



Fish Passage Center

Weekly Report #18-08

April 27, 2018

This Week's Highlights

Water Supply

Precipitation throughout the Columbia Basin has varied between 108% and 151% of average at individual sub-basins over April. Precipitation above The Dalles has been 123% of average over April. Over the 2018 water year, precipitation has ranged between 94% and 121% of average.

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

Location	Water Year 2018		Water Year 2018	
	April 1-26, 2018		October 1, 2017 to April 26, 2018	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	3.27	139	27.3	108
Snake River Above Ice Harbor	1.99	108	15.0	95
Columbia Above The Dalles	2.39	123	19.2	101
Kootenai	3.24	138	27.2	109
Clark Fork	2.53	123	19.6	113
Flathead	3.69	144	28.0	121
Pend Oreille River Basin above Waneta Dam	3.08	137	24.4	114
Salmon River Basin	2.73	116	19.5	100
Upper Snake Tributaries	2.66	124	17.7	100
Clearwater	4.62	151	34.0	118
Willamette River above Portland	6.29	134	51.1	94

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 147% of average, for Snake River Basins the average snowpack is 90% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 85% of average.

Table 2 displays the April 26th ESP runoff volume forecasts for multiple reservoirs along with the April COE forecasts at Libby and Dworshak. The April 26th ESP forecast at The Dalles between April and August is 107,579 Kaf (123% of average).

Table 2. April 26 ESP Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	April 26, 2018	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	123	107,579
Grand Coulee (Apr-Aug)	125	71,183
Libby Res. Inflow, MT (Apr-Aug)	130 122*	7,624 7,189*
Hungry Horse Res. Inflow, MT (Apr-Aug)	156	3,028
Lower Granite Res. Inflow (Apr- July)	117	23,275
Brownlee Res. Inflow (Apr-July)	107	5851
Dworshak Res. Inflow (Apr-July)	127 125*	3,081 3,040*

* Denotes COE April Forecast

Grand Coulee Reservoir is at 1223.4 feet (4-26-18) and has drafted 6.7 feet over the last week. Outflows at Grand Coulee have ranged between 150.4 Kcfs and 159.4 Kcfs over the last week. The April 30th FC Elevation at Grand Coulee is 1222.7 ft. (based on April Forecast).

The Libby Reservoir is currently at elevation 2360.0 feet (4-26-18) and has refilled 1.2 feet over the past week. Daily average outflows at Libby Dam have been increased from 4.0 to 8.9 Kcfs over the last week. The

April 30th FC at Libby is 2359.3 ft. (based on April Forecast).

Hungry Horse is currently at an elevation of 3471.7 feet (4-26-18) and has drafted 6.4 feet last week. Outflows at Hungry Horse have been 14.7-15.4 Kcfs over the last week. The April 30th FC at Hungry Horse is 3475.5 ft. (based on April Forecast).

Dworshak is currently at an elevation of 1482.3 feet (4-26-18) and continues to refill, filling 6.6 feet over last week. Dworshak outflows have been 6.4-7.3 Kcfs.

The Brownlee Reservoir was at an elevation of 2021 feet on April 26th, 2018. Outflows at Hells Canyon have ranged between 19.3 and 35.6 Kcfs over the last four days. The April 30th FC (based on April forecast) is 2014.7 ft.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 4th, 2018), the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 93.3 Kcfs last week; over the spring season have averaged 92.7 Kcfs.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam (both began today, April 10th). Flows at McNary averaged 281.9 Kcfs last week at McNary and 277.9 Kcfs over the spring season. Flows averaged 178.3 Kcfs at Priest Rapids last week and 161.7 Kcfs over the spring season.

Spill

Flows in the Lower Snake River decreased this week, when compared to the previous week. Daily average flows at Lower Granite Dam ranged from 88.1 to 97.2 Kcfs. Flows in the Mid-Columbia River were similar this week to last week. Daily average flows at McNary Dam ranged from 265.3 to 294.1 Kcfs.

The 2018 spill for fish passage program at the lower Snake River and Mid-Columbia FCRPS projects began just after midnight on April 3rd and April 10th, respectively. In response to the order from the U.S. District Court of the District of Oregon, the 2018 Fish Operations Plan (FOP) specifies that spring spill

operations on the Snake and Mid-Columbia rivers will be to spill to the 115%/120% total dissolved gas (TDG) caps at all eight projects. The COE estimates spill caps for each project on a daily basis and projects will be operated to these estimated spill caps. These daily spill caps are implemented at 1600 each day and are published on the TMT website (<http://pweb.crohms.org/tmt/documents/ops/spill/caps/>). The daily spill caps at the Snake and Mid-Columbia river projects for the past week are summarized in Table 3.

Table 3. Spring spill operations and estimated 115%/120% TDG spill caps at Snake and Mid-Columbia river projects. Estimated spill caps for Snake River projects are for most recent week of spill operations.

Project	Spring Spill Level (Day/Night)	Estimated Spill Caps (4/20-4/26)
Lower Granite	Gas Cap/Gas Cap	36-45 Kcfs
Little Goose	Gas Cap/Gas Cap	28-34 Kcfs
Lower Monumental	Gas Cap/Gas Cap	33-40 Kcfs
Ice Harbor	Gas Cap/Gas Cap	92 Kcfs
McNary	Gas Cap/Gas Cap	165-198 Kcfs
John Day	Gas Cap/Gas Cap	100-140 Kcfs
The Dalles	Gas Cap/Gas Cap	65-90 Kcfs
Bonneville	Gas Cap/Gas Cap	121 Kcfs

The estimated 115%/120% spill caps for Lower Granite Dam (LGR) started at 45 Kcfs on Friday, April 20th but have steadily decreased to 36 Kcfs by the afternoon of April 26th. Spill volumes at LGR have met the estimated 115%/120% spill caps this week. Total dissolved gas (TDG) has not exceeded the 120% waiver limit in the LGR tailrace but has exceeded the 115% waiver limit in the Little Goose (LGS) forebay since April 20th. It is worth noting that the 12-hour average TDG in the LGS forebay on April 25th and 26th exceeded what had occurred at the LGR tailrace over the previous four or five days. The estimated spill caps for LGS started at 34 Kcfs on Friday, April 20th but have steadily decreased to 28 Kcfs by the afternoon of April 26th. Although the spill cap at LGS was set at 34 Kcfs from April 20th through April 24th, actual spill volumes during this period were approximately 32 Kcfs. Similarly, the spill cap was reduced to 30 Kcfs on the afternoon of April 24th through April 25th but actual spill volumes during this period were approximately 28.5 Kcfs. The spill cap was reduced again on the afternoon of April 25th to 28 Kcfs but actual spill

volumes were approximately 26.5 Kcfs. Total dissolved gas has not exceeded the 120% waiver limit in the LGS tailrace but has exceeded the 115% waiver limit in the Lower Monumental Dam (LMN) forebay since April 19th. Similar to the observations from spill at LGR, the 12-hour average TDG in the LMN forebay has often exceeded what had been observed in previous days at the LGS tailrace. The estimated spill caps for LMN started at 40.0 Kcfs on Friday, April 20th but decreased to 33 Kcfs by the afternoon of April 26th. Spill volumes at LMN have met these estimated spill caps this week. Total dissolved gas in the LMN tailrace has not exceeded the 120% waiver limit this week but TDG has exceeded the 115% waiver limit in the Ice Harbor (IHR) forebay in six out of the last seven days. Similar to observations from spill at LGR and LGS, recent 12-hour average TDG levels in the IHR forebay have exceeded what had been previously observed in the LMN tailrace. The estimated spill cap for IHR has been 92 Kcfs all week. Spill volumes this week have generally been all flows in excess of powerhouse minimum requirements. There were no TDG exceedences from spill at IHR this week. Finally, it is worth noting that, in recent days, the 12-hour average TDG levels in the LGS and LMN forebays have been greater than what has been observed in their respective tailraces. For example, on April 25th and 26th, the 12-hour average TDG in the LGS forebay was 119%, whereas that in the LGS tailrace was only 116%.

In general, spring spill volumes at the Mid-Columbia projects have met or exceeded the estimated 115%/120% spill cap levels over the last week. The estimated spill cap for McNary Dam (MCN) was 198 Kcfs on Friday, April 20th, but has decreased to 165 Kcfs by the afternoon of April 26th. The 12-hour average TDG has not exceeded the 120% waiver limit in the MCN tailrace this week but the 115% waiver limit in the John Day (JDA) forebay has been exceeded over the last four days. On April 26th, the 12-hour average TDG in the JDA forebay was 121%, which is higher than any 12-hour average TDG observed in the MCN tailrace so far this month. The estimated spill caps for JDA started at 140 Kcfs on Friday, April 20th but decreased to 100 Kcfs by the afternoon of April 26th. Total dissolved gas has not exceeded the 120% waiver limit in the JDA tailrace but has exceeded the 115% waiver limit at The Dalles (TDA) forebay since April 18th. The estimated spill caps for The Dalles Dam started at 90 Kcfs on Friday, April 20th, but have

steadily been reduced to 65 Kcfs by the afternoon of April 26th. Although the spill cap at TDA was reduced to 65 Kcfs on the afternoon of April 25th, spill volumes remained at approximately 75 Kcfs until midnight. Spill volumes were reduced to 65 Kcfs at 2400 on April 25th where they remained through 0700 on April 26th, at which time spill volumes were increased to approximately 80 Kcfs through 1400. At 1400 on April 26th, spill volumes at TDA were gradually reduced to 64 Kcfs where they remained for the rest of the day. The 12-hour average TDG has not exceeded the 120% waiver limit at the TDA tailrace but the 115% waiver limit for the Bonneville (BON) forebay has been exceeded since April 18th. Finally, the estimated spill caps for BON have been at 121 Kcfs all week. The 120% TDG waiver limit at the Cascade Island monitor was exceeded on April 26th.

Total dissolved gas levels below Dworshak Dam have decreased over the last week. In general, the 12-hour average TDG in the Dworshak Dam tailrace has been below the 110% EPA standard this week. The 12-hour average TDG levels at the Lower Granite Dam forebay monitor have ranged from 105% to 106% this week. **Note:** The State of Oregon TDG waiver only requires compliance with 120% TDG in the tailrace, while the State of Washington requires compliance with both a 115% TDG forebay requirement and a 120% tailrace TDG requirement. The State of Oregon and the State of Washington also use different methodologies to estimate the 12-hour average TDG. For Oregon, the 12-hour average is based on the 12 highest hourly TDG measurements in a single calendar day (not necessarily consecutive). For Washington, the 12-hour average is based on 12-hour rolling averages. The highest of the rolling averages is what is reported as the 12-hour average for a given day. The location of a TDG monitor will dictate which of these methodologies is used for compliance monitoring. The Washington methodology will apply to all the lower Snake River projects, as well as the middle Columbia River forebay monitors. On any given day the compliance of the tailrace monitors at the middle Columbia River projects will be determined using either the Washington or Oregon methodology, whichever is the most restrictive, and spill will be decreased if needed.

