



Fish Passage Center

Weekly Report #18-10

May 11, 2018

This Week's Highlights

Water Supply

Precipitation throughout the Columbia Basin has varied between 24% and 90% of average at individual sub-basins over May. Precipitation above The Dalles has been 57% of average over May. Over the 2018 water year, precipitation has ranged between 92% 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 1-10, 2018		Water Year 2018 October 1, 2017 to May 10, 2018	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	0.78	79	28.5
Snake River Above Ice Harbor	0.26	34	15.5	92
Columbia Above The Dalles	0.44	57	19.9	99
Kootenai	0.61	62	28.1	107
Clark Fork	0.85	86	20.9	112
Flathead	1.00	90	29.3	119
Pend Oreille River Basin above Waneta Dam	0.89	87	25.6	112
Salmon River Basin	0.37	39	20.2	97
Upper Snake Tributaries	0.23	24	18.3	97
Clearwater	0.95	75	35.3	115
Willamette River above Portland	0.37	28	52.3	93

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 131% of average, for Snake River Basins the average snowpack is 60% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 72% of average.

Table 2 displays the May 10th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 10th ESP forecast at The Dalles between April and August is 110,850 Kaf (127% of average).

Table 2. May 10 ESP Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Location	May 10, 2018 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	127	110,850
Grand Coulee (Apr-Aug)	131	74,103
Libby Res. Inflow, MT (Apr-Aug)	132 125**	9,762 7,556**
Hungry Horse Res. Inflow, MT (Apr-Aug)	158	3,052
Lower Granite Res. Inflow (Apr- July)	117	23,184
Brownlee Res. Inflow (Apr-July)	108	5,912
Dworshak Res. Inflow (Apr-July)	123 124**	2,978 3,032**

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1230.4 feet (5-10-18) and has refilled 8.6 feet over the last week. Outflows at Grand Coulee have ranged between 179.8 Kcfs and 199.5 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2384.5 feet (5-10-18) and has refilled 16.1 feet over the past week. Daily average outflows at Libby Dam have been 7.8-9.8 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3498.7 feet (5-10-18) and has refilled 17.1 feet last week. Outflows

at Hungry Horse have been 2.3-5.8 Kcfs over the last week.

Dworshak is currently at an elevation of 1521.6 feet (5-10-18) and continues to refill, filling 22.8 feet over last week. Dworshak outflows have been 2.4-4.8 Kcfs.

The Brownlee Reservoir was at an elevation of 2042.0 feet on May 10th, 2018 and has refilled 12.0 feet. Outflows at Hells Canyon have ranged between 13.4 and 27.0 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 4th, 2018), the flow objective this spring is 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 125.5 Kcfs last week; over the spring season have averaged 101.0 Kcfs.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives is 260 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam (both began April 10th). Flows at McNary averaged 386.7 Kcfs last week at McNary and 312.7 Kcfs over the spring season. Flows averaged 263.8 Kcfs at Priest Rapids last week and 196.4 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 90.1 to 158.1 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 323.4 to 427.7 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 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 (5/4-5/10)
Lower Granite	Gas Cap/Gas Cap	31-35 Kcfs
Little Goose	Gas Cap/Gas Cap	26-30 Kcfs
Lower Monumental	Gas Cap/Gas Cap	29-31 Kcfs
Ice Harbor	Gas Cap/Gas Cap	80-85 Kcfs
McNary	Gas Cap/Gas Cap	145 Kcfs
John Day	Gas Cap/Gas Cap	90 Kcfs
The Dalles	Gas Cap/Gas Cap	90 Kcfs
Bonneville	Gas Cap/Gas Cap	121 Kcfs

The estimated 115%/120% spill cap for Lower Granite Dam (LGR) started at 35 Kcfs on the afternoon of Thursday, April 26th, was decreased to 34 Kcfs on Sunday, May 6th, and to 31 Kcfs on May 7th. Spill volumes at LGR have exceeded the estimated 115%/120% spill caps since May 6th due to involuntary spill. Total dissolved gas (TDG) exceeded the 120% waiver limit in the LGR tailrace on May 10th and the LGS forebay on May 6th and 7th. The estimated spill cap for LGS was reduced from 31 Kcfs to 29 Kcfs on May 6th. Spill at LGS has exceeded the spill cap for the last four days due to high flows and limited hydraulic capacity at LGS. Total dissolved gas has exceeded the 120% waiver limit in the LGS tailrace on May 7th, 9th, and 10th, and the 115% waiver in the Lower Monumental (LMN) forebay every day of the last week. The estimated spill caps for LMN started at 31 Kcfs on the afternoon of May 4th but was reduced to 29 Kcfs on May 6th 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 has exceeded the 120% waiver each day since May 7th and the 115% waiver limit in the Ice Harbor (IHR) forebay every day of the last week. The 12-hour average TDG levels in the IHR forebay exceeded the LMN tailrace for several days of the last week. The estimated spill cap at IHR started out as 85 Kcfs on May 4th and was reduced to 80 Kcfs on May 7th, where it has remained since. Spill volumes this week have exceeded the estimated cap since May 7th. Total dissolved gas has

exceeded the 120% waiver limit in the IHR tailrace since May 7th, and the McNary (MCN) forebay every day of the last week.

