



# Fish Passage Center

## Weekly Report #18-09

May 4, 2018

### This Week's Highlights

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 4% and 29% of average at individual sub-basins over early May. Precipitation above The Dalles has been 18% of average over April. Over the 2018 water year, precipitation has ranged between 94% and 119% of average.

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

Location	Water Year 2018 May 1-3, 2018		Water Year 2018 October 1, 2017 to May 3, 2018	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	0.06	21	27.8
Snake River Above Ice Harbor	0.06	23	15.2	94
Columbia Above The Dalles	0.04	18	19.5	100
Kootenai	0.06	19	27.6	108
Clark Fork	0.07	25	20.2	112
Flathead	0.07	21	28.4	119
Pend Oreille River Basin above Waneta Dam	0.07	21	24.8	119
Salmon River Basin	0.08	29	19.9	98
Upper Snake Tributaries	0.07	24	18.1	99
Clearwater	0.07	20	34.4	116
Willamette River above Portland	0.02	4	51.9	94

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 142% of average, for Snake River Basins the average snowpack is 77% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 40% of average.

Table 2 displays the May 3<sup>rd</sup> ESP runoff volume forecasts for multiple reservoirs along with the April COE forecasts at Libby and Dworshak. The May 3<sup>rd</sup> ESP forecast at The Dalles between April and August is 106,883 Kaf (122% of average).

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

Location	May 3, 2018 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	122	106,883
Grand Coulee (Apr-Aug)	126	71,449
Libby Res. Inflow, MT (Apr-Aug)	127 122*	7,488 7,189*
Hungry Horse Res. Inflow, MT (Apr-Aug)	151	2,927
Lower Granite Res. Inflow (Apr- July)	116	22,978
Brownlee Res. Inflow (Apr-July)	108	5,889
Dworshak Res. Inflow (Apr-July)	121 125*	2,915 3,040*

\* Denotes COE April Forecast

Grand Coulee Reservoir is at 1221.5 feet (5-3-18) and has drafted 0.9 feet over the last week. Outflows at Grand Coulee have ranged between 157.2 Kcfs and 182.3 Kcfs over the last week. The April 30<sup>th</sup> FC Elevation at Grand Coulee was 1222.7 ft. (based on April Forecast).

The Libby Reservoir is currently at elevation 2367.0 feet (5-3-18) and has refilled 6.6 feet over the past week. Daily average outflows at Libby Dam have been 9.2 Kcfs over the last week. The April 30<sup>th</sup> FC at Libby was 2359.3 ft. (based on April Forecast).

Hungry Horse is currently at an elevation of 3480.0 feet (5-3-18) and has refilled 8.3 feet last week. Outflows at Hungry Horse have been 6.6-12.4 Kcfs over the last week. The April 30<sup>th</sup> FC at Hungry Horse was 3475.5 ft. (based on April Forecast).

Dworshak is currently at an elevation of 1496.8 feet (5-3-18) and continues to refill, filling 12.6 feet over last week. Dworshak outflows have been 4.6-7.1 Kcfs.

The Brownlee Reservoir was at an elevation of 2030 feet on May 3<sup>rd</sup>, 2018 and has refilled 8.6 feet. Outflows at Hells Canyon have ranged between 15.2 and 26.6 Kcfs over the last four days. The April 30<sup>th</sup> FC (based on April forecast) was 2014.7 ft.

The Biological Opinion flow period began on April 3<sup>rd</sup> in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 4<sup>th</sup>, 2018), the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 105.0 Kcfs last week; over the spring season have averaged 95.5 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 April 10<sup>th</sup>). Flows at McNary averaged 323.0 Kcfs last week at McNary and 291.1 Kcfs over the spring season. Flows averaged 213.4 Kcfs at Priest Rapids last week and 176.8 Kcfs over the spring season.

### Spill

Flows in the Lower Snake River increased this week, when compared to the previous week. Daily average flows at Lower Granite Dam ranged from 91.4 to 118.2 Kcfs this week. Flows in the Mid-Columbia River also increased this week when compared to last week. Daily average flows at McNary Dam ranged from 295.8 to 341.3 Kcfs this week.

The 2018 spill for fish passage program at the lower Snake River and Mid-Columbia FCRPS projects began just after midnight on April 3<sup>rd</sup> and April 10<sup>th</sup>, 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 (4/27-5/3)
Lower Granite	Gas Cap/Gas Cap	31-35 Kcfs
Little Goose	Gas Cap/Gas Cap	28-30 Kcfs
Lower Monumental	Gas Cap/Gas Cap	31 Kcfs
Ice Harbor	Gas Cap/Gas Cap	85 Kcfs
McNary	Gas Cap/Gas Cap	145 Kcfs
John Day	Gas Cap/Gas Cap	90 Kcfs
The Dalles	Gas Cap/Gas Cap	65-90 Kcfs
Bonneville	Gas Cap/Gas Cap	121 Kcfs

The estimated 115%/120% spill cap for Lower Granite Dam (LGR) started at 36 Kcfs on the afternoon of Thursday, April 26<sup>th</sup>, was decreased to 31 Kcfs on Friday, April 27<sup>th</sup>, but steadily increased to as high as 35 Kcfs by the afternoon of May 3<sup>rd</sup>. Spill volumes at LGR have met the estimated 115%/120% spill caps this week, with one exception. On Wednesday, May 2<sup>nd</sup>, spill at LGR exceeded the estimated spill caps for approximately six hours. This special operation was coordinated through TMT and was necessary to conduct repairs at the project. During this operation, river flows were passed as spill up to ~60 Kcfs and any remaining flows were stored in the forebay. Any water stored in the forebay was released over the following days in order to return to standard MOP+1 elevation. Total dissolved gas (TDG) has not exceeded the 120% waiver limit in the LGR tailrace but did exceed the 115%

waiver limit in the Little Goose (LGS) forebay on April 27<sup>th</sup> and April 28<sup>th</sup>. It is worth noting that the 12-hour average TDG in the LGS forebay on April 27<sup>th</sup> and 28<sup>th</sup> exceeded what had occurred at the LGR tailrace over the previous several days. The estimated spill caps for LGS started at 28 Kcfs for Friday, April 27<sup>th</sup> but were increased to 30 Kcfs on the afternoon of May 2<sup>nd</sup> where they have remained. Although the spill cap at LGS was 28 Kcfs for April 27<sup>th</sup> and 28<sup>th</sup>, actual spill volumes during much of this period were approximately 26.5 Kcfs. Spill exceeded the estimated spill caps at LGS from late in the evening on April 28<sup>th</sup> through late May 1<sup>st</sup>. This is due to high flows and limited hydraulic capacity at LGS during this time. 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 19<sup>th</sup>. Similar to the observations from spill at LGR, the 12-hour average TDG in the LMN forebay in the early portion of the week exceeded what had been observed in previous days at the LGS tailrace. The estimated spill caps for LMN started at 33 Kcfs on the afternoon of April 26<sup>th</sup> but was reduced to 31 Kcfs on April 27<sup>th</sup> where it has remained since. Spill volumes at LMN have met or exceeded the estimated spill cap this week. Total dissolved gas in the LMN tailrace have not exceeded the 120% waiver limit this week but TDG did exceed the 115% waiver limit in the Ice Harbor (IHR) forebay in five out of the last seven days. Similar to observations from spill at LGR and LGS, the 12-hour average TDG levels in the IHR forebay on April 27<sup>th</sup> and 28<sup>th</sup> exceeded what had been previously observed in the LMN tailrace. The estimated spill cap for IHR started out at 92 Kcfs on the afternoon of April 27<sup>th</sup> but was reduced to 85 Kcfs on April 27<sup>th</sup> where it has remained since. Spill volumes this week have met the estimated spill cap. Total dissolved gas has not exceeded the 120% TDG waiver limit in the IHR tailrace but did exceed the 115% waiver limit in the McNary (MCN) forebay on April 27<sup>th</sup> and 28<sup>th</sup>. Finally, early in the week, the 12-hour average TDG levels in the LGS and LMN forebays continued to be greater than what was observed in their respective tailraces. For example, on April 27<sup>th</sup> and 28<sup>th</sup>, the 12-hour average TDG in the LGS forebay was 120% and 119%, whereas that in the LGS tailrace was only 117% and 116%, respectively.