Gas bubble trauma (GBT) monitoring in smolts took place over the past week at Lower Granite, Little Goose, Lower Monumental, Rock Island, McNary, and Bonneville dams this week. Signs of GBT were

observed in six of the nine GBT samples conducted this week (April 20-26). No signs of GBT were observed at Lower Granite or Lower Monumental dams this week. Bonneville Dam observed signs of GBT in each of their two samples this week. Each of the two samples on April 21st and April 25th had one fish (1.0%) with rank 1 signs of GBT. Rock Island observed three fish (3.0%) with rank 1 signs of GBT in the sample from April 24th and two fish (2.0%) with rank 1 signs on GBT in the April 26 sample. Little Goose observed two fish (2.0%) with rank 1 signs of GBT in their sample on April 22nd. McNary observed zero fish with signs of GBT in their sample on April 22nd but one fish (1.0%) with rank 1 signs of GBT in their sample on April 24th. The action criteria for interruption of the voluntary spill for fish passage program is defined as either 15% of examined fish showing signs of GBT in their non-paired fins, or 5% of the fish examined showing severe signs of GBT in their non-paired fins. Severe signs of GBT are defined as more than 25% of the surface area of the fin is occluded by gas bubbles, which corresponds to a rank of 3 or 4.

Temperature

Forebay temperatures are now being reported for Lower Granite, Ice Harbor, McNary and Bonneville dams. Thus far, reported temperatures at Bonneville, McNary, and Ice Harbor are close to average based on the past ten years of data. Temperatures at Lower Granite are above the current 10-year average and very similar to

Smolt Monitoring

Smolt Monitoring Program (SMP) activities continued at all bypass facilities and traps this week (April 20-26).

Yearling Chinook continued to dominate the samples at Bonneville Dam (BON) this week. This week's daily average passage index for yearling Chinook was about 27,700 per day, which is a slight decrease from last week's daily average passage index of about 30,700 per day. Steelhead passage increased this week, when compared to last week. This week's daily average passage index was 10,100 per day, while that for last week was about 2,400 per day. Coho passage decreased this week when compared to the previous week. This week's daily average passage index for coho was 4,000 per day, whereas that from last week was about 6,200 per day. Sockeye passage increased this week when compared to the previous week. This week's daily average passage index was

350 per day, whereas that for last week was less than 50 sockeye per day. This week's daily average passage index for subyearling Chinook was about 1,450 per day, which is a decrease from last week's daily average passage index of 4,125 per day. Pacific lamprey macrophthalmia were encountered in four of this week's samples while ammocoetes were only encountered in one of this week's samples.

Similar to the last two years, sampling at John Day Dam (JDA) is every-other-day. Yearling Chinook and steelhead dominated the samples at JDA this week. This week's daily average passage indices for these two species were approximately 38,000 and 35,000, respectively. Both of these are increases over last week's daily average passage indices of 21,700 for yearling Chinook and 15,000 for steelhead. Coho and sockeye passage also increased this week. This week's daily average passage indices for these two species were 630 and 540 per day, respectively. Last week's daily average passage indices were 140 for coho and 100 for sockeye. No subyearling Chinook fry were collected this week. Pacific lamprey macrophthalmia were encountered in three of this week's four samples. This week's daily average collection for Pacific lamprey macrophthalmia was about 200, which is similar to from last week's daily average collection. Pacific lamprey ammocoetes were encountered in one of this week's samples.

Similar to John Day, sampling at McNary (MCN) is every-other-day. Yearling Chinook continued to dominate the samples at MCN this week. This week's daily average passage index for yearling Chinook was nearly 26,700 per day. This is an increase over last week's daily average passage index of just over 15,100 per day. Steelhead were the second most abundant species in this week's samples. This week's daily average passage index for steelhead was 13,500 per day, which is an increase over last week's daily average passage index of 10,600 per day. Sockeye, coho, and subyearling Chinook passage also increased this week, when compared to the previous week. This week's daily average passage indices were 800, 4,350, and 900 per day, respectively. Last week's daily average passage indices were 400 for sockeye, 400 for coho, and 200 for subyearling Chinook. All of the subyearling Chinook that were encountered this week were fry. Finally, Pacific lamprey macrophthalmia were encountered in all three of this week's samples while

no ammocoetes were encountered. This week's daily average collection for Pacific lamprey macrophthalmia was about 1,800 per day.

Collections for transportation at Lower Granite Dam (LGR) began on April 23rd, with the first barge leaving on April 24th. Steelhead continued to dominate the samples at LGR this week. This week's daily average passage index for steelhead was about 44,000 per day, which is a decrease from last week's daily average passage index of nearly 89,000 per day. Passage of yearling Chinook also decreased this week, when compared to last week. This week's daily average passage index for yearling Chinook was 39,250 per day, whereas that for last week was 65,400 per day. Of the yearling Chinook collected this week, approximately 73% were of hatchery origin (i.e., clipped or CWT). Approximately 92% of the steelhead collected at LGR this week were of hatchery origin. Sockeye, coho, and subyearling Chinook were also encountered in this week's samples. The majority of the sockeye collected so far this year are likely kokanee from Dworshak reservoir, as Dworshak Dam has been spilling since January. All of the subyearling Chinook encountered in this week's samples were fry. One Pacific lamprey macrophthalmia was encountered in the sample on April 20th. No other lamprey juveniles were encountered this week. Fish Passage Center has noticed some delay occurring in PIT-tagged juvenile salmon passage through the bypass at Lower Granite Dam. Fish have been seen holding just above the separator. A memo describing that delay can be found on the FPC website at <http://www.fpc.org/documents/memos/21-18.pdf>.

Similar to recent years, sampling at Little Goose Dam (LGS) was every-other-day until the start of transportation, at which time sampling changed to every day. Collections for transportation at LGS began on April 23rd, with the first barge leaving on April 24th. Yearling Chinook and steelhead dominated this week's samples at LGS. This week's daily average passage indices for these two species were 69,000 and 66,000 per day, respectively. For yearling Chinook, this was an increase over last week's daily average passage index of 60,000 per day. For steelhead, this was a decrease from last week's daily average passage index of nearly 116,000 per day. Sockeye and coho passage increased this week, when compared to the previous week. This week's daily average passage indices for these two species were 800 and 200 per day, respectively. Last

week's daily average passage indices were 380 for sockeye and only 75 for coho. No subyearling Chinook fry were encountered in this week's samples. Pacific lamprey macrophthalmia were encountered in only two of this week's samples (April 21st and April 24th) while no ammocoetes were encountered this week.

Sampling at Lower Monumental Dam (LMN) was every-third-day through April 14th and then transitioned to every-other-day where it remained until April 23rd. Collections for transportation at LMN began on April 23rd, with the first barge leaving on April 24th. With the start of transportation, sampling at LMN is now daily. One partial sample and five full samples were conducted at LMN this week. The partial sample was an 8-hour sample on April 23rd, which was necessitated by the need to transition the sampling period to facilitate the start of transportation. This week's samples at LMN were dominated by steelhead and yearling Chinook. This week's daily average passage index for steelhead was 58,000 per day, which is a decrease compared to last week's daily average passage index of approximately 68,000 per day. Yearling Chinook passage also decreased this week when compared to last week. This week's daily average passage index for yearling Chinook was 44,000 per day, whereas that for last week was nearly 52,000 per day. Although relatively low compared to yearling Chinook and steelhead, sockeye passage also decreased this week. This week's daily average passage index was about 334 per day, whereas that for last week was 517 per day. Similar to Lower Granite and Little Goose, most if not all of the sockeye encountered this week were likely kokanee from Dworshak reservoir. Finally, coho were encountered in only one of last week's samples (April 14th).

Yearling Chinook and sockeye dominated this week's samples at Rock Island Dam (RIS). This week's daily average passage indices for these two species were 420 and 410 per day, respectively. Both of these are increases over last week's daily average passage indices of 150 for yearling Chinook and 230 for sockeye. Passage of steelhead also increased this week, when compared to last week. This week's daily average passage index was about 130 per day, whereas that for last week was only 12 per day. Subyearling Chinook and coho were also encountered in this week's samples but in relatively low numbers. Similar to previous weeks, all of the subyearling Chinook that were

collected this week were fry. Finally, Pacific lamprey macropthalmia were collected in five of this week's samples but in relatively low numbers.

The Snake River Trap at Lewiston, ID (LEW) is located at river kilometer 225 of the Snake River and is operated by the Idaho Department of Fish and Game. Yearling Chinook dominated this week's samples at LEW. This week's daily average collection was 450 per day, which is higher than last week's daily average collection of 266. Steelhead collections increased this week, when compared to the previous week. This week's daily average collection for steelhead was about 260 per day, whereas that for last week was about 190 per day. Finally, coho and subyearling Chinook were also encountered in this week's collections, but in relatively low numbers.

The Grande Ronde Trap (GRN) is located at river kilometer 2 of the Grande Ronde River and is operated by the Oregon Department of Fish and Wildlife. Yearling Chinook continued to dominate the collections at GRN this week. This week's daily average collection for yearling Chinook at GRN was about 300 per day, which is similar to last week's daily average collection. Of the yearling Chinook that were collected this week, approximately 88% were of known hatchery origin. Steelhead collections increased this week compared to the previous week. This week's daily average collection for steelhead was 150 per day, whereas that for last week was only 30 per day. Of the steelhead that were collected this week, approximately 97% were clipped. Finally, one subyearling Chinook and a few coho smolts were encountered in this week's samples.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 of the Salmon River and is operated by the Idaho Department of Fish and Game. Similar to recent years, sampling at WTB in 2018 will only occur during the weekdays. Due to an equipment failure, sampling at WTB was suspended after the sample on April 25th. In addition, flows are predicted to increase over the next few days to levels that may preclude sampling after repairs are made. Sampling at WTB will likely resume next week if/when flows decrease to safe levels. Yearling Chinook continued to dominate the collections at WTB this week. This week's daily average collection for yearling Chinook at WTB was nearly 900 per day, which is an increase from last week's daily average collection of about 800 per day. Of the yearling Chinook sampled this week,

approximately 87% were of hatchery origin. The only other species that has been encountered at WTB this season is steelhead. Steelhead passage decreased slightly this week, when compared to previous weeks. This week's daily average collection for steelhead was about 50 per day, whereas that for last week was about 70 per day. Of the steelhead collected at WTB this week, approximately 75% were of hatchery origin.