Spring spill volumes at the Mid-Columbia projects have exceeded their respective spill caps on all days of the last week. Spill in excess of the caps is due to increased flows and limited hydraulic capacity. The estimated spill cap for McNary Dam (MCN) was 145 Kcfs for the last week. The 120% waiver limit in the MCN tailrace has been exceeded since May 6th, and the 115% waiver in the John Day (JDA) forebay was exceeded every day of the last week except May 4th. The estimated spill cap at JDA was 90 Kcfs every day of the last week. Both the 120% waiver limit for the JDA tailrace and the 115% waiver for The Dalles (TDA) forebay have been exceeded since May 5th. The estimated spill cap for The Dalles Dam has been 90 Kcfs for the past week. The 120% waiver limit for the TDA tailrace has been exceeded every day since May 6th. The 115% waiver limit for the Bonneville (BON) forebay was exceeded every day of the last week. Finally, the estimated spill caps for BON have been 121 Kcfs all week. The 120% TDG waiver limit at the Cascade Island monitor was exceeded every day of the last week. Recent exceedences at Cascade Island are likely due to the uncontrolled spill at BON.

Spill at Dworshak Dam was terminated on May 1st. 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 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 three of the seven GBT samples conducted this week (May 4-May 10). No signs of GBT were observed at Lower Granite, Lower Monumental, or Bonneville dams this week. Little Goose observed one fish (1.0%) with rank 1 signs of GBT in their sample on May 7th. McNary Dam observed one fish (1.0%) with rank 1 signs of GBT in their sample on May 10th. Rock Island observed three fish (3.0%) with rank 1 signs of GBT in their sample on May 7th. 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 McNary are close to the current 10-year average. Temperatures at Bonneville have increased slightly above the 10-year average over the last week. Temperatures at Ice Harbor and Lower Granite have been above the 10-year average, but this week dropped down to the close to the 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 25th due to equipment malfunctions and high flows.

Yearling Chinook continued to dominate the samples at Bonneville Dam (BON) this week except for the spike in subyearling Chinook passage May 8 and 9 associated with the Spring Creek Hatchery release. This week's daily average passage index for yearling

Chinook was about 45,000 per day, which is a decrease compared to last week's daily average passage index of about 65,000 per day. Coho and steelhead passage also decreased this week, when compared to last week. This week's daily average passage indices for these two species were 12,000 and 7,000 per day, respectively. Last week's daily average passage indices were 18,000 for coho and 11,000 for steelhead. Sockeye passage increased rapidly this week with the average passage index increasing from 2,700 per day last week, to nearly 17,000 per day this week. Subyearling Chinook passage index increased to 174,000 on May 8, when the peak passage of fall Chinook released from Spring Creek NFH passed the project. The index decreased to 19,000 by May 10. Last week the average index was about 1,450 for subyearling Chinook. Pacific lamprey macrophthalmia were encountered in one 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 85,000, which is a decrease compared to last week's daily average passage index of 96,000. Coho and steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage indices for these two species were 2,500 and 42,000 per day, respectively. Last week's daily average passage indices were 3,000 for coho and 44,000 for steelhead. Sockeye passage indices averaged 29,000 per day this week compared to only 11,000 per day last week. Subyearling Chinook fry were encountered in three of this week's samples (April 28th). The Pacific lamprey macrophthalmia were encountered in three of this week's four samples while ammocoetes were not encountered in any.

Similar to John Day, sampling at McNary (MCN) is every-other-day. Sockeye and yearling Chinook dominated the samples at MCN this week. Sockeye were the most abundant species in this week's samples. This week's daily average passage index for sockeye was 165,000 per day, which is a substantial increase over last week's daily average passage index of 23,000 per day. This week's daily average passage index for yearling Chinook was nearly 143,000 per day. This is a large increase over last week's daily average passage index of about 70,000 per day. Subyearling Chinook