In general, spring spill volumes at the Mid-Columbia projects met their respective spill caps on April 27<sup>th</sup>

and April 28<sup>th</sup> but have exceeded these caps ever since. Spill in excess of the caps is due to increased flows and limited hydraulic capacity. The estimated spill cap for McNary Dam (MCN) started out at 165 Kcfs on the afternoon of April 26<sup>th</sup> but was reduced to 145 Kcfs on April 27<sup>th</sup> where it has remained since. 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 was exceeded from April 27<sup>th</sup> through April 29<sup>th</sup>. On April 27<sup>th</sup>, the 12-hour average TDG in the JDA forebay was 122%, which is higher than any 12-hour average TDG observed in the MCN tailrace over the entire month of April. The estimated spill cap for JDA started out at 100 Kcfs on the afternoon of April 26<sup>th</sup> but was reduced to 90 Kcfs on April 27<sup>th</sup> where it has remained. Total dissolved gas has not exceeded the 120% waiver limit in the JDA tailrace but did exceed the 115% waiver limit at The Dalles (TDA) forebay on April 27<sup>th</sup>. The estimated spill cap for The Dalles Dam started at 65 Kcfs on Friday, April 27<sup>th</sup> but was increased to 90 Kcfs on the afternoon of April 29<sup>th</sup> where it has remained. Due to the uncontrolled spill at TDA, the 12-hour average TDG has exceeded the 120% waiver limit at the TDA tailrace since May 2<sup>nd</sup> and the 115% waiver limit for the Bonneville (BON) forebay was exceeded in five of the last seven days. 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 in six of the last seven days. Recent exceedences at Cascade Island are likely due to the uncontrolled spill at BON.

Spill at Dworshak Dam was terminated on May 1<sup>st</sup>. Since this time, TDG levels below Dworshak Dam have decreased to 100%. The 12-hour average TDG levels at the Lower Granite Dam forebay monitor have ranged from 104% to 107% 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 five of the nine GBT samples conducted this week (April 27-May 3). No signs of GBT were observed at Lower Granite or McNary dams this week. Bonneville observed zero fish with signs of GBT in their sample on April 28<sup>th</sup> but one fish (1.0%) with rank 1 signs of GBT in their sample on May 1<sup>st</sup>. Rock Island observed one fish (1.0%) with rank 1 signs of GBT in the sample from April 30<sup>th</sup> and one fish (1.0%) with rank 1 signs on GBT in the sample on May 3<sup>rd</sup>. Little Goose observed one fish (1.0%) with rank 1 signs of GBT in their sample on April 30<sup>th</sup>. Lower Monumental observed one fish (1.0%) with rank 1 signs on GBT in their sample on May 2<sup>nd</sup>. 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 and McNary are close to the current 10-year average. Temperatures at Ice Harbor increased this week and are currently above the 10-year average. Temperatures at Lower Granite also increased in the early portion of the week but, more recently, have come back down to the current 10-year average.

## **Smolt Monitoring**

Smolt Monitoring Program (SMP) activities continued at all bypass facilities this week. Sampling also continued at all SMP traps this week, except the Salmon River Trap. Sampling at this trap has been suspended since April 25<sup>th</sup> due to equipment malfunctions and high flows.

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 50,800 per day, which is a large increase over last week's daily average passage index of about 27,700 per day. Coho, sockeye, and steelhead passage also increased this week, when compared to last week. This week's daily average passage indices for these three species were 12,800, 1,800, and 12,200 per day, respectively. Last week's daily average passage indices were 4,100 for coho, 350 for sockeye, and 10,100 for steelhead. Subyearling Chinook passage decreased slightly this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook was about 1,200 per day, whereas that for last week was about 1,450. Pacific lamprey macrophthalmia were encountered in three of this week's samples while no ammocoetes were encountered this week.

Similar to the last two years, sampling at John Day Dam (JDA) is every-other-day. Yearling Chinook dominated the samples at JDA this week. This week's daily average passage index for yearling Chinook was 73,800, which is a large increase over last week's daily average passage index of 38,750. Coho, sockeye, and steelhead passage also increased this week, when compared to the previous week. This week's daily average passage indices for these three species were 2,100, 6,700, and 44,200 per day, respectively. Last week's daily average passage indices were 630 for coho, 550 for sockeye, and 35,200 for steelhead. Subyearling Chinook fry were encountered in only one of this week's samples (April 28<sup>th</sup>). Pacific lamprey macrophthalmia were encountered in two of this week's three samples while ammocoetes were encountered in only one (April 28<sup>th</sup>).

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 70,000 per day. This is a large increase over last week's daily average passage index of about 27,000 per day. Sockeye were the second most abundant species in this week's samples. This week's daily average passage index for sockeye was 23,150 per day, which is a substantial increase over last week's daily average passage index of 800 per day. Subyearling Chinook, coho, and steelhead passage also increased this week, when compared to the previous week. This week's daily average passage indices for these three species were nearly 1,200, nearly 6,000, and 15,300 per day. Last week's daily average passage indices were 900 for subyearling Chinook, 4,350 for coho, and 13,600 for steelhead. As with previous weeks, all of the subyearling Chinook that were encountered this week were fry. Finally, Pacific lamprey macrophthalmia were encountered in three of this week's four samples while no ammocoetes were encountered. This week's daily average collection for Pacific lamprey macrophthalmia was about 150 per day, which is a large decrease over last week's daily average collection of about 1,800 macrophthalmia per day.