The Imnaha River Trap (IMN) is located at river kilometer 7 of the Imnaha River and is operated by the Nez Perce Tribe. Sampling at the Imnaha River Trap is year round. For 2018, the FPC currently has data from IMN for the period of February 15 through April 24. Over the last week of available data (April 18-April 24), a total of 714 yearling Chinook and 1,347 steelhead were collected at the trap. Less than half (42%) of the yearling Chinook collected over this period were clipped. Of the steelhead collected over this period, approximately 82% were clipped.

Hatchery Releases

FPC has not received preliminary data from some hatcheries as of 04/27/18, therefore, this hatchery release schedule represents the most up to date accounting that are available, but should not be considered a finalized record of hatchery releases.

Snake River Zone:

The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. No new releases of spring Chinook were scheduled for this week. However, a volitional release of approximately 2.5 million spring Chinook smolts from Rapid River Hatchery was scheduled to end this week. This volitional release began on March 12th. In addition, two volitional releases of summer Chinook smolts to the Pahsimeroi River were scheduled to end this week. These releases began in mid-April and were expected to total nearly 1.06 million smolts. Finally, approximately 416,000 summer steelhead smolts were planned for release into this zone this week. Of these, about 256,000 (62%) were planned to be released into the Little Salmon River while the remaining 160,000 (38%) were planned to be released into the Wallowa River.

Over the next two weeks 660,000 sockeye from Springfield Hatchery are planned for release into Redfish Lake Creek on the Salmon River. In addition,

approximately 106,000 summer steelhead smolts are planned for release over the next two weeks. Of these, 50,000 are scheduled to be released into the Tucannon River, which is located below Little Goose Dam. The remaining 106,000 are planned to be released into the East Fork Salmon River. There are no other new releases scheduled to begin in this zone over the next two weeks.

Upper Columbia Zone:

The Upper Columbia Zone encompasses the area of the Columbia River and its tributaries from Priest Rapids Dam to Chief Joseph Dam. No new releases were scheduled for this zone this week.

Over the next two weeks approximately 460,000 summer Chinook are planned for release into this zone. Most of these are planned for release at the Wells Hatchery, however there are also two small releases of a few hundred smolts scheduled for the Methow and Similkameen Rivers. Additionally, there are two small releases of about 100 fall Chinook planned in this zone; one to the Wenatchee River and one that is scheduled to occur in the Wanapum pool. Finally, several volitional releases of coho that began in mid-April are scheduled to end over the next two weeks. In all, these release are expected to total just over 1.43 million coho smolts. Of these, approximately 903,800 (63%) were scheduled to be released into the Wenatchee River and its tributaries while the remaining 530,000 (37%) were released into the Methow River and its tributaries.

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 75,000 summer steelhead smolts were scheduled to be released to this zone this week. Of these, 50,000 (67%) were scheduled to be released into the Umatilla River while the remaining 25,000 (33%) were scheduled to be released into the Deschutes River. No other new releases were scheduled for this zone this week.

Just over 5.0 million subyearling fall Chinook smolts are scheduled to be released into this zone over the next two weeks. Of these, 4.5 million (90%) will be released from Spring Creek NFH, which is located in the Bonneville pool. This release is scheduled to occur on or around May 7th. The remaining 500,000 (10%) are scheduled to be released into the Yakima River or

directly to McNary pool. In addition, approximately 1.0 million coho smolts from Klickitat Hatchery are expected to be released into the Klickitat River. This release is scheduled to begin on or around May 1st. Finally, 75,000 steelhead smolts are scheduled to be released into this zone over the next two weeks. Of these, 50,000 are winter steelhead that are planned for release into Hood River. The remaining 25,000 are summer steelhead that are planned for release into the Deschutes River.

Lower Columbia Zone:

The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. No new releases were scheduled to begin in this zone this week.

Approximately 1.6 million subyearling fall Chinook are scheduled to be released into this zone over the next two weeks. Of these, approximately 44% are scheduled to be released into the Kalama River, 23% are scheduled for release into the Cowlitz River, 20% are scheduled to be released into Big Creek, and 13% are scheduled for release into the Klaskanine River. In addition, just over 6.9 million coho smolts are scheduled to be released into this zone over the next two weeks. These coho releases are scheduled to occur throughout this zone, including the Cowlitz, Grays, Washougal, Lewis, Klaskanine, and Sandy rivers. Finally, 239,000 winter steelhead smolts are scheduled to be released into this zone over the next two weeks. Of these, 135,000 (56%) are scheduled to be released into the Clackamas River while the remaining 104,000 (44%) are scheduled to be released into the Lewis River.

Adult Passage

At Bonneville Dam, 1,279 adult Chinook and 2,457 adult steelhead were counted. Of the steelhead counted 1,043 were unclipped steelhead. In 2017 for the same time frame, 2,344 adult Chinook and 2,409 adult steelhead were counted. Of the steelhead counted in 2017, 852 were unclipped steelhead.

The direct counts at Bonneville Dam showed 38 to 283 adult spring Chinook passing over the project this past week, with a cumulative total of 1,279 for both direct and video counts (through April 26). There were 1,065 fewer fish in this year's count when compared to the 2017 count (54%), while this year's count was about 4% of the ten-year average. Adult steelhead direct counts ranged from 10 to 27 this week, with a

cumulative total of 2,457 for both direct and video counts through April 26th. This is 102% of the 2017 count and 72% of the ten-year average.

The Willamette Falls cumulative steelhead count from January 1st through April 25th was 1,524. The 2018 Willamette Falls steelhead count was about 2.6 times greater than the 2017 count, while this year's count was about 26% of the 10-year average count of 5,794. This year's Lower Granite steelhead count of 4,270 had 2,803 fewer fish than the 2017 count of 7,073 and 3,839 fewer fish than the 10-year average count of 8,109.

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:	4/14/2018	to	04/27/18							
Agency	Hatchery	Species	Race	MiqYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2018	202,000	04-15-18	04-15-18	Riverside Pond	Okanogan River	UCOL
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2018	556,000	04-15-18	04-15-18	Chief Joseph Hatchery	Wells Pool	UCOL
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2018	303,000	04-15-18	04-15-18	Omak Pond	Okanogan River	UCOL
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2018	380,000	04-15-18	04-15-18	Similkameen Acclim Pd	Okanogan River	UCOL
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2018	464,000	04-15-18	04-15-18	Chief Joseph Hatchery	Wells Pool	UCOL
Colville Tribe Total					1,905,000					
Douglas County PUD	Methow Hatchery	ST	SU	2018	72,700	04-15-18	05-15-18	Methow Hatchery	Methow River	UCOL
Douglas County PUD Total					72,700					
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2018	196,779	04-19-18	04-23-18	Yankee Fk (Salmon R)	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2018	296,925	04-16-18	04-18-18	Yankee Fk (Salmon R)	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2018	200,000	04-16-18	04-19-18	Little Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2018	256,118	04-23-18	04-24-18	Little Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2018	66,650	04-16-18	04-24-18	Pahsimeroi River	Pahsimeroi River	SNAK
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2018	991,775	04-16-18	04-24-18	Pahsimeroi River	Pahsimeroi River	SNAK
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2018	2,500,000	03-12-18	04-27-18	Rapid River	Little Salmon River	SNAK
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2018	276,502	04-16-18	04-20-18	Yankee Fk (Salmon R)	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game Total					4,784,749					
Nez Perce Tribe	Dworshak NFH	ST	SU	2018	202,238	04-16-18	04-16-18	Lolo Creek	Clearwater River M F	SNAK
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2018	250,000	04-20-18	04-20-18	Lostine Acclim Pond	Wallowa River	SNAK
Nez Perce Tribe Total					452,238					
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CH0	FA	2018	1,600,000	04-18-18	04-18-18	Tanner Creek	Tanner Creek	LCOL
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CO	UN	2018	400,000	04-14-18	04-14-18	Blind Slough	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CO	UN	2018	825,000	04-14-18	04-14-18	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH1	SP	2018	200,000	04-20-18	04-20-18	Tongue Pt	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CO	UN	2018	200,000	04-14-18	04-14-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2018	160,000	04-25-18	04-25-18	Wallowa Acclim Pond	Wallowa River	SNAK
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2018	215,000	04-01-18	04-20-18	Little Sheep Creek Big Canyon Acclim.Pd	Imnaha River	SNAK
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2018	320,000	04-15-18	04-15-18	(Grande Ronde)	Wallowa River	SNAK
Oregon Dept. of Fish and Wildlife	Klaskanine Hatchery	ST	WI	2018	40,000	04-14-18	04-14-18	Klaskanine Hatchery	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2018	1,000	04-15-18	04-15-18	Crooked River (OR)	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2018	240,000	04-14-18	04-14-18	Deschutes River	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Sandy Hatchery	CO	UN	2018	200,000	04-14-18	04-14-18	Cedar Creek (Sandy R)	Sandy River	LCOL
Oregon Dept. of Fish and Wildlife	Sandy Hatchery	ST	SU	2018	75,000	04-18-18	04-18-18	Cedar Creek (Sandy R)	Sandy River	LCOL
Oregon Dept. of Fish and Wildlife	Sandy Hatchery	ST	SU	2018	75,000	04-18-18	04-18-18	Cedar Creek (Sandy R) Thornhollow Acclim Pond	Sandy River	LCOL
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2018	50,000	04-25-18	04-25-18	Pond	Umatilla River	MCOL
Oregon Dept. of Fish and Wildlife	Willamette Hatchery	CH1	SP	2018	234,000	04-14-18	04-14-18	Dexter Pond	Willamette River	LCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2018	7,500	04-15-18	04-15-18	Metolius River	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2018	7,500	04-15-18	04-15-18	Wychus Creek	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2018	10,000	04-15-18	04-15-18	Crooked River (OR)	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2018	10,000	04-25-18	04-25-18	Wychus Creek	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2018	15,000	04-25-18	04-25-18	Crooked River (OR)	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife Total					4,885,000					
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2018	405,000	04-15-18	04-20-18	Methow River	Methow River	UCOL
U.S. Fish and Wildlife Service Total					405,000					
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2018	150,000	04-20-18	04-20-18	Catherine Cr Acclim Pond	Grande Ronde River	SNAK
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2018	250,000	04-15-18	04-15-18	Grande Ronde Acclim Pond Minthorn Acclimation	Grande Ronde River	SNAK
Umatilla Tribe	Umatilla Hatchery	ST	SU	2018	50,000	04-20-18	04-20-18	Pond	Umatilla River	MCOL
Umatilla Tribe	Umatilla Hatchery	ST	SU	2018	50,000	04-20-18	04-20-18	Pendelton Acclim Pond	Umatilla River	MCOL
Umatilla Tribe	Umatilla Hatchery	ST	SU	2018	50,000	04-20-18	04-20-18	Pendelton Acclim Pond	Umatilla River	MCOL
Umatilla Tribe Total					550,000					
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2018	75,000	04-15-18	04-15-18	W Fk Hood River	Hood River	MCOL
Warm Springs Tribe Total					75,000					
Washington Dept. of Fish and Wildlife	COOP	CT	UN	2018	10,000	04-15-18	05-15-18	Cowlitz River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Trout	CT	UN	2018	95,000	04-15-18	05-15-18	Blue Creek	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Trout	ST	SU	2018	620,000	04-15-18	05-15-18	Blue Creek	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Trout	ST	WI	2018	53,000	04-15-18	05-15-18	Cowlitz River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Trout	ST	WI	2018	103,000	04-15-18	05-15-18	Blue Creek	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Trout	ST	WI	2018	470,000	04-15-18	05-15-18	Blue Creek	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Kalama Falls Hatchery	ST	WI	2018	84,000	04-15-18	05-15-18	Kalama Falls Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Merwin Hatchery	ST	SU	2018	10,000	04-15-18	05-15-18	N Fk Lewis River	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Merwin Hatchery	ST	WI	2018	247,000	04-15-18	05-15-18	N Fk Lewis River	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2018	13,200	04-15-18	05-15-18	Washougal River	Washougal River	LCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2018	20,000	04-15-18	05-15-18	S Fk Toutle River	Toutle River	LCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2018	20,000	04-15-18	05-15-18	Rock Cr (Stevenson)	Bonneville Pool	MCOL
Washington Dept. of Fish and Wildlife Total					1,745,200					
Yakama Tribe	Eagle Creek NFH	CO	UN	2018	174,641	04-15-18	04-15-18	Stiles Pond	Yakima River	MCOL
Yakama Tribe	Eagle Creek NFH	CO	UN	2018	174,880	04-15-18	04-15-18	Easton Pond	Yakima River	MCOL
Yakama Tribe	Eagle Creek NFH	CO	UN	2018	232,316	04-15-18	04-15-18	Holmes Pond	Yakima River	MCOL
Yakama Tribe	Leavenworth NFH	CO	UN	2018	74,798	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Leavenworth NFH	CO	UN	2018	102,681	04-15-18	04-30-18	Tanner Creek	Tanner Creek	LCOL