and coho passage also increased this week, when compared to the previous week. This week's daily average passage indices for these two species were nearly 10,000 and 17,000 per day. Last week's daily average passage indices were 1,200 for subyearling Chinook and 6,000 for coho. As with previous weeks, nearly all of the subyearling Chinook that were encountered this week were fry. Only 1 non-fry subyearling was sampled; and that was on the last sample date of May 9. Steelhead daily passage indices decreased this week. Daily average passage indices for steelhead dropped from 15,000 per day last week to about 13,500 per day this week. Finally, Pacific lamprey macrophthalmia were encountered in all of this week's samples while no ammocoetes were encountered. This week's daily average collection for Pacific lamprey macrophthalmia was about 1,100 per day, which is a large increase compared to last week's daily average collection of about 200 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 188,000 per day, which is a small increase over last week's daily average passage index of nearly 169,000 per day. Of the yearling Chinook collected this week, approximately 91% were of hatchery origin (i.e., clipped or CWT). Steelhead passage decreased this week, when compared to last week. This week's daily average passage index for steelhead was 100,000 per day, whereas that for last week was 113,600 per day. Approximately 89% 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 800, 11,400, and 900 per day, respectively. Last week's daily average passage indices were 500 for sockeye, 4,800 for coho, and 350 for subyearling Chinook. A few of the sockeye collected this week were clipped, indicated they are hatchery origin fish from releases in the Salmon River. Prior to this week, most of the sockeye were likely kokanee from Dworshak reservoir, as spill from Dworshak Dam occurred from January through April 30th. Nearly all of the subyearling Chinook encountered in this week's samples were fry. Pacific lamprey macrophthalmia were encountered in all of this week's samples. And lamprey ammocoetes were encountered in two samples this week (May 9 and 10). The Fish Passage Center has continued to notice some delay occurring in PIT-tagged

juvenile salmon passage through the bypass at Lower Granite Dam. It is similar to delay seen at Little Goose and Lower Monumental dams, and is likely due to fish holding in the separator at these projects.

Similar to recent years, sampling at Little Goose Dam (LGS) was every-other-day until the start of transportation (April 23rd), at which time sampling changed to every day. Yearling Chinook dominated this week's samples at LGS. This week's daily average passage index was nearly 115,000 per day, which is an increase over last week's daily average passage index of 75,000 per day. Passage of coho also increased this week, when compared to the previous week. This week's daily average passage index was 7,500 per day, whereas that for last week was about 3,300 per day. Steelhead passage this week was lower than last week. This week's daily average passage index for steelhead at LGS was 76,000 per day. Sockeye passage increased this week, when compared to the previous week. This week's daily average passage index was 400 per day, whereas that for last week was about 200 per day. Similar to Lower Granite, most of the sockeye encountered this week were likely kokanee from Dworshak reservoir. A few subyearling Chinook fry were encountered in this week's samples. Pacific lamprey macrophthalmia were encountered in all but one of this week's samples while ammocoetes were encountered only on May 6 this week.

Sampling at Lower Monumental Dam (LMN) was every-third-day through April 14th, transitioned to every-other-day through April 23rd, and then transitioned to every day with the start of transportation. This week's samples at LMN were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was 89,000 per day, which is an increase over last week's daily average passage index of approximately 77,000 per day. Steelhead passage decreased this week when compared to last week. This week's daily average passage index for steelhead was 52,000 per day, whereas that for last week was about 90,000 per day. Sockeye and coho passage indices have been relatively low over the past two weeks. This week's daily average passage indices were 100 for sockeye and 1,800 for coho. Similar to Lower Granite and Little Goose, most of the sockeye encountered this week were likely kokanee from Dworshak reservoir. Subyearling Chinook began showing in a few samples this week. But numbers are

still quite low. Finally, Pacific lamprey macrophthalmia were encountered in five of this week's samples (May 6 to May 10) but no ammocoetes were encountered.

Sockeye dominated this week's samples at Rock Island Dam (RIS). This week's daily average passage index was 3,800 per day, which is a large increase from last week's daily average passage index of 2,000 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 2,300, 980, and 630 per day, respectively. Last week's daily average passage indices were 1,300 for yearling Chinook, 450 for steelhead, and 110 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 samples on May 6 and May 8. The daily average collection for Pacific lamprey macrophthalmia for this week was 15 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 1st 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 180 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 115 per day. Sockeye were collected in low numbers beginning on May 7. 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 230 per day, which lower than last week's daily average collection of 340 per day. Of the yearling Chinook that were collected this week, approximately 68% were of known hatchery origin. Steelhead collections increased this week compared to the previous week. This week's daily average collection for steelhead was 166 per day, whereas that for last week was 75 per day. Of the steelhead that were collected this week, approximately 69% were clipped. Finally, one subyearling Chinook and 370 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 25th. In addition, increased flows in the Salmon River prevented sampling after repairs were completed last week. Sampling at WTB resumed on May 3rd 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 8. Due to high debris loads, sampling was suspended for the sample on April 29th and the sample from April 30th was a reduced sample of only 14 hours. Over the last week of available data (May 2 to May 8), a total of 318 yearling Chinook and 3,590 steelhead were collected at the trap. Less than half (26%) of the yearling Chinook collected over this period were unclipped. Of the steelhead collected over this period, approximately 34% were unclipped.