Overall, yearling Chinook dominated the samples at Lower Granite Dam (LGR) this week. This week's daily average passage index for yearling Chinook was about 169,000 per day, which is a large increase over last week's daily average passage index of nearly 40,000 per day. Of the yearling Chinook collected this week, approximately 87% were of hatchery origin (i.e., clipped or CWT). Steelhead passage also increased this week, when compared to last week. This week's daily average passage index for steelhead was 113,600 per day, whereas that for last week was only 44,000 per day. Approximately 87% of the steelhead collected at LGR this week were of hatchery origin. Sockeye, coho, and subyearling Chinook passage also increased this week. This week's daily average passage indices for these three species were 500, 4,800, and 350 per day, respectively. Last week's daily average passage indices were 350 for sockeye, 230 for coho, and 50 for subyearling Chinook. The majority of the sockeye collected so far this year are likely kokanee from Dworshak reservoir, as spill from Dworshak Dam occurred from January through April 30<sup>th</sup>. All of the subyearling Chinook encountered in this week's samples were fry. Pacific lamprey macrophthalmia were encountered in three of this week's samples (May 1-3). No other lamprey juveniles were encountered this week. The Fish Passage Center has continued to notice some

delay occurring in PIT-tagged juvenile salmon passage through the bypass at Lower Granite Dam. Fish have been observed holding just above the separator. A memo describing this 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 (April 23<sup>rd</sup>), at which time sampling changed to every day. Steelhead dominated this week's samples at LGS. This week's daily average passage index was nearly 98,000 per day, which is an increase over last week's daily average passage index of 66,000 per day. Passage of coho also increased this week, when compared to the previous week. This week's daily average passage index was 2,500 per day, whereas that for last week was about 200 per day. Yearling Chinook passage this week was similar to last week. This week's daily average passage index for yearling Chinook at LGS was 68,200 per day. Sockeye passage decreased this week, when compared to the previous week. This week's daily average passage index was 200 per day, whereas that for last week was about 800 per day. Similar to Lower Granite, most of the sockeye encountered this week were likely kokanee from Dworshak reservoir. No subyearling Chinook fry were encountered in this week's samples. Pacific lamprey macrophthalmia were encountered in only one of this week's samples (May 1<sup>st</sup>) while no ammocoetes were encountered this week.

Sampling at Lower Monumental Dam (LMN) was every-third-day through April 14<sup>th</sup>, transitioned to every-other-day through April 23<sup>rd</sup>, and then transitioned to every day with the start of transportation. This week's samples at LMN were dominated by steelhead. This week's daily average passage index for steelhead was nearly 86,000 per day, which is an increase over last week's daily average passage index of approximately 58,000 per day. Yearling Chinook passage also increased this week when compared to last week. This week's daily average passage index for yearling Chinook was 70,000 per day, whereas that for last week was about 44,000 per day. Although relatively low compared to yearling Chinook and steelhead, sockeye and coho passage also increased this week. This week's daily average passage indices for these two species were 500 and 750, respectively. Last week's daily average passage indices were 220 for sockeye and 0 for coho. Similar to Lower Granite and Little Goose, most of the

sockeye encountered this week were likely kokanee from Dworshak reservoir. Finally, Pacific lamprey macrophthalmia were encountered in two of this week's samples (April 27<sup>th</sup> and 28<sup>th</sup>) and ammocoetes were encountered in only one sample (April 29<sup>th</sup>).

Sockeye dominated this week's samples at Rock Island Dam (RIS). This week's daily average passage index was 2,400 per day, which is a large increase from last week's daily average passage index of 400 per day. Passage of yearling Chinook, steelhead, and coho also increased this week, when compared to last week. This week's daily average passage indices for these three species were 1,550, 500, and 135 per day, respectively. Last week's daily average passage indices were 420 for yearling Chinook, 130 for steelhead, and 20 for coho. Subyearling Chinook were also encountered in this week's samples but in relatively low numbers. Similar to previous weeks, nearly all of the subyearling Chinook that were collected this week were fry. Finally, Pacific lamprey macrophthalmia were collected every day this week and ammocoetes were encountered in one (May 3<sup>rd</sup>) of this week's samples. The daily average collection for Pacific lamprey macrophthalmia for this week was 5 per day.

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. Due to increased collections of yearling Chinook, sampling at LEW was modified this week. These modifications began on May 1<sup>st</sup> and involved reducing the sampling period to 6-8 hours per day. The intent of these modifications is to reduce the number of listed hatchery yearling Chinook being handled at the trap. It is likely that this modified sampling schedule will continue into next week. Because of the modified sampling schedule this week, it is inappropriate to compare collection counts from this week to those from previous weeks. Yearling Chinook dominated this week's samples at LEW. This week's daily average collection was 700 per day. Steelhead were the second most abundant species in this week's collections at LEW. This week's daily average collection for steelhead was about 100 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 340 per day, which similar to last week's daily average collection of 310 per day. Of the yearling Chinook that were collected this week, approximately 84% were of known hatchery origin. Steelhead collections decreased this week compared to the previous week. This week's daily average collection for steelhead was 75 per day, whereas that for last week was 150 per day. Of the steelhead that were collected this week, approximately 75% were clipped. Finally, one subyearling Chinook and 48 total 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 25<sup>th</sup>. In addition, increased flows in the Salmon River prevented sampling after repairs were completed last week. Sampling at WTB resumed on May 3<sup>rd</sup> but data from this sample will not be available to the FPC until after this weekly report is completed. Flows in the Salmon River are increasing again and sampling at WTB has been suspended until flows reach safe levels. Current forecasts are indicating that flows in the Salmon River may not decrease to safe levels by the time the sampling season ends at the end of the month.

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 May 1<sup>st</sup>. Due to high debris loads, sampling was suspended for the sample on April 29<sup>th</sup> and the sample from April 30<sup>th</sup> was a reduced sample of only 14 hours. Over the last week of available data (April 25-May 1), a total of 625 yearling Chinook and 2,923 steelhead were collected at the trap. Less than half (32%) of the yearling Chinook collected over this period were clipped. Of the steelhead collected over this period, approximately 71% were clipped.

## Hatchery Releases

FPC has not received preliminary data from some hatcheries as of 05/04/18, 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 211,000 spring Chinook smolts is scheduled to conclude this week in the Tucannon River. In addition, a volitional release of approximately 660,000 sockeye salmon into Redfish Lake Creek began this week and is expected to run through the 11<sup>th</sup>. Finally, two releases of summer steelhead were scheduled for this week in the Tucannon River (50,000), and the East Fork of the Salmon River (56,000), and the volitional release of nearly 1.5 million summer steelhead in the South Fork of the Salmon River was scheduled to end this week.

Over the next two weeks there are no scheduled hatchery releases within the Snake River Zone.

### 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. Over the past week 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. A volitional release of 215,000 spring Chinook into the Methow River was also scheduled to conclude over the past week. Additionally, there were two small releases of about 100 fall Chinook planned for 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 past week. In total, 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.

Over the next two weeks there is one scheduled release of summer Chinook from the Chief Joseph Hatchery of just over 200,000 juveniles.

### 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). Over the past week there were approximately 20,000 fall Chinook released in this zone, one into the Yakima River (13,000), and another directly into the Columbia River above McNary Dam (7,000). Additionally, there was also one release of approximately 1 million coho into the Klickitat River, and a release of 50,000 summer steelhead into the Hood River.

Over the next two weeks approximately 13.5 million fall Chinook smolts are scheduled for release into this zone. Of these, 4.5 million (33%) will be released from Spring Creek NFH, which is located in the Bonneville pool. This release is scheduled to occur on or around May 7<sup>th</sup>. Another 7.9 million (58%) are scheduled to be released from the Priest Rapids Hatchery in the McNary pool. The remaining 1.13 million fish are scheduled to be released at three locations: the Umatilla River (600,000), and two releases into the Yakima River of 500,000 and 32,000 smolts. Additionally, 25,000 summer steelhead are also planned for release into the Deschutes River over the next two weeks.