Hatchery Releases Last Two Weeks

Yakama Tribe	Leavenworth NFH	CO	UN	2018	128,426	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2018	180,000	04-15-18	04-15-18	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2018	280,000	04-15-18	04-15-18	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	48,983	04-15-18	04-30-18	Methow River	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	62,337	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	68,019	04-15-18	04-30-18	Methow River	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	76,174	04-15-18	04-30-18	Twisp Acclim Pond	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	76,232	04-15-18	04-30-18	Coulter Creek	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	95,514	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	99,103	04-15-18	04-30-18	Wenatchee River	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	113,613	04-15-18	04-30-18	Rolfings Acclim Pond Butcher Creek Acclim. Pond	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	121,780	04-15-18	04-30-18	Pond	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	194,330	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Winthrop NFH	CO	UN	2018	24,890	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL
Yakama Tribe	Winthrop NFH	CO	UN	2018	249,529	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL
Yakama Tribe Total					2,578,246					
Grand Total					17,453,133					

Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From:			4/28/2018	to	5/11/2018					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Douglas County PUD	Methow Hatchery	CH1	SU	2018	215,000	04-01-18	05-01-18	Carlton Acclim Pond	Methow River	UCOL
Douglas County PUD	Wells Hatchery	CH0	SU	2018	460,000	05-01-18	05-01-18	Wells Hatchery	Rocky Reach Pool	UCOL
Douglas County PUD Total					675,000					
Idaho Dept. of Fish and Game	Hagerman NFH	ST	SU	2018	56,600	05-01-18	05-01-18	East Fk Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2018	969,500	04-02-18	05-05-18	S Fk Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game	Springfield Hatchery	SO		2018	662,621	04-30-18	05-11-18	Redfish Lake Creek	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game Total					1,688,721					
Oregon Dept. of Fish and Wildlife	Big Creek Hatchery	CH0	FA	2018	3,100,000	05-11-18	05-11-18	Big Creek Hatchery	Big Creek	LCOL
Oregon Dept. of Fish and Wildlife	Big Creek Hatchery	CO	UN	2018	535,000	05-02-18	05-02-18	Big Creek Hatchery	Big Creek	LCOL
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CO	UN	2018	200,000	05-02-18	05-02-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	CO	UN	2018	400,000	05-04-18	05-04-18	Tongue Pt	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Bonneville Hatchery	ST	WI	2018	25,000	05-01-18	05-01-18	Clackamas River	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Clackamas Hatchery	CO	UN	2018	540,000	05-02-18	05-02-18	Tongue Pt	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Clackamas Hatchery	ST	WI	2018	50,000	05-02-18	05-02-18	Clackamas Hatchery	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Clackamas Hatchery	ST	WI	2018	60,000	05-02-18	05-02-18	Clackamas Hatchery	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CH0	FA	2018	2,100,000	05-01-18	05-01-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Clatsop County Fisheries	CO	UN	2018	200,000	05-02-18	05-02-18	Cedar Creek (Sandy R)	Sandy River	LCOL
Oregon Dept. of Fish and Wildlife	Klaskanine Hatchery	CO	UN	2018	500,000	04-30-18	04-30-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Klaskanine Hatchery	CO	UN	2018	500,000	04-30-18	04-30-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Klaskanine Hatchery	CO	UN	2018	500,000	05-02-18	05-02-18	Klaskanine Hatchery	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2018	10,000	05-05-18	05-05-18	Wyachus Creek	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2018	15,000	05-05-18	05-05-18	Crooked River (OR)	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife Total					8,735,000					
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2018	1,477,066	04-02-18	04-30-18	S Fk Salmon River	Salmon River (ID)	SNAK
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2018	4,500,000	05-07-18	05-07-18	Spring Creek Hatchery	Bonneville Pool	MCOL
U.S. Fish and Wildlife Service Total					5,977,066					
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2018	50,000	04-28-18	04-28-18	E Fk Irrig Dist Sand Trap	Hood River	MCOL
Warm Springs Tribe Total					50,000					
Washington Dept. of Fish and Wildlife	Beaver Creek Hatchery	ST	SU	2018	30,000	04-01-18	05-01-18	Beaver Creek	Elochoman River	LCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2018	100	05-01-18	05-01-18		Wanapum Pool	UCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2018	150	05-01-18	05-01-18	Wenatchee River	Wenatchee River	UCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2018	3,300	05-01-18	05-01-18	Above McNary Dam	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2018	3,975	05-01-18	05-01-18	Above McNary Dam	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2018	13,400	05-01-18	05-01-18	Yakama River	Yakima River	MCOL
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2018	100	05-01-18	05-01-18		Okanogan River	UCOL
Washington Dept. of Fish and Wildlife	COOP	CH1	SU	2018	200	05-01-18	05-15-18	Methow River	Methow River	UCOL
Washington Dept. of Fish and Wildlife	COOP	CO	NO	2018	30,800	04-01-18	05-01-18	Below Bonn Dam Cathlamet Channel Net	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Hatchery	CH1	SP	2018	250,000	04-01-18	05-01-18	Pen	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CH0	FA	2018	1,581,000	05-01-18	06-01-18	Cowlitz Hatchery	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CH0	FA	2018	2,093,500	05-01-18	06-01-18	Cowlitz Hatchery	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CO	NO	2018	1,099,000	05-01-18	05-01-18	Cowlitz Salmon	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CO	NO	2018	1,200,000	05-01-18	05-01-18	Cowlitz Salmon	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Fallert Creek Hatchery	CH0	FA	2018	3,500,000	05-01-18	07-01-18	Fallert Creek Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Kalama Falls Hatchery	CH0	FA	2018	3,500,000	05-01-18	07-01-18	Kalama Falls Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Kalama Falls Hatchery	CO	NO	2018	305,000	04-01-18	05-01-18	Kalama Falls Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Lewis River Hatchery	CO	NO	2018	1,790,700	04-01-18	05-01-18	Lewis River Hatchery	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Lewis River Hatchery	CO	SO	2018	150,000	04-01-18	05-01-18	Lewis River Hatchery	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Merwin Hatchery	ST	SU	2018	65,000	04-01-18	05-01-18	Echo Net Pens	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	Merwin Hatchery	ST	WI	2018	104,000	05-01-18	06-01-18	N Fk Lewis River	Lewis River	LCOL
Washington Dept. of Fish and Wildlife	North Toutle Hatchery	CO	SO	2018	125,000	05-01-18	05-01-18	Green River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2018	40,000	04-01-18	05-01-18	Salmon Creek (WA)	Col R Bel. Bon Dam	LCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2018	85,000	04-01-18	05-01-18	Washougal River	Washougal River	LCOL
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2018	211,400	04-01-18	04-30-18	Curl Lake Acclim Pond	Tucannon River	SNAK
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2018	50,000	04-30-18	05-15-18	Curl Lake Acclim Pond	Tucannon River	SNAK
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2018	45,000	05-01-18	05-01-18	Deep River Net Pens	Grays River	LCOL
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2018	150,000	05-01-18	06-01-18	Washougal River	Washougal River	LCOL
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2018	250,000	05-01-18	05-01-18	Deep River Net Pens	Grays River	LCOL
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2018	405,000	05-01-18	05-01-18	Deep River Net Pens	Grays River	LCOL
Washington Dept. of Fish and Wildlife Total					17,081,625					
Yakama Tribe	Klickitat Hatchery	CO	NO	2018	1,000,000	05-01-18	05-01-18	Klickitat Hatchery	Klickitat River	MCOL
Yakama Tribe	Leavenworth NFH	CO	UN	2018	74,798	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Leavenworth NFH	CO	UN	2018	102,681	04-15-18	04-30-18	Tanner Creek	Tanner Creek	LCOL
Yakama Tribe	Leavenworth NFH	CO	UN	2018	128,426	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2018	500,000	05-05-18	05-05-18	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	48,983	04-15-18	04-30-18	Methow River	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	62,337	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL

Hatchery Releases Next Two Weeks

Yakama Tribe	Willard Hatchery	CO	UN	2018	68,019	04-15-18	04-30-18	Methow River	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	76,174	04-15-18	04-30-18	Twisp Acclim Pond	Methow River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	76,232	04-15-18	04-30-18	Coulter Creek	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	95,514	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	99,103	04-15-18	04-30-18	Wenatchee River	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	113,613	04-15-18	04-30-18	Rolfings Acclim Pond Butcher Creek Acclim. Pond	Wenatchee River	UCOL
Yakama Tribe	Willard Hatchery	CO	UN	2018	121,780	04-15-18	04-30-18	Pond	Wenatchee River	
Yakama Tribe	Willard Hatchery	CO	UN	2018	194,330	04-15-18	04-30-18	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Winthrop NFH	CO	UN	2018	24,890	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL
Yakama Tribe	Winthrop NFH	CO	UN	2018	249,529	04-15-18	04-30-18	Winthrop Hatchery	Methow River	UCOL
Yakama Tribe Total					3,036,409					
Grand Total					37,243,821					

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/13/2018	129.5	0.0	134.8	0.0	139.5	21.0	127.5	0.0	135.3	12.7	145.2	0.0	141.9	0.0
04/14/2018	131.0	0.0	132.0	0.0	140.8	17.6	143.3	0.0	154.6	12.6	144.8	8.2	139.7	0.0
04/15/2018	127.9	0.0	131.9	0.0	135.6	16.8	131.9	0.0	142.1	3.3	147.7	0.0	145.4	0.0
04/16/2018	137.2	0.0	133.9	0.0	141.5	21.0	138.5	0.0	149.6	10.6	148.7	0.0	144.0	0.0
04/17/2018	146.0	0.0	142.9	6.4	149.6	25.3	146.2	12.0	155.0	18.9	171.9	37.2	169.5	21.8
04/18/2018	155.7	0.0	159.9	0.0	169.6	34.1	168.9	12.1	176.2	31.8	182.8	61.8	179.0	42.8
04/19/2018	145.6	0.0	151.7	0.0	167.4	33.7	168.4	10.0	177.5	32.3	184.0	60.2	176.8	43.2
04/20/2018	154.5	0.0	161.2	0.0	165.7	31.1	162.4	7.3	169.0	27.0	176.6	52.0	172.2	39.1
04/21/2018	154.6	0.0	152.8	0.0	158.2	31.5	158.4	9.6	165.5	23.0	167.3	46.4	167.7	47.1
04/22/2018	158.5	0.0	160.7	0.0	166.8	30.6	168.0	10.1	175.8	31.5	190.2	55.8	187.1	60.0
04/23/2018	153.6	0.0	155.2	0.0	164.2	27.0	168.3	6.8	175.1	29.8	181.5	63.6	177.7	35.9
04/24/2018	151.8	0.0	148.7	0.0	157.7	28.8	160.2	3.9	168.5	24.1	176.1	41.6	170.7	49.7
04/25/2018	150.4	0.0	153.3	0.0	159.2	30.8	162.1	4.5	169.8	24.9	179.3	42.6	177.3	58.4
04/26/2018	159.4	0.0	160.7	0.0	169.9	30.6	172.6	17.9	179.7	32.6	191.6	55.9	188.1	60.7

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill			Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/13/2018	7.5	3.2	---	---	116.4	45.4	113.3	29.3	113.6	39.9	122.5	93.1
04/14/2018	7.5	3.1	---	---	107.5	45.3	103.3	32.4	105.3	40.0	110.9	93.0
04/15/2018	7.5	3.1	---	---	107.0	45.1	102.4	36.0	105.3	39.7	111.7	93.1
04/16/2018	7.5	3.1	---	---	106.6	45.2	103.5	36.0	103.3	39.9	109.5	92.7
04/17/2018	7.5	3.1	---	---	110.9	45.3	106.6	37.0	109.1	40.0	116.5	91.9
04/18/2018	7.5	3.2	---	---	103.3	45.2	100.9	36.9	102.6	39.8	109.9	92.0
04/19/2018	7.5	3.2	---	---	100.2	45.1	96.8	38.3	97.5	39.9	103.4	91.9
04/20/2018	7.5	3.1	---	---	96.2	45.1	93.2	36.3	95.5	40.2	103.5	91.9
04/21/2018	7.0	2.4	---	---	91.1	45.1	87.3	32.3	87.6	40.0	92.6	82.9
04/22/2018	7.0	2.5	---	---	88.1	44.1	83.9	32.4	85.1	38.5	91.2	81.6
04/23/2018	7.0	2.5	---	---	91.9	42.0	89.2	32.3	90.7	36.9	98.5	88.4
04/24/2018	7.0	2.5	---	---	94.7	40.8	90.5	31.1	87.1	34.9	96.2	85.3
04/25/2018	6.4	1.8	---	---	93.6	37.6	91.0	27.9	92.1	32.0	98.8	89.3
04/26/2018	7.3	2.5	---	---	97.2	35.4	92.0	26.6	91.7	31.9	96.4	86.4

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/13/2018	279.3	195.1	292.3	141.3	275.1	112.6	297.1	121.2	38.2	125.3
04/14/2018	275.9	195.9	281.0	144.1	265.2	110.7	288.5	123.6	40.3	112.3
04/15/2018	273.5	198.0	283.7	145.0	267.0	105.0	296.2	123.7	39.8	120.3
04/16/2018	260.6	198.1	264.3	142.9	247.4	99.5	282.1	123.3	47.5	98.9
04/17/2018	287.2	198.1	291.2	143.0	268.0	100.2	292.7	121.4	54.8	104.1
04/18/2018	295.8	197.9	302.0	143.1	290.7	108.6	322.3	120.8	67.1	121.9
04/19/2018	294.8	197.9	312.8	142.0	290.1	100.2	317.5	119.8	67.7	117.7
04/20/2018	294.1	197.7	295.9	139.8	274.9	96.5	300.1	119.9	57.2	110.6
04/21/2018	287.0	197.9	289.3	139.5	274.9	89.7	304.9	119.6	60.0	112.9
04/22/2018	265.3	198.0	267.6	138.1	250.8	89.6	279.7	120.2	48.3	98.9
04/23/2018	284.6	198.1	290.7	133.4	267.8	88.0	289.5	119.7	59.2	98.2
04/24/2018	279.5	196.3	280.1	126.7	261.9	81.5	294.4	119.6	59.3	103.1
04/25/2018	276.8	187.0	276.2	116.8	260.7	74.0	283.9	119.5	57.8	94.2
04/26/2018	286.1	171.6	284.3	106.7	266.5	68.6	287.6	122.4	58.1	94.7

Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Lower Granite Dam	04/12/18	Chinook + Steelhead	104	0	0	0.00%	0.00%	0	0	0	0
	04/19/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/26/18	Chinook + Steelhead	103	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam	04/16/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/22/18	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
Lower Monumental Dam	04/19/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/25/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam	04/14/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/16/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/22/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/24/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam	04/14/18	Chinook + Steelhead	81*	2	2			2	0	0	0
	04/18/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/21/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	04/25/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0

FISH PASSAGE CENTER

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
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[INTERNAL PURPOSES ONLY]

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Total Dissolved Gas Data at Upper Columbia Sites

Date	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph				Chief J. Dnst				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
04/13									103.1	104.2	103.4	24	102.0	103.1	102.6	24	102.9	104.2	103.4	24	102.6	103.8	102.9	24	04/13
04/14									103.6	104.1	104.3	24	102.6	103.0	103.4	24	103.1	103.4	103.6	24	102.7	103.1	103.2	24	04/14
04/15									105.0	105.6	106.0	24	103.8	104.2	104.4	24	104.2	104.7	105.0	24	103.8	104.3	104.6	24	04/15
04/16									105.3	105.9	106.0	24	103.9	104.5	104.8	24	104.7	105.0	105.1	24	104.3	104.5	104.6	24	04/16
04/17									103.8	104.8	104.6	24	102.5	103.4	103.1	24	103.5	104.4	104.0	24	104.8	106.6	110.3	24	04/17
04/18									103.4	103.9	104.8	24	101.7	102.2	102.2	24	102.4	103.1	102.7	24	102.0	105.8	102.4	24	04/18
04/19									103.6	104.0	104.7	24	102.3	102.6	102.8	24	102.5	102.7	102.9	24	102.2	102.3	102.6	24	04/19
04/20									104.6	105.3	106.2	24	102.6	103.0	103.3	24	102.8	103.2	103.4	24	102.6	102.9	103.0	24	04/20
04/21									104.4	105.2	105.2	24	102.7	103.1	103.1	24	103.3	103.5	103.8	24	102.9	103.1	103.2	24	04/21
04/22									103.9	104.1	104.2	24	102.4	102.8	103.2	24	103.1	103.4	103.8	24	102.7	102.9	103.1	24	04/22
04/23									104.3	104.8	106.4	24	102.4	102.9	103.1	24	102.9	103.2	103.5	24	102.4	102.8	102.7	24	04/23
04/24									105.8	107.1	107.4	24	103.1	103.7	103.9	24	103.6	104.1	104.3	24	103.1	103.6	103.7	24	04/24
04/25									106.1	107.2	106.9	24	104.0	104.3	104.7	24	104.8	105.2	105.6	24	104.2	104.5	104.7	24	04/25
04/26									106.6	107.0	107.7	23	104.4	105.0	105.3	23	105.2	105.6	105.9	23	104.6	105.0	105.1	23	04/26