Hatchery Releases

FPC has not received preliminary data from some hatcheries as of 05/11/18, 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. Over the past week there was one release scheduled of 662,000 sockeye smolts into Redfish Lake from the Springfield Hatchery. Additionally, a release of nearly a million summer Chinook smolts wrapped up this week on the South Fork of the Salmon River.

Over the next two weeks there are nearly 2.5 million fall Chinook subyearlings scheduled for release into this zone. Approximately 78% of those are scheduled for release into the Snake River below Hells Canyon Dam (1,000,000), and at Captain Johns acclimation pond (534,000), and Pittsburg Landing acclimation pond (400,000). The rest are being released into Big Canyon, on the Middle Fork Clearwater River.

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. There were no scheduled releases into this zone over the past week.

Over the next two weeks there is one scheduled release of 200,000 summer Chinook into the Methow River on May 15th.

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 two fall Chinook releases planned for this zone. The first, on the 7th, was the Spring Creek Hatchery release of nearly 4.5 million Tule subyearlings, while on the 5th a release of 500,000 was scheduled for the Prosser acclimation pond on the Yakima River. There were also two releases of summer Chinook into the Crooked River (15,000), and Wychus Creek (10,000) this week.

In the next two weeks over 10.8 million fall Chinook are scheduled for release into the Middle

Columbia Zone. Of these, approximately 78% are planned for release at the Priest Rapids Hatchery, with the rest split between the Yakima River (16%) and the Umatilla River (6%).

Lower Columbia Zone:

The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. There was only one scheduled release into this zone over the past week. 3.1 million fall Chinook were scheduled for release from Big Creek Hatchery today (May 11th).

Over the next two weeks there are just over a million juvenile coho planned for release into this zone. A majority of these will be released into the Klaskanine River (800,000), with the rest split between Tanner Creek (200,000) and Youngs River (4000).

Adult Passage

Adult Passage Adult counts at Bonneville Dam have been updated through 5/10/18. The 2018 adult spring Chinook count at Bonneville Dam of 42,540 is about 1.6 times greater than the 2017 count of 26,205, while being 40% of the 10-year average count of 106,185. The 2018 spring Chinook jack count of 1,662 has 541 more fish than the 2017 count of 1,121 and is 19.6% of the 10-year average count of 8,490. At Willamette Falls, 5,800 adult spring Chinook have been counted so far this year. In 2017, 2,866 adult spring Chinook were counted at Willamette Falls. As of May 10th, a total of 19,290 adult spring Chinook have been counted at The Dalles Dam and 4,315 have been counted at McNary Dam. The Dalles Dam 2018 adult spring Chinook count is about 1.8 times greater than the 2017 count, while being 26.9% of the 10-year average count. The 2018 McNary Dam adult spring Chinook count is 2.3 times greater than the 2017 count, while being 10% of the 10-year average count. A total of 369 spring chinook have been counted at Lower Granite Dam as of May 10th.

The 2018 Bonneville Dam adult steelhead count of 2,943 has 309 more fish than the 2017 count of 2,634 and is about 73.5% of the 10-year average count of 4,001. The 2018 Bonneville Dam adult unclipped steelhead count of 1,199 is about 1.3 times the 2017 count of 907 and 88% of the 10-year average count of 1,363. At upriver sites, adult steelhead continue to move through the hydrosystem to reach their tributaries and spawning sites. The majority of these fish over-

wintered 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 7 to 13 adults per day last week. This year's Lower Granite steelhead count of 4,498 is about 62% of the 2017 count of 7,239 and 52.5% of the 10-year average count of 8,562. The 2018 Lower Granite Dam adult unclipped steelhead count of 1,233 is 41.1% of the 2017 count of 3,000 and 34.7% of the 10-year average count of 3,554. At Willamette Falls, the 2018 count for steelhead was 2,389 as of May 8th. This year's steelhead count is about 3.1 times greater than the 2017 count of 767, while being 32.4% of the 10-year average count of 7,383.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

	From:	4/28/2018	to	05/11/18						
Agency	Hatchery	Species	Race	MiqYr	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
Douglas County PUD Total					460,000					
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	UN	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	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
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	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	Yakama 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	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	Cathlamet Channel Net 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 Toulte 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	102,681	04-15-18	04-30-18	Tanner Creek	Tanner Creek	LCOL
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2018	500,000	05-05-18	05-05-18	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe Total					1,602,681					
Grand Total					35,595,093					