### Lower Columbia Zone:

The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Three large releases totaling nearly 12.8 million fall Chinook were scheduled to begin this week. Approximately 2.1 million (16%) were planned for release into the Klaskanine River, another 3.7 million (28%) juveniles were scheduled for a volitional release into the Cowlitz River expected to run through the beginning of next month. Another volitional release of 7 million fall Chinook smolts was scheduled to begin this week and run through early July. Further, a volitional release of approximately 250,000 spring Chinook juveniles into the Cathlamet Channel ended this week as well.

Just over 5.6 million coho smolts are scheduled to be released into this zone this week. These coho releases are scheduled to occur throughout this zone, including Big Creek, the Cowlitz, Grays, Washougal,

Klaskanine, and Sandy rivers. Additionally, a number of volitional releases of coho are scheduled to conclude this week as well in the Kalama, Lewis, and Klaskanine Rivers, as well as Tanner Creek below Bonneville dam. There were also 95,000 summer steelhead planned for release over the past week. 30,000 of which were heading to the Elochoman River, and the remaining 65,000 scheduled for release into the Lewis River at the Echo net pens. Finally, 239,000 winter steelhead smolts were scheduled to be released into this zone in the past week. 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.

Over the next two weeks there is one scheduled release of 3.1 million fall Chinook juveniles at Big Creek, just upstream of Astoria. There will also be approximately a million spring Chinook planned for release into this zone on the Klaskanine River (800,000), Tanner Creek (200,000), and a release of 4,000 juveniles into Youngs Bay near the mouth of the Columbia River.

### **Adult Passage**

Adult Passage Adult counts at Bonneville Dam have been updated through 5/3/18. The 2018 adult spring Chinook count at Bonneville Dam of 10,570 is about 2 times greater than the 2017 count of 5,192, while being 14.6% of the 10-year average count of 72,274. The 2018 spring Chinook jack count of 168 has 94 more fish than the 2017 count of 74 and is 7.8% of the 10-year average count of 2,162. At Willamette Falls, 2,553 adult spring Chinook have been counted so far this year. In 2017, 192 adult spring Chinook were counted at Willamette Falls. As of May 3rd, a total of 3,136 adult spring Chinook have been counted at The Dalles Dam and 256 have been counted at McNary Dam. The Dalles Dam 2018 adult spring Chinook count is about 2.9 times greater than the 2017 count, while being 41.1% of the 10-year average count. The 2018 McNary Dam adult spring Chinook count has 9 fewer fish than the 2017 count and is about 1.5% of the 10-year average count. A total of 48 spring chinook have been counted at Lower Granite Dam as of May 3rd.

The 2018 Bonneville Dam adult steelhead count of 2,679 has 204 more fish than the 2017 count of 2,475 and is about 72.4% of the 10-year average count of 3,698. The 2018 Bonneville Dam adult unclipped steelhead count of 1,120 is about 1.3 times the 2017 count of 872 and 85.7% of the 10-year average count

of 1,307. At upriver sites, adult steelhead continue to move through the hydrosystem to reach their tributaries and spawning sites. The majority of these fish overwintered in pools and will complete their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 5 to 55 adults per day last week. This year's Lower Granite steelhead count of 4,448 is about 62% of the 2017 count of 7,179 and 53% of the 10-year average count of 8,387. The 2018 Lower Granite Dam adult unclipped steelhead count of 1,208 is 40.6% of the 2017 count of 2,974 and 35% of the 10-year average count of 3,435. At Willamette Falls, the 2018 count for steelhead was 1,925 as of May 2nd. This year's steelhead count is about 3 times greater than the 2017 count of 630, while being 29.5% of the 10-year average count of 6,515.



## Hatchery Releases Last Two Weeks

Hatchery Release Summary										
From:	4/21/2018		to		05/04/18					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Douglas County PUD	Wells Hatchery	CH0	SU	2018	460,000	05-01-18	05-01-18	Wells Hatchery	Rocky Reach Pool	UCOL
<b>Douglas County PUD Total</b>					<b>460,000</b>					
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	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	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	Springfield Hatchery	SO		2018	662,621	04-30-18	05-11-18	Redfish Lake Creek	Salmon River (ID)	SNAK
<b>Idaho Dept. of Fish and Game Total</b>					<b>4,730,543</b>					
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	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	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 Thornhollow Acclim	Klaskanine 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	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
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>5,845,000</b>					
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
<b>U.S. Fish and Wildlife Service Total</b>					<b>1,477,066</b>					
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
<b>Warm Springs Tribe Total</b>					<b>50,000</b>					
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	Sand Hollow	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	Similkameen River	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
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>17,081,625</b>					

## Hatchery Releases Last Two Weeks

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	102,681	04-15-18	04-30-18	Tanner Creek	Tanner Creek	LCOL
<b>Yakama Tribe Total</b>					<b>1,102,681</b>					
<b>Grand Total</b>					<b>30,746,915</b>					

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

## Hatchery Releases Next Two Weeks

### Hatchery Release Summary

From: 5/5/2018 to 5/18/2018

Agency	Hatchery	Species	Race	MiqYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2018	204,000	05-15-18	05-15-18	Chief Joseph Hatchery	Wells Pool	UCOL
<b>Colville Tribe Total</b>					<b>204,000</b>					
Douglas County PUD	Methow Hatchery	ST	SU	2018	72,700	04-15-18	05-15-18	Methow Hatchery	Methow River	UCOL
<b>Douglas County PUD Total</b>					<b>72,700</b>					
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
<b>Idaho Dept. of Fish and Game Total</b>					<b>1,632,121</b>					
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	Bonneville Hatchery	CO	UN	2018	200,000	05-16-18	05-16-18	Tanner Creek	Tanner Creek	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	CO	UN	2018	4,000	05-12-18	05-12-18	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife	Klaskanine Hatchery	CO	UN	2018	800,000	05-16-18	05-16-18	Klaskanine River	Klaskanine River	LCOL
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2018	10,000	05-05-18	05-05-18	Wychus 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
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>4,129,000</b>					
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
<b>U.S. Fish and Wildlife Service Total</b>					<b>4,500,000</b>					
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2018	600,000	05-16-18	05-16-18	Reith Bridge	Umatilla River	MCOL
<b>Umatilla Tribe Total</b>					<b>600,000</b>					
Washington Dept. of Fish and Wildlife	Beaver Creek Hatchery	ST	WI	2018	120,000	04-01-18	05-18-18	Beaver Creek	Elochoman River	LCOL
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	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	Priest Rapids Hatchery	CH0	FA	2018	7,883,506	05-15-18	06-01-18	Priest Rapids Hatchery	McNary Pool	MCOL
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	Tucannon Hatchery	ST	SU	2018	50,000	04-30-18	05-15-18	Curl Lake Acclim Pond	Tucannon River	SNAK
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>9,798,906</b>					
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2018	218,712	03-15-18	05-15-18	Easton Pond	Yakima River	MCOL
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2018	220,160	03-15-18	05-15-18	Jack Creek Acclim Pond	Yakima River	MCOL
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2018	230,627	03-15-18	05-15-18	Clark Flat Acclim Pond	Yakima River	MCOL
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2018	37,276	05-17-18	05-17-18	Wapatox Sampling	Yakima River	MCOL
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2018	500,000	05-05-18	05-05-18	Prosser Acclim Pond	Yakima River	MCOL
<b>Yakama Tribe Total</b>					<b>1,206,775</b>					
<b>Grand Total</b>					<b>22,143,502</b>					