Total Dissolved Gas Data at Upper Columbia Sites

Date	Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr				Rock Island				Rock I. Tlwr				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
04/13	102.3	103.1	102.6	24	106.4	107.3	109.9	24	105.5	106.5	106.0	24	106.0	106.8	106.4	21	104.8	105.0	105.6	21	107.0	108.2	110.6	21	04/13
04/14	102.4	102.7	102.8	24	106.8	108.5	112.4	24	106.1	107.4	108.0	24	106.6	107.5	108.4	23	105.0	105.3	106.6	24	106.8	107.3	108.4	22	04/14
04/15	103.7	104.0	104.1	24	107.3	109.1	112.1	24	108.7	109.7	111.2	24	108.9	109.8	111.2	21	107.5	108.1	108.7	22	107.7	108.3	109.9	21	04/15
04/16	103.6	104.1	104.3	24	108.0	109.3	112.4	24	108.1	110.5	111.0	24	108.3	110.3	111.0	24	107.8	109.1	109.8	24	108.7	109.9	110.7	24	04/16
04/17	102.1	103.1	102.7	24	107.8	109.2	111.3	24	106.7	107.3	107.7	23	110.0	111.3	115.3	23	106.0	106.8	108.1	23	108.8	109.5	111.7	22	04/17
04/18	102.1	102.3	102.7	24	109.1	109.2	110.7	24	107.1	107.6	108.1	24	112.2	113.4	115.7	23	107.8	108.4	108.9	23	112.3	112.6	113.4	22	04/18
04/19	102.0	102.2	102.3	24	108.6	110.1	112.2	24	109.0	109.6	109.9	24	112.8	113.2	116.2	22	108.6	109.9	110.4	22	113.1	113.8	114.9	20	04/19
04/20	102.6	102.9	103.4	24	108.9	110.8	113.1	24	110.1	110.6	111.3	24	112.2	114.3	117.0	24	109.5	110.0	111.2	24	113.2	114.2	116.3	22	04/20
04/21	102.7	103.1	103.4	24	109.3	110.6	116.8	24	108.2	110.6	109.2	24	111.4	114.9	114.4	22	108.6	110.8	111.2	23	112.3	115.3	116.0	20	04/21
04/22	102.4	102.6	102.8	24	109.2	109.4	112.5	24	109.3	110.0	111.1	24	113.1	114.4	116.0	21	109.6	110.3	110.9	24	113.9	114.2	115.0	20	04/22
04/23	102.7	102.8	102.9	24	108.5	109.8	111.3	24	109.2	110.0	110.0	24	111.2	112.2	115.1	22	109.2	110.3	110.6	22	113.1	114.0	116.2	19	04/23
04/24	103.3	103.8	104.2	24	109.5	111.6	113.4	24	110.0	110.5	111.0	24	111.5	112.2	116.7	22	109.4	110.5	110.8	23	113.0	114.3	116.3	21	04/24
04/25	104.3	104.3	104.5	24	110.7	113.0	116.0	24	110.3	111.4	111.8	24	111.9	112.8	114.6	22	109.3	110.5	111.1	24	113.3	114.4	115.4	21	04/25
04/26	104.9	105.2	105.4	23	110.5	111.1	112.6	23	111.4	112.9	113.5	23	115.7	117.7	119.8	20	110.9	111.5	114.0	20	115.1	115.5	117.2	20	04/26

FISH PASSAGE CENTER

**Total Dissolved Gas Saturation(%) - Average of
12 Highest Hours, 24 Hours Average and 24 Hours High
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[INTERNAL PURPOSES ONLY]

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Total Dissolved Gas Data at Upper and Mid-Columbia Sites

Wanapum				Wanapum Tlwr				Priest Rapids				Priest R. Dnstr				Pasco				Date	
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date
04/13	105.7	106.2	106.3	24	105.4	106.0	106.4	24	103.9	105.0	104.3	24	104.0	105.3	104.4	24					04/13
04/14	106.3	106.8	107.1	24	107.7	109.3	117.9	24	104.9	105.6	106.7	24	105.5	106.3	109.6	24					04/14
04/15	108.0	108.6	109.0	24	107.8	108.3	108.6	24	108.0	108.1	109.2	24	108.1	108.6	111.7	24					04/15
04/16	108.2	109.0	109.2	24	107.7	108.4	108.5	24	106.4	108.3	108.4	24	106.5	108.0	108.2	24					04/16
04/17	106.3	107.7	107.2	24	108.6	110.1	110.6	24	106.0	106.9	109.9	24	107.8	109.3	110.2	24					04/17
04/18	106.1	106.3	106.4	24	112.0	115.1	118.3	24	112.3	115.3	118.1	24	112.4	113.8	116.1	24					04/18
04/19	108.9	110.6	112.2	24	112.1	114.7	117.4	24	109.9	115.9	115.5	24	111.9	115.1	116.1	24					04/19
04/20	110.8	111.4	112.0	24	113.4	115.7	119.7	24	113.4	114.5	117.2	24	113.3	113.6	115.3	24					04/20
04/21	110.9	111.7	111.9	24	112.2	115.2	115.1	24	113.3	114.8	117.4	24	114.4	115.6	117.2	24					04/21
04/22	110.7	111.8	112.6	24	111.9	112.5	113.2	24	110.9	112.1	113.1	24	113.8	114.6	115.4	24					04/22
04/23	110.6	111.6	111.9	24	113.3	114.1	116.9	24	112.9	114.3	116.1	24	113.2	114.8	115.4	24					04/23
04/24	112.7	113.6	114.2	24	111.8	112.7	112.6	24	112.6	114.6	114.0	24	114.5	114.7	115.8	24					04/24
04/25	113.7	114.5	115.3	24	112.4	112.8	113.3	24	112.3	112.6	112.8	24	115.6	115.8	116.1	24					04/25
04/26	113.8	114.5	115.5	24	113.7	114.8	118.4	24	113.3	114.3	118.3	24	115.6	116.3	117.3	24					04/26

Total Dissolved Gas Data at Snake and Clearwater Sites

Dworshak				Clrwr Peck				Anatone				Clrwr-Lewiston				Lower Granite				Lower G. Tlwr				Date	
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date
04/13	109.9	111.4	110.9	24	101.2	101.7	101.9	24	104.1	104.8	105.1	24	101.3	102.1	102.5	24	102.8	104.3	103.5	24	117.4	117.7	117.6	24	04/13
04/14	109.6	109.9	110.5	24	101.4	101.8	102.1	24	105.2	105.8	106.4	24	102.5	103.4	104.2	24	102.5	102.8	103.2	24	117.6	117.9	118.1	24	04/14
04/15	111.5	112.3	112.7	24	101.7	102.4	102.7	24	105.4	106.0	106.5	24	102.9	103.8	104.7	24	104.7	105.8	106.3	24	118.2	118.4	118.7	24	04/15
04/16	111.8	112.4	112.8	24	100.8	102.4	102.2	24	104.4	106.0	105.2	24	101.9	103.8	102.8	24	106.0	106.3	106.5	24	118.2	118.4	118.5	24	04/16
04/17	109.9	111.2	110.7	24	101.4	102.3	102.7	23	104.0	104.4	104.8	24	101.1	101.8	102.1	24	103.5	105.7	104.9	24	117.8	118.2	118.2	24	04/17
04/18	110.0	110.5	111.0	24	103.2	104.2	104.6	24	104.9	105.9	106.5	24	102.3	103.7	104.9	24	102.4	102.8	103.2	24	118.0	118.1	118.6	24	04/18
04/19	111.1	111.6	111.9	24	104.0	104.7	105.3	24	105.3	105.9	106.6	24	103.0	104.1	105.2	24	103.5	104.0	104.5	24	118.1	118.2	118.5	24	04/19
04/20	110.3	111.2	110.9	24	103.7	104.7	104.8	24	105.4	106.4	107.0	24	102.9	104.3	105.3	24	104.9	105.4	105.9	24	118.3	118.5	118.7	24	04/20
04/21	107.2	109.8	108.2	24	102.8	104.4	104.1	24	104.9	106.3	105.8	24	102.4	104.0	104.2	24	105.2	105.4	105.6	24	118.3	118.5	118.6	24	04/21
04/22	106.9	107.2	107.6	24	102.6	103.3	103.8	24	104.5	105.4	106.0	24	102.2	103.6	104.7	24	104.9	105.3	105.5	24	118.0	118.3	118.8	24	04/22
04/23	106.9	107.2	108.0	24	102.6	103.3	103.9	24	104.8	105.6	106.3	24	102.3	103.7	104.8	24	104.4	105.3	105.1	24	117.4	117.8	117.8	24	04/23
04/24	107.3	107.8	108.2	24	103.0	104.0	104.6	24	105.3	106.2	107.0	24	103.0	104.6	105.9	24	104.7	105.4	106.0	24	117.2	117.5	117.9	24	04/24
04/25	105.9	107.7	109.1	24	103.1	104.1	104.5	24	105.3	106.2	106.7	24	103.0	104.3	105.7	24	105.6	106.0	106.3	24	116.9	117.2	117.3	24	04/25
04/26	108.1	108.4	108.8	23	103.4	104.2	104.9	23	104.9	105.8	106.4	23	103.3	104.7	105.9	23	106.3	106.8	107.3	23	116.6	116.8	117.1	23	04/26

FISH PASSAGE CENTER

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

[INTERNAL PURPOSES ONLY]

Date 4/27/2018 10:15:10 AM

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Total Dissolved Gas Data at Lower Snake Sites

Little Goose				L. Goose Tlwr				Lower Mon.				Lwr. Mon. Tlwr				Ice Harbor				Tlwr Ice Harbor				Date	
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date
04/13	111.8	114.4	113.0	24	113.5	114.2	113.8	24	111.7	114.4	113.1	24	117.0	117.4	117.5	24	110.9	113.5	111.9	24	119.4	119.6	119.9	24	04/13
04/14	111.3	112.1	112.9	24	114.5	115.2	115.6	24	112.4	113.1	113.8	24	117.4	117.7	117.8	24	112.2	113.1	113.7	24	119.6	120.0	120.2	24	04/14
04/15	114.9	116.2	116.9	24	116.1	116.3	116.6	24	115.3	116.4	117.4	24	117.6	117.7	118.2	24	115.2	116.3	116.6	24	120.5	120.9	121.2	24	04/15
04/16	115.8	116.6	116.9	24	115.9	116.3	116.3	24	115.9	117.1	117.5	24	117.3	117.7	117.8	24	114.6	116.4	116.4	24	119.9	120.9	120.8	24	04/16
04/17	112.3	115.2	114.4	24	115.4	115.8	117.9	24	112.5	115.0	114.3	24	117.1	117.3	117.4	24	110.4	113.5	112.2	24	119.1	119.5	119.7	24	04/17
04/18	110.4	111.1	111.1	24	115.3	115.8	116.1	24	113.2	114.2	114.9	24	116.8	117.1	117.2	24	111.0	111.9	112.7	24	119.3	119.4	119.8	24	04/18
04/19	112.1	113.1	113.8	24	116.0	116.2	116.4	24	115.2	115.7	116.3	24	116.8	117.0	117.3	24	113.6	114.3	114.8	24	119.2	119.5	120.0	24	04/19
04/20	114.9	115.9	116.3	24	116.1	116.4	116.7	24	116.5	117.0	117.6	24	116.9	117.1	117.4	24	115.3	116.0	116.6	24	119.2	119.4	119.8	24	04/20
04/21	115.6	116.2	116.2	24	115.4	115.9	115.7	24	116.8	117.5	117.8	24	116.3	117.0	116.8	24	115.5	116.3	116.3	24	116.9	119.3	119.0	24	04/21
04/22	115.5	116.0	116.5	24	115.5	115.9	116.5	24	115.7	116.5	116.7	24	116.3	116.5	116.6	24	114.9	115.4	115.3	24	116.7	117.6	118.8	24	04/22
04/23	116.0	116.2	116.6	24	115.2	115.7	115.6	24	115.4	115.8	116.1	24	116.0	116.4	116.6	24	115.5	115.9	116.2	24	118.0	118.4	119.3	24	04/23
04/24	117.0	117.7	118.6	24	115.6	116.0	116.4	24	116.8	117.2	117.6	24	116.3	116.8	117.3	24	116.5	117.0	117.6	24	117.7	118.5	119.6	24	04/24
04/25	118.9	119.1	119.7	24	115.6	115.9	116.1	24	117.9	118.0	118.1	24	115.3	116.6	116.7	24	117.3	117.4	117.7	24	118.8	119.1	119.7	24	04/25
04/26	118.9	119.4	119.9	23	115.9	116.2	116.4	23	118.1	118.2	118.5	23	115.2	115.8	116.1	23	117.6	118.0	118.5	23	118.2	118.9	119.8	23	04/26