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

Hatchery Releases Next Two Weeks

Hatchery Release Summary										
	From:	5/12/2018	to	5/25/2018						
Agency	Hatchery	Species	Race	MigYr	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
Colville Tribe Total					204,000					
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	McCall Hatchery	CH1	SU	2018	156,500	04-02-18	05-20-18	S Fk Salmon River	Salmon River (ID)	SNAK
Idaho Dept. of Fish and Game Total					156,500					
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2018	400,000	05-22-18	05-22-18	Pittsburg Landing Acclim Pond	Snake River	SNAK
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2018	534,000	05-23-18	05-23-18	Cpt John Acclim Pond	Snake River	SNAK
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2018	534,000	05-24-18	05-24-18	Big Canyon (Clearwater River)	Clearwater River M F	SNAK
Nez Perce Tribe Total					1,468,000					
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	Irrigon Hatchery Complex	CH0	FA	2018	1,000,000	05-19-18	05-19-18	Hells Canyon Dam	Snake River	SNAK
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 Total					2,004,000					
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2018	600,000	05-16-18	05-16-18	Reith Bridge	Umatilla River	MCOL
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2018	600,000	05-24-18	05-24-18	Reith Bridge	Umatilla River	MCOL
Umatilla Tribe Total					1,200,000					
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
Washington Dept. of Fish and Wildlife Total					9,798,906					
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	2,000	05-25-18	05-25-18	Yakama River	Yakima River	MCOL
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2018	30,000	05-25-18	05-25-18	Roza 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	1,700,000	05-20-18	05-20-18	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe Total					2,438,775					
Grand Total					17,342,881					

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
04/27/2018	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
05/04/2018	179.8	0.0	185.6	52.3	202.9	39.5	212.7	50.5	216.9	67.9	229.3	94.8	226.0	117.8
05/05/2018	194.3	4.2	208.5	57.6	240.0	66.4	246.4	83.1	241.7	95.2	265.7	123.4	267.2	144.6
05/06/2018	194.4	4.6	178.4	46.0	211.2	52.7	215.2	52.4	216.9	69.1	239.3	98.6	240.0	127.7
05/07/2018	199.5	5.0	202.8	72.3	234.5	72.1	247.8	85.6	245.6	100.8	274.8	137.5	281.0	156.9
05/08/2018	190.3	4.7	199.8	82.8	243.0	78.2	246.8	87.0	247.1	108.5	268.2	127.9	269.4	145.1
05/09/2018	189.6	4.7	192.9	70.7	234.3	77.5	244.6	84.2	249.1	114.9	277.1	156.2	281.6	145.7
05/10/2018	190.5	4.6	190.1	70.2	241.3	81.8	246.9	87.0	249.7	119.1	274.8	139.4	281.3	170.9

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		Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
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	---	---	97.6	34.7	94.9	30.2	95.1	36.5	103.6	84.9	
05/04/2018	4.8	0.0	---	---	90.1	34.7	86.3	30.2	84.8	30.3	91.5	80.7	
05/05/2018	4.8	0.0	---	---	98.9	34.6	95.6	30.3	96.0	30.0	102.7	85.2	
05/06/2018	4.8	0.0	---	---	111.9	34.7	106.7	29.0	108.2	42.1	115.2	85.0	
05/07/2018	4.8	0.0	---	---	138.5	36.7	134.7	43.6	133.8	66.4	137.8	91.0	
05/08/2018	2.7	0.0	---	---	139.6	33.5	133.0	42.2	134.5	64.6	140.3	86.0	
05/09/2018	2.6	0.0	---	---	141.5	35.1	135.1	44.8	135.2	65.6	138.9	84.9	
05/10/2018	2.5	0.0	---	---	158.1	49.1	152.4	61.7	151.6	80.3	159.2	104.8	

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
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
05/04/2018	323.4	149.8	323.8	112.5	301.1	116.2	328.0	130.0	68.1	117.5
05/05/2018	359.1	197.1	352.8	155.0	331.5	130.0	356.1	149.3	68.6	125.8
05/06/2018	365.4	205.4	366.9	160.2	341.4	146.3	368.0	161.6	68.1	125.9
05/07/2018	394.5	242.5	388.7	181.5	371.2	198.0	382.0	191.2	67.4	111.0
05/08/2018	419.4	259.0	424.6	210.9	401.4	225.9	409.8	202.7	67.3	127.4
05/09/2018	417.8	257.7	420.9	219.8	404.7	215.2	418.7	202.9	66.8	136.6
05/10/2018	427.7	268.8	429.4	220.2	413.1	231.0	429.5	214.0	65.4	137.7

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	05/03/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/10/18	Chinook + Steelhead	102	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam	04/30/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/07/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Lower Monumental Dam	05/02/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/09/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam	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
	05/08/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/10/18	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam	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
	05/05/18	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