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

**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
04/20/2018	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
04/27/2018	159.6	0.0	161.5	15.7	172.5	32.9	178.5	23.7	184.9	33.9	200.3	75.1	200.1	80.0
04/28/2018	158.3	2.3	160.5	24.6	169.6	29.8	175.4	34.7	183.9	33.4	197.6	78.7	195.3	85.5
04/29/2018	162.3	3.1	167.2	24.5	184.2	41.4	193.3	43.8	202.5	53.1	217.0	91.5	217.1	117.8
04/30/2018	157.2	0.0	153.4	24.4	170.2	20.3	179.3	20.9	188.0	36.4	196.1	70.2	192.8	77.3
05/01/2018	180.1	0.0	182.3	35.8	198.3	42.5	206.0	49.1	210.0	63.8	223.9	93.0	220.5	101.4
05/02/2018	182.3	0.0	187.9	46.2	202.8	43.8	214.8	56.0	224.3	75.5	235.6	101.9	235.3	120.7
05/03/2018	176.1	0.0	179.9	38.9	198.5	40.0	211.2	49.0	220.6	71.3	232.1	104.0	232.6	100.3

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

Date	Dworshak		Brownlee Inflow	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
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
04/27/2018	7.0	2.3	---	---	95.7	34.0	93.1	26.7	94.9	30.4	100.8	89.6
04/28/2018	7.0	2.3	---	---	105.0	32.2	98.3	29.2	98.2	33.8	107.4	85.0
04/29/2018	7.0	2.4	---	---	115.8	33.3	112.4	40.0	112.9	43.8	118.4	84.9
04/30/2018	7.1	2.5	---	---	118.2	33.2	114.5	42.3	115.7	46.9	121.8	84.9
05/01/2018	4.6	0.0	---	---	110.5	33.3	103.8	36.6	103.9	41.4	112.1	84.7
05/02/2018	4.8	0.0	---	---	91.4	38.5	87.7	27.7	87.5	33.8	92.2	73.8
05/03/2018	4.9	0.0	---	---	98.3	34.7	94.9	30.2	95.1	36.5	103.6	84.9

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2		
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
04/27/2018	295.8	158.4	293.5	96.7	273.6	63.7	296.4	121.1	59.1	103.8
04/28/2018	297.6	145.3	286.6	95.4	265.9	69.1	291.4	120.3	59.0	99.6
04/29/2018	333.9	172.1	336.8	128.1	315.9	122.1	324.7	147.8	59.1	105.4
04/30/2018	337.5	175.0	345.9	126.7	330.0	133.6	346.7	167.7	59.1	107.4
05/01/2018	324.7	162.8	334.6	146.1	315.0	136.7	342.1	164.5	59.1	106.1
05/02/2018	330.4	172.5	336.5	146.7	312.9	158.2	334.9	160.6	59.1	102.8
05/03/2018	341.3	174.9	337.3	135.4	323.9	144.1	342.1	155.1	62.9	111.7

## 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
<b>Lower Granite Dam</b>										
	04/26/18 Chinook + Steelhead	103	0	0	0.00%	0.00%	0	0	0	0
	05/03/18 Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>										
	04/22/18 Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	04/30/18 Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Lower Monumental Dam</b>										
	04/25/18 Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/02/18 Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>McNary Dam</b>										
	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
	04/28/18 Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/30/18 Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>										
	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
	04/28/18 Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/01/18 Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0

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

**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	
04/20									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	24	104.4	105.0	105.3	24	105.2	105.6	105.9	24	104.7	105.0	105.1	24	04/26
04/27									107.4	108.5	109.7	24	106.0	106.7	107.2	24	106.3	106.7	107.0	24	108.1	109.8	110.9	24	04/27
04/28									108.3	109.0	109.8	24	109.0	111.9	114.2	24	106.2	106.7	106.5	24	110.4	110.5	110.7	24	04/28
04/29									108.3	108.9	109.5	24	112.0	113.8	114.5	24	106.0	106.1	106.3	24	110.3	110.5	110.6	24	04/29
04/30									108.1	108.6	109.9	24	106.3	110.0	106.5	24	108.9	111.5	112.1	24	111.0	111.4	111.5	24	04/30
05/01									107.9	108.4	108.7	24	106.5	106.7	107.0	24	110.5	112.5	112.9	24	113.2	114.3	114.9	24	05/01
05/02									108.4	109.0	110.0	24	106.5	106.9	107.2	24	106.5	108.2	107.1	24	114.4	114.7	115.0	24	05/02
05/03									108.8	109.6	111.1	23	106.5	106.9	106.9	23	106.5	106.7	107.1	23	112.9	114.2	114.1	23	05/03

**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	
04/20	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	105.5	24	110.4	111.1	112.6	24	111.4	112.9	113.5	24	115.7	117.5	119.8	21	111.1	111.7	114.2	21	115.2	115.5	117.2	21	04/26
04/27	106.1	106.7	106.8	24	112.2	112.8	113.3	24	112.7	113.4	113.9	24	117.4	119.3	120.5	23	113.1	114.1	116.1	24	116.9	118.1	119.3	21	04/27
04/28	106.2	106.7	106.8	24	112.0	113.0	116.0	24	111.9	113.0	112.4	24	119.0	120.5	122.7	23	112.7	114.1	115.6	24	116.5	118.0	118.5	22	04/28
04/29	106.1	106.1	106.2	24	113.5	114.5	117.2	24	111.8	112.7	113.7	24	119.6	121.0	123.4	24	113.0	114.2	117.3	24	118.2	119.1	120.4	24	04/29
04/30	106.0	106.2	106.8	24	110.2	112.5	112.0	24	113.0	113.8	114.7	24	117.1	120.4	121.3	22	112.6	114.6	114.3	23	116.5	119.3	119.7	21	04/30
05/01	109.9	111.0	111.6	24	115.4	116.4	117.3	24	110.9	113.5	112.2	23	119.5	120.5	121.8	22	113.0	113.3	114.6	23	118.9	120.4	121.6	22	05/01
05/02	109.2	111.2	111.5	24	115.5	116.7	117.1	24	114.7	115.9	116.8	24	122.3	122.7	124.3	21	115.1	116.6	117.2	22	121.2	121.9	122.3	20	05/02
05/03	108.3	109.0	108.9	19	114.8	115.6	116.3	19	115.4	116.5	116.9	23	122.1	122.9	123.7	22	116.7	117.0	117.5	22	121.5	122.0	123.2	20	05/03