Total Dissolved Gas Data at Mid-Columbia Sites

McNary-Wash.				Tlwr McNary				John Day				Tlwr John Day				The Dalles				Dnstr T. Dalles				Date	
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date
04/13	105.7	107.4	106.0	24	119.1	119.3	119.8	24	107.1	107.6	107.9	24	118.3	118.6	119.0	24	113.0	113.9	115.3	24	117.4	117.7	118.9	24	04/13
04/14	106.6	107.8	109.4	24	119.4	119.6	119.8	24	109.5	110.7	111.3	24	118.4	118.7	118.9	24	114.6	116.2	117.3	24	118.2	118.7	119.2	24	04/14
04/15	110.3	110.9	111.2	24	119.9	119.9	120.6	24	111.7	112.1	112.2	24	118.8	119.0	119.3	24	116.9	117.7	118.6	24	119.1	119.2	119.9	24	04/15
04/16	110.0	111.0	111.0	24	119.8	120.3	120.7	24	111.9	112.2	112.6	24	118.5	118.9	118.9	24	114.4	117.7	117.0	24	117.3	119.0	118.4	24	04/16
04/17	106.6	109.4	108.2	24	119.3	119.5	119.6	24	112.0	112.4	112.5	24	118.4	118.7	119.0	24	113.0	113.5	113.7	24	116.0	116.7	116.7	24	04/17
04/18	105.4	105.9	106.6	24	119.5	119.5	120.0	24	112.3	112.5	112.8	24	118.7	118.9	119.1	24	115.1	115.9	116.2	24	117.8	118.5	119.3	24	04/18
04/19	108.0	109.7	110.9	24	119.5	119.7	119.9	24	111.3	112.5	112.2	24	118.5	118.7	119.3	24	115.2	116.0	116.2	24	117.3	118.6	118.1	24	04/19
04/20	111.7	112.5	113.4	24	119.6	119.9	120.1	24	110.5	111.1	111.1	24	118.3	118.6	118.7	24	114.7	115.6	116.6	24	117.1	117.4	117.9	24	04/20
04/21	112.6	113.5	113.8	24	119.9	120.2	120.5	24	111.8	112.8	113.4	24	118.0	118.4	118.3	24	113.3	115.6	114.8	24	115.5	117.1	116.5	24	04/21
04/22	111.2	111.8	112.3	24	119.6	119.8	120.1	24	113.8	114.5	115.1	24	117.8	118.1	118.2	24	115.5	116.6	117.1	24	117.2	118.1	118.7	24	04/22
04/23	112.4	113.3	114.3	24	119.7	120.1	120.3	24	115.4	115.9	116.3	24	118.0	118.4	118.8	24	116.8	117.0	117.5	24	117.9	118.3	118.8	24	04/23
04/24	113.4	114.3	115.0	24	119.8	120.0	120.3	24	116.0	116.4	116.7	24	118.0	118.4	118.6	24	116.8	117.5	118.1	24	117.6	118.0	118.3	24	04/24
04/25	114.5	114.8	115.3	24	120.4	120.5	120.6	24	117.4	118.3	119.2	24	117.8	118.2	118.2	24	116.8	117.8	117.8	23	117.3	118.1	118.0	24	04/25
04/26	115.3	116.4	117.4	23	119.4	120.3	120.6	23	120.1	120.9	121.4	23	118.1	118.3	118.6	23	117.4	118.2	118.8	23	117.0	117.4	117.7	23	04/26

FISH PASSAGE CENTER

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

[INTERNAL PURPOSES ONLY]

Date 4/27/2018 10:15:10 AM

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Total Dissolved Gas Data at Mid-Columbia Sites

Date	Bonneville				Warrendale				Camas\Washug.				Cascade Islid.				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
04/13	115.2	116.1	116.5	24	117.3	117.5	118.1	24	114.0	114.2	114.3	24	119.4	119.8	120.1	24	04/13
04/14	117.6	118.2	118.8	24	118.7	119.2	119.4	24	116.1	117.3	117.7	24	119.9	120.0	120.2	24	04/14
04/15	119.5	120.2	120.6	24	120.0	120.3	120.7	24	118.2	118.9	119.6	24	120.4	120.7	120.9	24	04/15
04/16	117.3	120.2	119.8	24	118.4	120.2	119.8	24	115.3	118.8	117.4	24	119.9	120.6	120.4	24	04/16
04/17	113.0	115.7	114.6	24	115.8	117.8	116.9	24	113.3	115.0	113.9	24	119.2	119.5	119.6	24	04/17
04/18	115.5	116.4	117.1	24	117.1	117.5	117.7	24	114.6	115.5	116.1	24	119.5	119.9	120.6	24	04/18
04/19	117.7	117.9	118.2	24	118.3	118.5	118.6	24	116.5	117.9	118.6	24	119.5	119.8	120.3	24	04/19
04/20	117.2	117.9	117.7	24	118.3	118.5	118.8	24	117.4	118.4	119.1	24	119.8	120.0	120.1	24	04/20
04/21	115.4	117.3	116.7	24	117.1	118.4	117.7	24	116.1	118.3	117.4	24	119.6	120.0	119.9	24	04/21
04/22	115.2	115.6	115.9	24	117.5	118.1	118.6	24	115.9	117.0	117.6	24	119.2	119.5	119.5	24	04/22
04/23	116.2	116.5	116.9	24	117.5	118.1	118.0	24	115.0	117.0	116.1	24	119.4	119.5	119.7	24	04/23
04/24	116.7	116.9	117.6	24	117.8	118.1	118.3	24	114.0	115.2	115.8	24	119.6	119.7	119.8	24	04/24
04/25	118.1	118.2	118.4	24	118.6	119.0	119.4	24	116.7	118.5	119.4	24	119.6	119.7	120.0	24	04/25
04/26	117.2	118.2	118.1	23	118.4	118.9	118.9	23	116.6	118.7	118.0	23	119.9	120.4	121.4	23	04/26

Hours used in calculating values:

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED YEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
04/13/2018		867	376	122	62,209	38,466		11	8,432		33,067
04/14/2018	719	527	418	111	100,617		45,578	16		21,276	40,659
04/15/2018		154	268	72	62,723	68,159		10	8,747		19,125
04/16/2018	409	110	145	97	54,647		57,168	20		25,356	24,428
04/17/2018	1,869	203	183	462	66,677	60,666		78	14,750		28,530
04/18/2018	806	157	291	553	68,418		77,240	289		18,468	29,905
04/19/2018	559	68	185	258	42,612	71,764		610	28,426		39,217
04/20/2018	337	64	106	311	52,663		57,090	906		31,907	22,412
04/21/2018		94	186	326	42,944	103,395		421	26,228		16,676
04/22/2018		112	195	100	48,701		45,597	256		39,771	19,113
04/23/2018	687	101	257	165	24,492	33,041	15,444	227	25,460		24,679
04/24/2018	1,469	118	226	331	45,631	84,956	51,730	349		46,705	42,131
04/25/2018	532		191	896	28,437	64,275	54,328	359	28,267		38,477
04/26/2018			997	891	31,936	58,505	40,756	420		36,611	30,235
04/27/2018											
Total:	7,387	2,575	4,024	4,695	732,707	583,227	444,931	3,972	140,310	220,094	408,654
# Days:	9	12	14	14	14	9	9	14	7	7	14
Average:	821	215	287	335	52,336	64,803	49,437	284	20,044	31,442	29,190
YTD:	23,914	39,631	16,534	6,404	1,283,379	683,194	496,072	4,009	156,175	258,624	548,854

Number of hours sampled:

- No data available or no sample conducted

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED SUBYEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
04/13/2018		0	0	0	1,018	830		66	0		9,904
04/14/2018	0	0	0	0	5,997		0	29		0	6,750
04/15/2018		0	0	0	4,505	0		27	72		2,854
04/16/2018	0	0	0	0	348		0	25		0	2,004
04/17/2018	0	0	0	0	2,431	0		30	260		2,163
04/18/2018	0	0	0	0	342		0	20		0	3,231
04/19/2018	0	0	0	0	0	326		35	494		1,963
04/20/2018	0	0	1	0	0		0	40		0	712
04/21/2018		0	0	0	383	0		11	1,580		1,551
04/22/2018		0	0	0	0		0	30		0	1,464
04/23/2018	0	0	0	0	0	0	0	48	561		1,792
04/24/2018	0	0	0	0	0	0	0	31		0	2,121
04/25/2018	0		0	0	0	0	0	20	532		1,195
04/26/2018			0	2	0	0	0	10		0	1,277
04/27/2018											
Total:	0	0	1	2	15,024	1,156	0	422	3,499	0	38,981
# Days:	9	12	14	14	14	9	9	14	7	7	14
Average:	0	0	0	0	1,073	128	0	30	500	0	2,784
YTD:	0	0	2	38	21,068	1,156	0	594	3,651	289	865,565

Number of hours sampled:

- No data available or no sample conducted

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED COHO

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
04/13/2018		0	2	26	0	0		6	169		5,639
04/14/2018	0	0	2	58	666		156	0		118	8,037
04/15/2018		0	4	32	1,040	298		5	36		4,951
04/16/2018	0	0	3	7	696		0	4		204	5,637
04/17/2018	0	0	1	19	695	0		3	87		6,896
04/18/2018	0	0	1	9	342		0	4		96	6,418
04/19/2018	0	0	1	10	355	0		4	1,359		5,709
04/20/2018	0	0	0	17	0		0	4		471	8,183
04/21/2018		0	3	9	383	320		16	5,371		3,232
04/22/2018		0	0	2	0		0	22		970	2,711
04/23/2018	0	0	0	16	196	0	0	44	1,123		3,033
04/24/2018	0	0	1	39	549	316	0	20		738	3,817
04/25/2018	0		1	78	347	0	0	21	6,567		4,127
04/26/2018			1	45	165	290	0	10		336	3,392
04/27/2018											
Total:	0	0	20	367	5,434	1,224	156	163	14,712	2,933	71,782
# Days:	9	12	14	14	14	9	9	14	7	7	14
Average:	0	0	1	26	388	136	17	12	2,102	419	5,127
YTD:	0	0	70	652	7,584	1,235	156	180	15,567	3,413	101,609