FISH PASSAGE CENTER

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

Date 5/11/2018 10:15:08 AM

Page 1 of 4

Total Dissolved Gas Data at Upper Columbia Sites

Hungry H. Dnst		Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph				Chief J. Dnst				Date							
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date				
04/27									107.4	108.5	109.7	24	106.0	106.8	107.2	24	106.3	106.7	107.0	24	108.1	110.5	110.9	24					04/27
04/28									108.3	108.8	109.8	24	109.0	112.0	114.2	24	106.2	106.4	106.5	24	110.4	110.5	110.7	24					04/28
04/29									108.3	108.9	109.5	24	112.0	113.9	114.5	24	106.0	106.1	106.3	24	110.3	110.4	110.6	24					04/29
04/30									108.1	108.5	109.9	24	106.3	106.4	106.5	24	108.9	111.5	112.1	24	111.0	111.4	111.5	24					04/30
05/01									107.9	108.2	108.7	24	106.5	106.7	107.0	24	110.5	112.5	112.9	24	113.2	114.4	114.9	24					05/01
05/02									108.4	109.1	110.0	24	106.5	106.9	107.2	24	106.5	106.7	107.1	24	114.4	114.7	115.0	24					05/02
05/03									108.8	109.6	111.1	24	106.5	106.8	106.9	24	106.5	106.7	107.1	24	112.9	114.1	114.2	24					05/03
05/04									109.0	109.5	109.9	24	106.9	107.2	107.5	24	106.7	106.8	107.1	24	115.5	116.6	117.0	24					05/04
05/05									109.0	109.8	110.7	24	112.4	114.0	114.3	24	106.9	107.1	107.3	24	116.3	116.8	116.9	24					05/05
05/06									110.4	110.8	111.2	24	114.8	115.3	115.6	24	108.8	110.3	112.7	24	114.9	117.3	117.5	24					05/06
05/07									110.4	110.9	111.5	24	115.2	115.9	121.4	24	113.6	114.2	114.7	24	119.1	120.2	121.9	24					05/07
05/08									111.6	112.0	112.3	24	116.0	116.6	117.0	24	114.6	115.2	115.7	24	120.7	121.8	122.2	24					05/08
05/09									111.9	112.4	113.1	24	116.6	116.9	117.2	24	116.0	116.3	116.4	24	119.3	119.5	121.6	24					05/09
05/10									111.9	112.3	112.4	23	116.7	117.1	117.5	23	115.8	115.9	116.1	23	119.1	119.2	119.4	23					05/10

Total Dissolved Gas Data at Upper Columbia Sites

Wells		Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr				Rock Island				Rock I. Tlwr				Date							
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date				
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	119.2	120.5	23	113.1	114.4	116.1	24	116.9	117.8	119.3	21					04/27
04/28	106.2	106.5	106.8	24	112.0	113.4	116.0	24	111.9	112.2	112.4	24	119.0	120.4	122.7	23	112.7	113.9	115.6	24	116.5	117.8	118.5	22					04/28
04/29	106.1	106.2	106.2	24	113.5	115.0	117.2	24	111.8	112.7	113.7	24	119.6	121.5	123.4	24	113.0	114.6	117.3	24	118.2	119.3	120.4	24					04/29
04/30	106.0	106.2	106.8	24	110.2	111.3	112.0	24	113.0	113.8	114.7	24	117.1	118.9	121.3	22	112.6	113.4	114.3	23	116.5	117.5	119.7	21					04/30
05/01	109.9	111.0	111.6	24	115.4	116.4	117.3	24	110.9	111.5	112.2	23	119.5	120.8	121.8	22	113.0	113.5	114.6	23	118.9	120.3	121.6	22					05/01
05/02	109.2	109.7	111.5	24	115.5	116.2	117.1	24	114.7	115.9	116.8	24	122.3	122.8	124.3	21	115.1	116.4	117.2	22	121.2	121.8	122.3	20					05/02
05/03	108.3	108.5	108.9	20	114.9	115.5	116.3	20	115.4	115.9	116.9	24	122.0	122.5	123.7	23	116.7	117.1	117.5	23	121.5	121.8	123.2	21					05/03
05/04	108.2	108.7	109.0	22	114.3	115.5	117.1	22	114.6	115.2	115.5	24	121.7	122.7	124.1	21	115.6	115.9	116.7	23	120.0	120.9	122.0	21					05/04
05/05	109.2	109.6	109.9	24	117.4	118.3	119.0	24	114.0	115.2	116.2	24	124.7	125.3	126.3	22	116.6	117.2	118.1	24	122.7	123.2	124.2	21					05/05
05/06	109.3	109.5	109.7	24	116.1	118.6	120.3	24	117.1	117.4	117.7	24	122.7	125.1	125.6	22	117.6	118.6	119.2	23	122.9	124.0	125.2	22					05/06
05/07	111.9	113.3	114.5	23	120.2	121.2	123.2	23	115.9	117.4	118.0	24	125.5	126.0	126.9	22	118.5	119.1	120.1	23	124.4	124.9	125.7	21					05/07
05/08	114.5	115.1	115.9	24	122.4	123.5	124.4	24	120.0	120.7	121.0	24	126.5	127.5	128.1	22	120.2	121.9	123.1	24	124.5	125.4	126.3	20					05/08
05/09	114.8	115.1	115.7	23	122.6	123.5	124.6	23	121.7	122.0	122.2	24	127.0	127.7	128.3	21	121.2	121.6	122.3	23	125.2	125.4	125.6	21					05/09
05/10	113.7	113.9	114.3	23	122.3	123.0	123.8	23	120.8	121.0	121.2	23	127.6	128.0	128.7	21	120.8	121.2	121.3	23	125.8	126.2	127.4	18					05/10

