	---	---	---	---	---	---	0
03/16/2017		0	---	---	---	---	---	---	---	---	---	0
03/17/2017		---	---	---	---	---	---	---	---	---	---	48
03/18/2017	*	---	0	---	---	---	---	---	---	---	---	36
03/19/2017		---	---	---	---	---	---	---	---	---	---	19
03/20/2017		---	---	---	---	---	---	---	---	---	---	61
03/21/2017		---	---	---	---	---	---	---	---	---	---	22
03/22/2017		---	---	---	---	---	---	---	---	---	---	0
03/23/2017		---	---	---	---	---	---	---	---	---	---	23
03/24/2017		---	---	---	---	---	---	---	---	---	---	20
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**375**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**441**

				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)
03/10/2017	*	0	0	---	---	---	---	---	---	---	---	180
03/11/2017		---	0	---	---	---	---	---	---	---	---	185
03/12/2017	*	---	---	---	---	---	---	---	---	---	---	110
03/13/2017		0	---	---	---	---	---	---	---	---	---	75
03/14/2017		0	---	---	---	---	---	---	---	---	---	85
03/15/2017	*	0	0	---	---	---	---	---	---	---	---	85
03/16/2017		0	---	---	---	---	---	---	---	---	---	160
03/17/2017		---	---	---	---	---	---	---	---	---	---	185
03/18/2017	*	---	0	---	---	---	---	---	---	---	---	310
03/19/2017		---	---	---	---	---	---	---	---	---	---	480
03/20/2017		---	---	---	---	---	---	---	---	---	---	380
03/21/2017		---	---	---	---	---	---	---	---	---	---	810
03/22/2017		---	---	---	---	---	---	---	---	---	---	1,415
03/23/2017		---	---	---	---	---	---	---	---	---	---	1,000
03/24/2017		---	---	---	---	---	---	---	---	---	---	785
Total:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6,245**
# Days:		**5**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**
Average:		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**416**
YTD		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23,020**

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: 03/23

		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	03/22	12	0	73	3	105	0	0	0	0	0	0	0	0	0	0	0	0	0
TDA	03/21	7	0	0	0	16	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	03/22	1	-2	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	03/21	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	03/22	0	0	5	0	9	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	03/22	0	0	0	0	0	0	0	1	0	1256	2326	1847	468	1007	672	0	-1	0
TDA	03/21	0	0	0	0	0	0	0	0	0	785	0	834	264	0	346	0	0	0
JDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	03/22	0	0	0	0	1	0	0	0	0	1428	0	3429	285	0	913	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	03/21	0	0	0	0	0	0	0	0	0	2824	2561	3092	986	1188	940	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	03/22	0	0	0	0	0	0	0	0	0	450	4017	3356	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: 03/24/17