Number of hours sampled:

- No data available or no sample conducted

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED STEELHEAD

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
04/13/2018		600	47	103	82,170	144,428		6	3,626		304
04/14/2018	47	285	27	70	178,910		75,289	11		7,498	803
04/15/2018		68	29	75	73,121	93,159		4	6,028		2,188
04/16/2018	47	108	27	116	65,089		82,037	4		9,980	1,839
04/17/2018	83	251	37	443	123,283	161,601		9	5,165		2,569
04/18/2018	109	350	43	263	61,576		100,693	14		27,606	3,870
04/19/2018	70	185	17	213	37,285	63,249		39	27,626		5,081
04/20/2018	57	104	12	149	58,516		86,445	29		29,742	10,496
04/21/2018		112	75	193	44,477	112,965		55	15,166		9,308
04/22/2018		158	78	158	63,717		50,745	105		35,697	11,820
04/23/2018	42	246	144	280	22,139	45,724	16,547	165	13,684		9,651
04/24/2018	64	192	88	254	39,596	64,808	68,174	185		43,752	8,624
04/25/2018	49		518	514	32,945	60,678	68,752	172	11,845		10,103
04/26/2018			138	139	46,826	46,909	58,489	179		31,573	10,964
04/27/2018											
Total:	568	2,659	1,280	2,970	929,650	793,521	607,171	977	83,140	185,848	87,620
# Days:	9	12	14	14	14	9	9	14	7	7	14
Average:	63	222	91	212	66,404	88,169	67,463	70	11,877	26,550	6,259
YTD:	744	13,312	1,454	3,732	1,418,934	1,101,907	625,237	983	89,253	187,903	91,551

Number of hours sampled:

- No data available or no sample conducted

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED SOCKEYE

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
04/13/2018		0	0	0	0	558		48	211		0
04/14/2018	0	0	0	0	666		156	147		39	0
04/15/2018		0	0	0	0	301		159	434		215
04/16/2018	0	0	0	0	348		323	139		0	0
04/17/2018	0	0	0	0	0	320		74	433		0
04/18/2018	0	0	0	0	342		1,251	248		289	0
04/19/2018	0	0	0	0	355	342		812	556		78
04/20/2018	0	0	0	0	0		0	551		188	0
04/21/2018		0	0	0	767	962		609	0		646
04/22/2018		0	0	0	406		368	490		582	569
04/23/2018	0	0	0	0	392	660	0	548	1,203		414
04/24/2018	0	0	0	0	183	952	343	535		554	141
04/25/2018	0		0	0	347	900	314	104	1,242		171
04/26/2018			0	0	331	589	311	52		840	493
04/27/2018											
Total:	0	0	0	0	4,137	5,584	3,066	4,516	4,079	2,492	2,727
# Days:	0	0	0	0	296	620	341	323	583	356	195
Average:	0	0	0	0	296	620	341	323	583	356	195
YTD:	0	0	0	0	10,310	13,432	3,607	4,651	4,487	2,586	3,151

Number of hours sampled:

- No data available or no sample conducted

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

Smolt Monitoring Program Two Week Passage Index Report

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COMBINED LAMPREY JUVENILES

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR* (Sample)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
04/13/2018		0	0	0	0	800		2	190		133
04/14/2018	0	0	0	0	0		0	0		220	133
04/15/2018		0	0	0	0	0		1	150		200
04/16/2018	0	0	0	0	0		0	0		200	50
04/17/2018	0	0	0	0	0	0		0	580		50
04/18/2018	0	0	0	0	0		0	1		250	0
04/19/2018	0	0	0	0	0	0		1	700		143
04/20/2018	0	0	0	0	1		0	7		250	0
04/21/2018		0	0	0	0	400		2	3,100		100
04/22/2018		0	0	0	0		0	1		500	150
04/23/2018	0	0	0	0	0	0	0	1	2,280		50
04/24/2018	0	0	0	0	0	200	0	0		0	0
04/25/2018	0		0	0	0	0	0	1	50		0
04/26/2018			0	0	0	0	0	0		200	50
04/27/2018											
Total:	0	0	0	0	1	1,400	0	17	7,050	1,620	1,059
# Days:	9	12	14	14	14	10	9	14	7	10	15
Average:	0	0	0	0	0	140	0	1	1,007	162	71
YTD:		1	3		3	4,834		24	7,302	35,800	6,038

- No data available or no sample conducted

- Juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection. Therefore, only sample counts are provided in this report.

Number of hours sampled:

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

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Smolt Monitoring Program Sites and Agency Collaborations:

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

- No data available or no sample conducted

Number of hours sampled:

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

- For clip information see: <http://www.fpc.org/currentdaily/smpcomments.htm>
- Three classes of fish counts are shown in these tables:
 Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details.
 Collection counts (Coll), which account for sample rates but are not adjusted for flow;
 Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.
 Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations. Equations for passage index are provided below for each site.
 LGR, LGS, LMN, MCN, JDA (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts $\text{Passage Index} = \text{Collection Counts} / (\text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}))$
 RIS, BO2 (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts $\text{Passage Index} = \text{Collection Counts} / (\text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}))$
- Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, pacific lamprey macrophthalmia, and unidentified lamprey species.
- Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

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Two Week Transportation Summary Report

4/13/2018 12:00:00 AM TO 4/27/2018 12:00:00 AM

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Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	8,800	415,092	3,100	2,300	529,922	1,489,136
Sum of Number Barged	223	78,851	742	623	88,204	256,847
Sum of Number Bypassed	8,575	336,109	2,357	1,662	441,687	1,232,077
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	2	22	0	0	9	42
Sum of Facility Morts	0	110	1	15	19	164
Sum of Reseach Morts	0	0	0	0	3	6
Sum of Total Project Mort	2	132	1	15	31	212

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	800	379,024	801	3,641	522,720	1,429,706
Sum of Number Barged	0	137,391	400	1,599	114,194	367,778
Sum of Number Bypassed	800	241,499	400	1,999	408,498	1,061,694
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	3	0	1	3	10
Sum of Facility Morts	0	131	1	42	25	224
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	134	1	43	28	234

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Two Week Transportation Summary Report

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Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	0	271,800	100	1,900	372,100	1,018,000
Sum of Number Barged	0	99,420	0	598	130,226	360,470
Sum of Number Bypassed	0	172,350	100	1,298	241,850	657,448
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	3	0	2	1	7
Sum of Facility Morts	0	27	0	2	23	75
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	30	0	4	24	82

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	9,600	1,065,916	4,001	7,841	1,424,742	3,936,842
Sum of Number Barged	223	315,662	1,142	2,820	332,624	985,095
Sum of Number Bypassed	9,375	749,958	2,857	4,959	1,092,035	2,951,219
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	2	28	0	3	13	59
Sum of Facility Morts	0	268	2	59	67	463
Sum of Reseach Morts	0	0	0	0	3	6
Sum of Total Project Mort	2	296	2	62	83	528

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YTD Transportation Summary Report

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Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	12000	695570	4300	5120	783696	2284382
Sum of Number Barged	398	92438	760	641	102103	298443
Sum of Number Bypassed	11596	602980	3539	4464	681548	1985675
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	6	31	0	0	18	73
Sum of Facility Morts	0	121	1	15	24	185
Sum of Reseach Morts	0	0	0	0	3	6
Sum of Total Project Mort	6	152	1	15	45	264

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	800	443740	808	9367	725883	1906481
Sum of Number Barged	0	137391	400	1599	114194	367778
Sum of Number Bypassed	800	306206	407	7716	611659	1538447
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	10	0	6	4	24
Sum of Facility Morts	0	133	1	46	26	232
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	143	1	52	30	256

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YTD Transportation Summary Report

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Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	0	298883	100	2200	382417	1066017
Sum of Number Barged	0	99420	0	598	130226	360470
Sum of Number Bypassed	0	199433	100	1598	252167	705465
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	3	0	2	1	7
Sum of Facility Morts	0	27	0	2	23	75
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	30	0	4	24	82

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	12800	1438193	5208	16687	1891996	5256880
Sum of Number Barged	398	329249	1160	2838	346523	1026691
Sum of Number Bypassed	12396	1108619	4046	13778	1545374	4229587
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	6	44	0	8	23	104
Sum of Facility Morts	0	281	2	63	73	492
Sum of Reseach Morts	0	0	0	0	3	6
Sum of Total Project Mort	6	325	2	71	99	602

Cumulative Adult Passage at Mainstem Dams Through: 04/26

dam	enddate	Spring Chinook						Summer Chinook						Fall Chinook					
		2018		2017		10-Yr Avg.		2018		2017		10-Yr Avg.		2018		2017		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/26	1279	25	2344	7	33004	285	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/26	307	7	369	6	18261	156	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/26	217	8	202	7	13773	140	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/26	81	0	96	1	8103	79	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/26	44	2	65	1	4564	13	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/26	35	2	52	1	2769	14	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/26	35	2	31	2	1669	29	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/26	16	2	14	0	899	11	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	04/25	1	0	0	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	04/25	0	0	0	0	11	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	04/25	466	25	16	0	3809	51	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2018		2017		10-Yr Avg.		10-Yr			10-Yr			Unclipped			10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.
PRD	04/26	1	-1	0	0	0	0	0	0	0	2457	2409	3429	1043	852	1235	0	0	0
RIS	04/26	4	0	0	0	0	0	0	0	0	135	1417	1870	43	482	856	-2	0	0
RRH	04/26	0	0	0	0	0	1	0	0	0	344	465	3660	154	298	1625	0	0	-1
WEL	04/26	-2	0	0	0	1	0	0	0	0	349	2474	3918	163	721	1572	16	0	0
IHR	04/26	-1	0	0	0	0	0	0	0	0	1186	928	3880	380	446	1375	2	0	0
LMN	04/26	0	0	0	0	0	0	0	0	0	1062	1256	7680	272	594	2527	0	0	0
LGS	04/26	0	0	0	0	0	0	0	0	0	1028	1266	4475	252	565	2223	0	0	0
LGR	04/26	0	0	0	0	0	0	0	0	0	4270	7073	8109	1141	2915	3261	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	04/25	0	0	0	0	0	0	0	0	0	33	31	62	8	9	34	0	0	0
RRH	04/25	0	0	0	0	0	0	0	0	0	49	74	172	15	10	114	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	04/25	0	2	117	117	0	0	0	0	0	1524	590	5794	1307	560	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.