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

**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
04/20	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
04/27	114.1	115.2	117.3	24	117.1	119.7	122.8	24	114.7	115.5	116.5	24	117.5	117.8	118.2	24					04/27
04/28	112.4	114.5	113.7	24	117.2	121.0	123.1	24	115.9	117.6	119.5	24	117.5	117.7	118.4	24					04/28
04/29	112.4	113.1	113.0	24	119.0	120.5	121.3	24	116.6	117.9	119.8	24	118.7	119.0	119.3	24					04/29
04/30	113.2	113.9	114.6	24	116.1	119.2	122.0	24	116.1	118.6	119.3	24	117.6	119.1	119.0	24					04/30
05/01	115.0	116.2	117.0	24	119.5	121.0	123.3	24	116.4	118.1	120.2	24	118.3	119.6	120.2	24					05/01
05/02	115.1	116.5	117.2	24	120.8	122.2	123.9	24	119.7	121.9	123.8	24	120.1	120.8	121.8	24					05/02
05/03	117.4	118.7	119.9	24	121.9	122.6	123.7	24	120.7	122.0	122.7	24	120.8	121.6	122.0	24					05/03

**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
04/20	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	24	103.4	104.2	104.9	24	104.9	105.8	106.4	24	103.2	104.7	105.9	24	106.3	106.8	107.3	24	116.6	116.8	117.1	24	04/26
04/27	108.0	108.5	109.2	24	103.6	104.3	105.1	24	105.0	105.8	106.7	24	103.4	104.6	105.8	24	106.8	107.2	107.6	24	116.1	116.8	117.3	24	04/27
04/28	107.5	108.3	108.1	24	102.3	104.4	103.5	24	103.4	105.4	104.4	24	101.7	104.2	102.2	24	105.6	106.9	106.0	24	115.0	115.6	115.6	24	04/28
04/29	107.4	107.7	108.3	24	102.4	102.6	102.9	24	104.0	104.5	104.9	24	102.2	102.8	103.2	24	104.0	105.4	104.8	24	115.3	115.5	115.8	24	04/29
04/30	107.2	107.6	108.0	24	102.4	102.8	103.1	24	104.7	105.4	106.0	24	102.3	102.9	103.4	24	103.1	103.5	104.1	24	115.0	115.4	115.4	24	04/30
05/01	100.3	107.3	106.7	24	101.5	102.9	102.7	24	104.6	105.3	105.7	24	102.1	102.8	103.3	24	104.0	104.2	104.3	24	115.1	115.3	115.5	24	05/01
05/02	99.6	100.1	100.9	24	101.3	102.0	102.5	24	104.6	105.4	106.1	24	102.0	103.2	104.4	24	104.5	104.7	104.8	24	116.5	117.5	120.0	24	05/02
05/03	99.8	100.5	101.1	23	101.3	102.2	102.9	23	104.3	105.2	105.9	23	102.1	103.3	104.3	23	104.4	104.6	104.8	23	115.7	117.0	116.4	23	05/03

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 5/4/2018 7:15:10 AM

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**Total Dissolved Gas Data at Lower Snake Sites**

Date	Little Goose				L. Goose Tlwr				Lower Mon.				Lwr. Mon. Tlwr				Ice Harbor				Tlwtr Ice Harbor				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
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	119.0	119.4	119.9	24	115.9	116.2	116.4	24	118.1	118.3	118.5	24	115.2	115.8	116.1	24	117.7	118.1	118.8	24	118.3	118.9	119.8	24	04/26
04/27	119.6	120.1	121.1	24	115.8	116.5	117.3	24	118.7	119.0	119.5	24	115.5	115.7	116.1	24	118.7	119.0	119.4	24	119.3	120.2	120.8	24	04/27
04/28	115.4	119.5	117.1	24	115.6	116.2	116.4	24	116.1	118.7	117.7	24	115.9	116.9	118.1	24	115.5	118.6	117.2	24	118.3	118.9	119.2	24	04/28
04/29	112.7	114.9	113.9	24	116.8	117.0	117.4	24	114.3	115.6	115.3	24	118.3	118.8	119.5	24	113.3	115.0	114.4	24	118.6	119.0	119.2	24	04/29
04/30	110.8	112.3	111.6	24	117.2	117.5	118.6	24	115.3	115.6	116.1	24	118.7	118.7	121.3	24	114.6	115.1	115.5	24	118.6	118.8	119.3	24	04/30
05/01	110.4	110.9	111.4	24	115.9	117.4	119.8	24	116.4	116.6	117.0	24	117.5	118.6	119.6	24	115.6	116.1	116.5	24	118.3	118.6	119.1	24	05/01
05/02	110.4	111.0	112.3	24	114.5	115.3	117.0	24	115.8	116.5	117.4	24	115.8	117.0	119.5	24	116.1	116.3	116.8	24	117.0	118.0	118.9	24	05/02
05/03	111.3	111.9	112.7	23	114.7	115.0	115.2	23	115.7	117.0	118.4	23	116.3	117.2	117.9	23	116.4	116.7	117.0	23	117.8	118.1	119.0	23	05/03

**Total Dissolved Gas Data at Mid-Columbia Sites**

Date	McNary-Wash.				Tlwtr McNary				John Day				Tlwtr John Day				The Dalles				Dnstr T. Dalles				Date
	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	
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	116.3	117.4	24	119.4	120.3	120.6	24	120.1	120.9	121.4	24	118.1	118.3	118.6	24	117.4	118.2	118.8	24	117.0	117.4	117.9	24	04/26
04/27	116.1	116.6	117.7	24	119.0	119.4	119.8	24	121.1	121.4	121.8	24	117.2	117.9	118.1	24	116.6	118.7	118.8	24	116.4	117.7	117.9	24	04/27
04/28	112.9	116.4	114.8	24	118.2	119.0	119.3	24	118.1	120.6	119.5	24	116.4	117.0	118.6	24	113.6	114.8	114.2	24	114.4	115.2	115.4	24	04/28
04/29	110.3	112.3	111.5	24	118.3	118.4	118.8	24	114.6	117.5	116.5	24	118.9	119.4	120.0	24	113.7	114.0	114.1	24	117.2	119.6	120.9	24	04/29
04/30	112.2	113.0	113.6	24	119.3	119.4	119.7	24	110.6	113.6	112.6	24	118.9	119.4	119.5	24	112.1	113.3	112.8	24	116.8	119.5	118.7	24	04/30
05/01	113.3	114.1	115.0	24	118.7	119.4	119.6	24	108.7	109.6	109.0	24	119.4	120.1	120.3	24	111.5	111.7	113.2	24	117.0	118.0	118.8	24	05/01
05/02	114.2	114.7	115.3	24	118.8	119.0	119.4	24	110.3	111.3	111.8	24	119.0	120.1	120.2	24	114.1	115.2	115.6	24	122.0	123.2	124.1	24	05/02
05/03	114.5	115.0	115.8	23	119.0	119.3	119.7	23	112.7	113.5	113.8	23	118.7	119.0	119.1	23	114.4	115.3	115.5	23	120.6	123.2	122.7	23	05/03



FISH PASSAGE CENTER

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

[INTERNAL PURPOSES ONLY]