FISH PASSAGE CENTER

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

Date 5/11/2018 10:15:08 AM

Page 2 of 4

Total Dissolved Gas Data at Upper and Mid-Columbia Sites

Wanapum				Wanapum Tlwr				Priest Rapids				Priest R. Dnstr				Pasco				Date	
Date	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	24 h Avg	12 h Avg	High	# Hr	Date
04/27	114.1	115.3	117.3	24	117.1	119.9	122.8	24	114.7	115.4	116.5	24	117.5	117.8	118.2	24					04/27
04/28	112.4	113.0	113.7	24	117.2	120.9	123.1	24	115.9	117.7	119.5	24	117.5	117.8	118.4	24					04/28
04/29	112.4	112.7	113.0	24	119.0	120.6	121.3	24	116.6	118.7	119.8	24	118.7	119.0	119.3	24					04/29
04/30	113.2	113.9	114.6	24	116.1	118.1	122.0	24	116.1	117.4	119.3	24	117.6	118.2	119.0	24					04/30
05/01	115.0	116.2	117.0	24	119.5	121.5	123.3	24	116.4	118.7	120.2	24	118.3	119.6	120.2	24					05/01
05/02	115.1	116.5	117.2	24	120.8	122.8	123.9	24	119.7	122.1	123.8	24	120.1	120.8	121.8	24					05/02
05/03	117.4	118.7	119.9	24	121.9	122.8	123.7	24	120.7	122.4	122.7	24	120.8	121.6	122.0	24					05/03
05/04	118.5	119.0	119.6	24	120.6	122.3	125.8	24	119.3	120.3	121.9	24	120.5	120.8	121.3	24					05/04
05/05	118.5	118.9	119.2	24	123.4	123.8	124.1	24	121.2	122.6	122.7	24	122.0	122.9	123.1	24					05/05
05/06	119.7	120.3	120.8	24	121.2	123.7	124.8	24	121.9	123.1	123.3	24	122.1	123.0	123.1	24					05/06
05/07	120.0	120.6	121.7	24	125.3	126.3	128.8	24	122.3	124.8	126.1	24	122.5	123.9	124.4	24					05/07
05/08	122.1	122.9	123.5	24	124.8	126.4	127.4	24	124.2	125.8	127.2	24	123.7	124.1	124.4	24					05/08
05/09	121.7	121.9	122.2	24	129.5	132.3	135.1	24	126.8	129.0	130.9	24	124.6	125.1	125.9	24					05/09
05/10	119.7	120.4	120.8	24	125.9	126.7	127.5	24	124.5	126.3	130.1	24	123.8	124.3	124.6	24					05/10

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
04/27	108.0	108.5	109.2	24	103.6	104.4	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	107.8	108.1	24	102.3	102.7	103.5	24	103.4	103.8	104.4	24	101.7	101.9	102.2	24	105.6	105.8	106.0	24	115.0	115.2	115.6	24	04/28
04/29	107.4	107.9	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	104.5	104.8	24	115.3	115.5	115.8	24	04/29
04/30	107.2	107.6	108.0	24	102.4	102.9	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	115.2	115.4	24	04/30
05/01	100.3	101.1	106.7	24	101.5	101.8	102.7	24	104.6	105.1	105.7	24	102.1	102.6	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	24	101.4	102.2	102.9	24	104.3	105.1	105.9	24	102.1	103.3	104.3	24	104.4	104.5	104.8	24	115.8	116.0	116.4	24	05/03
05/04	99.6	100.0	100.7	24	101.6	102.5	103.1	24	104.3	105.1	105.9	24	102.1	103.1	104.0	24	104.4	104.6	104.9	24	115.9	116.1	116.3	24	05/04
05/05	99.8	100.3	100.8	24	101.8	102.4	102.8	24	104.2	104.9	105.4	24	101.9	102.4	102.9	24	104.8	105.2	105.5	24	116.0	116.1	116.3	24	05/05
05/06	100.0	100.6	101.4	24	102.6	103.1	103.5	24	104.6	105.1	105.6	24	102.4	103.0	103.8	24	104.9	105.2	105.5	24	115.8	115.9	116.2	24	05/06
05/07	99.3	99.7	100.2	24	102.7	103.4	104.0	24	104.7	105.4	105.6	24	102.1	102.8	103.1	24	103.6	103.8	104.0	24	116.0	116.5	117.3	24	05/07
05/08	100.0	101.1	101.9	24	103.6	104.3	104.8	24	106.3	107.3	107.9	24	103.6	104.4	104.9	24	104.3	104.8	105.3	24	115.1	115.7	115.9	24	05/08
05/09	100.4	100.9	101.6	24	102.9	103.3	103.7	24	106.0	106.2	106.6	24	102.8	103.0	103.5	24	105.5	105.8	106.2	24	115.4	116.6	117.3	24	05/09
05/10	100.1	100.7	101.4	23	103.4	104.0	104.5	23	106.5	107.1	107.5	23	103.0	103.5	103.9	23	105.3	105.6	106.0	23	119.0	120.6	121.5	23	05/10