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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	
04/20	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	24	118.4	118.9	118.9	24	116.6	118.7	118.0	24	119.9	120.4	121.4	24	04/26
04/27	116.1	117.7	118.0	24	117.6	118.6	118.4	24	116.0	117.0	116.3	24	119.7	120.7	120.2	24	04/27
04/28	112.6	114.3	113.0	24	115.8	116.9	116.2	24	115.3	116.0	115.9	24	119.2	119.6	119.4	24	04/28
04/29	112.4	112.7	112.7	24	116.9	117.5	117.8	24	114.4	115.3	115.6	24	121.6	122.3	122.6	24	04/29
04/30	114.3	115.8	117.0	24	118.8	119.9	120.9	24	115.7	116.6	117.0	24	122.6	123.1	123.4	24	04/30
05/01	114.6	116.0	115.5	24	119.1	120.4	120.8	24	117.6	118.0	118.2	24	122.7	123.3	123.2	24	05/01
05/02	115.9	117.4	118.4	24	119.5	120.1	120.3	24	117.8	118.8	119.4	24	122.8	122.9	123.1	24	05/02
05/03	120.8	121.6	121.7	23	121.5	122.1	122.8	23	119.2	120.7	121.4	23	123.4	123.8	124.1	23	05/03

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)
04/20/2018	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	89	191	896	28,437	64,275	54,328	359	28,267		38,477
04/26/2018		107	997	891	31,936	58,505	40,756	420		36,611	30,235
04/27/2018		152	231	787	44,315	49,580	27,930	615	30,854		41,237
04/28/2018		146	208	398	83,832	54,203	62,717	949		63,473	43,037
04/29/2018			488	1,001	146,351	73,678	68,980	1,106	39,317		49,933
04/30/2018		67	822	2,432	185,445	75,647	92,299	1,077		91,136	63,837
05/01/2018		64	267	353	269,917	72,784	115,769	1,753	90,264		56,636
05/02/2018			122	33	262,100	79,683	64,840	2,748		66,794	47,795
05/03/2018			247	20	189,137	71,607	57,513	2,545	118,684		53,399
05/04/2018											
<b>Total:</b>	<b>3,025</b>	<b>1,114</b>	<b>4,543</b>	<b>8,044</b>	<b>1,455,901</b>	<b>821,354</b>	<b>754,993</b>	<b>13,731</b>	<b>359,074</b>	<b>376,397</b>	<b>549,597</b>
<b># Days:</b>	<b>4</b>	<b>11</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>7</b>	<b>7</b>	<b>14</b>
<b>Average:</b>	<b>756</b>	<b>101</b>	<b>325</b>	<b>575</b>	<b>103,993</b>	<b>68,446</b>	<b>58,076</b>	<b>981</b>	<b>51,296</b>	<b>53,771</b>	<b>39,257</b>
<b>YTD:</b>	<b>23,914</b>	<b>40,256</b>	<b>18,919</b>	<b>11,428</b>	<b>2,464,477</b>	<b>1,160,376</b>	<b>986,120</b>	<b>14,802</b>	<b>435,294</b>	<b>480,027</b>	<b>904,728</b>

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)
04/20/2018	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	0	20	532		1,195
04/26/2018		0	0	2	0	0	0	10		0	1,277
04/27/2018		0	0	1	0	0	0	20	488		1,298
04/28/2018		0	0	3	0	0	0	37		296	2,336
04/29/2018			0	11	285	0	0	21	1,583		86
04/30/2018		0	0	11	0	0	0	15		0	1,535
05/01/2018		0	1	11	838	0	0	17	919		1,273
05/02/2018			0	5	293	0	0	48		0	1,258
05/03/2018			0	1	1,043	0	0	47	1,702		428
05/04/2018											
Total:	0	0	2	45	2,842	0	0	395	7,365	296	18,326
# Days:	4	11	14	14	14	12	13	14	7	7	14
Average:	0	0	0	3	203	0	0	28	1,052	42	1,309
YTD:	0	0	3	81	23,527	1,156	0	836	8,343	585	873,779

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)
04/20/2018	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	0	1	78	347	0	0	21	6,567		4,127
04/26/2018		0	1	45	165	290	0	10		336	3,392
04/27/2018		0	0	94	627	560	0	17	4,817		9,084
04/28/2018		0	0	70	305	564	592	98		1,480	7,794
04/29/2018			6	127	1,424	1,172	322	62	9,695		9,052
04/30/2018		0	17	155	1,955	1,898	2,695	66		2,068	10,742
05/01/2018		0	9	109	6,147	4,924	1,358	157	4,695		18,136
05/02/2018			6	2	9,382	5,203	317	208		2,662	17,227
05/03/2018			10	4	13,559	3,279	0	333	4,679		17,657
05/04/2018											
Total:	0	0	54	767	35,039	18,526	5,284	1,078	36,947	8,725	118,187
# Days:	4	11	14	14	14	12	13	14	7	7	14
Average:	0	0	4	55	2,503	1,544	406	77	5,278	1,246	8,442
YTD:	0	0	118	1,213	40,983	18,835	5,440	1,444	39,453	9,623	191,301

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)
04/20/2018	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	158	518	514	32,945	60,678	68,752	172	11,845		10,103
04/26/2018		217	138	139	46,826	46,909	58,489	179		31,573	10,964
04/27/2018		412	7	80	77,506	80,583	58,562	156	10,793		10,093
04/28/2018		1,261	9	111	108,524	108,067	68,633	251		33,438	8,962
04/29/2018			59	130	97,377	76,480	88,965	500	13,905		18,393
04/30/2018		505	78	262	132,661	83,564	94,657	388		49,306	15,652
05/01/2018		370	34	150	151,724	117,232	101,510	485	19,553		11,773
05/02/2018			37	10	124,014	122,666	133,093	946		49,762	10,620
05/03/2018			299	14	103,608	97,361	55,158	907	17,016		10,001
05/04/2018											
Total:	212	3,735	1,576	2,444	1,103,630	1,017,037	949,730	4,523	101,962	273,270	156,460
# Days:	4	11	14	14	14	12	13	14	7	7	14
Average:	53	340	113	175	78,831	84,753	73,056	323	14,566	39,039	11,176
YTD:	744	16,235	1,977	4,489	2,214,351	1,787,860	1,225,815	4,616	150,520	320,409	177,045

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)
04/20/2018	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	0	347	900	314	104	1,242		171
04/26/2018		0	0	0	331	589	311	52		840	493
04/27/2018		0	0	0	627	292	601	96	7,500		0
04/28/2018		0	0	0	305	3	592	624		444	372
04/29/2018			0	0	854	321	645	2,250	29,875		1,759
04/30/2018		0	0	0	838	348	337	2,590		7,316	921
05/01/2018		0	0	0	279	17	339	3,287	30,108		1,909
05/02/2018			0	0	0	28	952	1,975		12,240	2,076
05/03/2018			0	0	695	351	0	6,122	25,098		5,744
05/04/2018											
Total:	0	0	0	0	6,024	5,423	4,802	19,833	95,026	22,164	15,215
# Days:	0	0	0	0	430	452	369	1,417	13,575	3,166	1,087
Average:	0	0	0	0	430	452	369	1,417	13,575	3,166	1,087
YTD:	0	0	0	0	13,908	14,792	7,073	27,665	97,068	22,586	15,932

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

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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)
04/20/2018	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	0	1	50		0
04/26/2018		0	0	0	0	0	0	0		200	50
04/27/2018		0	0	0	0	0	200	2	150		0
04/28/2018		0	0	0	0	0	400	1		300	0
04/29/2018			0	0	0	0	200	2	100		0
04/30/2018		0	0	0	0	0	0	3		300	100
05/01/2018		0	0	0	2	200	0	2	350		0
05/02/2018			0	0	4	0	0	10		0	133
05/03/2018			0	0	5	0	0	16	0		200
05/04/2018											
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>800</b>	<b>800</b>	<b>48</b>	<b>6,030</b>	<b>1,550</b>	<b>783</b>
<b># Days:</b>	<b>4</b>	<b>11</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>12</b>	<b>13</b>	<b>15</b>	<b>7</b>	<b>9</b>	<b>15</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>67</b>	<b>62</b>	<b>3</b>	<b>861</b>	<b>172</b>	<b>52</b>
<b>YTD:</b>		<b>1</b>	<b>3</b>		<b>14</b>	<b>5,034</b>	<b>800</b>	<b>60</b>	<b>7,902</b>	<b>36,400</b>	<b>6,471</b>

- 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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FISH PASSAGE CENTER

## 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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

**Important Information About this Report:**

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



FISH PASSAGE CENTER

## Two Week Transportation Summary Report

### 4/20/2018 12:00:00 AM TO 5/4/2018 12:00:00 AM

Date 5/4/2018 7:18:10 AM

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#### Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	1,800	947,687	22,500	3,700	703,320	2,382,327
Sum of Number Barged	1,592	861,936	22,241	2,954	600,479	2,089,681
Sum of Number Bypassed	208	85,426	255	710	102,791	292,181
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	20	0	0	10	40
Sum of Facility Morts	0	304	4	36	38	420
Sum of Reseach Morts	0	1	0	0	2	5
Sum of Total Project Mort	0	325	4	36	50	465

#### Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	0	542,049	12,214	3,536	674,181	1,906,161
Sum of Number Barged	0	455,677	11,997	2,386	575,358	1,620,776
Sum of Number Bypassed	0	84,850	200	1,000	98,650	283,350
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	10	0	0	4	18
Sum of Facility Morts	0	1,512	17	150	169	2,017
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	1,522	17	150	173	2,035

FISH PASSAGE CENTER

## Two Week Transportation Summary Report 4/20/2018 12:00:00 AM TO 5/4/2018 12:00:00 AM

Date 5/4/2018 7:18:10 AM

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### Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	0	459,550	3,200	3,000	581,750	1,629,250
Sum of Number Barged	0	401,155	3,200	2,796	503,440	1,414,031
Sum of Number Bypassed	0	58,250	0	200	78,250	214,950
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	4	0	0	3	10
Sum of Facility Morts	0	141	0	4	57	259
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	145	0	4	60	269

### Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	1,800	1,949,286	37,914	10,236	1,959,251	5,917,738
Sum of Number Barged	1,592	1,718,768	37,438	8,136	1,679,277	5,124,488
Sum of Number Bypassed	208	228,526	455	1,910	279,691	790,481
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	34	0	0	17	68
Sum of Facility Morts	0	1,957	21	190	264	2,696
Sum of Reseach Morts	0	1	0	0	2	5
Sum of Total Project Mort	0	1,992	21	190	283	2,769

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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	13600	1495237	25900	7520	1320535	4183327
Sum of Number Barged	1990	889886	22357	3020	631860	2180973
Sum of Number Bypassed	11604	604982	3539	4464	688593	2001775
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	6	38	0	0	26	96
Sum of Facility Morts	0	330	4	36	53	476
Sum of Reseach Morts	0	1	0	0	3	7
Sum of Total Project Mort	6	369	4	36	82	579

### Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	800	763460	12421	10283	1187200	3161364
Sum of Number Barged	0	455677	11997	2386	575358	1620776
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	18	0	6	7	38
Sum of Facility Morts	0	1559	17	175	176	2103
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	1577	17	181	183	2141

FISH PASSAGE CENTER

## YTD Transportation Summary Report

Date 5/4/2018 7:17:47 AM

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### Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	0	600733	3300	4400	755667	2119767
Sum of Number Barged	0	401155	3200	2796	503440	1414031
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	4	0	2	3	12
Sum of Facility Morts	0	141	0	4	57	259
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	145	0	6	60	271

### Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	14400	2859430	41621	22203	3263402	9464458
Sum of Number Barged	1990	1746718	37554	8202	1710658	5215780
Sum of Number Bypassed	12404	1110621	4046	13778	1552419	4245687
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	6	60	0	8	36	146
Sum of Facility Morts	0	2030	21	215	286	2838
Sum of Reseach Morts	0	1	0	0	3	7
Sum of Total Project Mort	6	2091	21	223	325	2991

**Cumulative Adult Passage at Mainstem Dams Through: 05/03**

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	05/03	10570	168	5192	74	72274	2162	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/03	3136	60	1071	25	43371	1002	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/03	1805	74	644	20	32349	804	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/02	256	1	265	6	17087	268	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/03	159	5	171	2	12006	144	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/03	122	4	163	2	9140	109	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/03	79	2	76	5	6524	131	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/03	48	2	63	0	4866	57	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/02	25	0	13	0	2032	4	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/02	15	0	6	0	1698	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/02	6	0	1	0	1088	2	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/02	3	0	0	0	263	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/02	2	0	0	0	68	1	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/02	2553	192	28	0	6215	108	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		Unclipped		10-Yr		10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.	2018	2017	Avg.	2018	2017
BON	05/03	1	-1	0	0	0	0	0	0	0	2679	2475	3698	1120	872	1307	0	0	3		
TDA	05/03	4	0	0	0	0	0	0	0	0	140	1428	1938	44	488	881	-2	0	0		
JDA	05/03	0	0	0	0	0	1	0	0	0	351	492	3766	160	315	1693	0	0	5		
MCN	05/02	-2	0	0	0	1	0	0	0	0	370	2520	4000	172	747	1621	17	0	2		
IHR	05/03	-1	0	0	0	0	0	0	0	0	1244	1004	4028	412	469	1445	4	0	0		
LMN	05/03	0	0	0	0	0	0	0	0	0	1149	1354	7885	294	645	2657	1	0	0		
LGS	05/03	0	0	0	0	0	0	0	0	0	1139	1367	4708	295	614	2366	0	0	0		
LGR	05/03	0	0	0	0	0	0	0	0	0	4448	7179	8387	1208	2974	3435	0	0	0		
PRD	05/02	0	0	0	0	0	0	0	0	0	22	16	31	0	0	0	0	0	0		
WAN	05/02	0	0	0	0	0	0	0	0	0	31	17	71	0	0	0	0	0	0		
RIS	05/02	0	0	0	0	0	0	0	0	0	51	39	79	15	12	44	0	0	0		
RRH	05/02	0	0	0	0	0	0	0	0	0	65	93	226	22	16	150	0	0	0		
WEL	05/02	0	0	0	0	0	0	0	0	0	33	4	10	12	2	6	0	0	0		
WFA	05/02	0	2	117	117	0	0	0	0	0	1925	630	6515	1405	587	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.