FISH PASSAGE CENTER

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

Date 5/11/2018 10:15:08 AM

Page 3 of 4

Total Dissolved Gas Data at Lower Snake Sites

Little Goose				L. Goose Tlwr				Lower Mon.				Lwr. Mon. Tlwr				Ice Harbor				Tlwtr 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
04/27	119.6	120.2	121.1	24	115.8	116.7	117.3	24	118.7	118.9	119.5	24	115.5	115.8	116.1	24	118.7	119.0	119.4	24	119.3	120.3	120.8	24	04/27
04/28	115.4	115.9	117.1	24	115.6	115.9	116.4	24	116.1	116.6	117.7	24	115.9	116.9	118.1	24	115.5	116.0	117.2	24	118.3	118.9	119.2	24	04/28
04/29	112.7	113.2	113.9	24	116.8	117.4	117.4	24	114.3	114.7	115.3	24	118.3	118.8	119.5	24	113.3	113.9	114.4	24	118.6	119.0	119.2	24	04/29
04/30	110.8	111.1	111.6	24	117.2	117.7	118.6	24	115.3	115.6	116.1	24	118.7	119.1	121.3	24	114.6	115.1	115.5	24	118.6	118.9	119.3	24	04/30
05/01	110.4	110.7	111.4	24	115.9	117.6	119.8	24	116.4	116.7	117.0	24	117.5	118.7	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	115.4	117.0	24	115.8	116.1	117.4	24	115.8	116.9	119.5	24	116.1	116.4	116.8	24	117.0	117.8	118.9	24	05/02
05/03	111.3	111.9	112.7	24	114.7	115.0	115.2	24	115.7	116.6	118.4	24	116.2	117.3	117.9	24	116.4	116.7	117.0	24	117.8	118.1	119.0	24	05/03
05/04	113.2	114.3	114.7	24	115.4	115.7	115.8	24	114.6	114.8	115.1	24	114.6	115.1	115.8	24	116.3	116.6	117.1	24	116.6	117.4	117.8	24	05/04
05/05	114.8	115.2	115.7	24	115.5	115.7	115.8	24	115.6	116.2	116.6	24	115.3	115.5	116.4	24	116.2	116.4	116.9	24	117.7	117.9	118.3	24	05/05
05/06	115.8	116.0	116.4	24	115.4	115.6	115.7	24	116.8	117.0	117.2	24	117.5	119.2	119.8	24	116.1	116.3	116.4	24	118.2	118.4	118.7	24	05/06
05/07	114.5	114.9	115.1	24	118.1	120.7	122.2	24	116.0	116.1	116.4	24	121.5	124.0	125.5	24	115.7	116.3	117.2	23	119.9	121.3	122.9	23	05/07
05/08	113.3	113.6	113.8	24	117.7	118.6	119.5	24	118.6	120.9	122.1	24	121.0	121.6	124.6	24	119.2	120.5	120.9	24	120.3	120.9	121.5	24	05/08
05/09	112.0	112.5	112.9	24	117.8	120.6	122.7	24	118.6	119.6	120.4	24	121.7	123.6	127.2	24	119.5	120.0	120.5	24	120.0	120.6	121.6	24	05/09
05/10	109.6	109.9	110.7	23	121.1	123.4	124.3	23	116.6	118.4	120.0	23	123.8	126.2	127.7	23	118.0	118.4	119.0	23	123.0	124.2	125.9	23	05/10

Total Dissolved Gas Data at Mid-Columbia Sites

McNary-Wash.				Tlwtr McNary				John Day				Tlwtr 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
04/27	116.1	116.7	117.7	24	119.0	119.3	119.8	24	121.1	121.5	121.8	24	117.2	117.9	118.1	24	116.6	118.0	118.8	24	116.4	117.5	117.9	24	04/27
04/28	112.9	113.4	114.8	24	118.2	118.5	119.3	24	118.1	118.7	119.5	24	116.4	117.1	118.6	24	113.6	113.9	114.2	24	114.4	114.7	115.4	24	04/28
04/29	110.3	110.8	111.5	24	118.3	118.5	118.8	24	114.6	115.4	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	113.1	113.6	24	119.3	119.5	119.7	24	110.6	111.5	112.6	24	118.9	119.3	119.5	24	112.1	112.6	112.8	24	116.8	118.0	118.7	24	04/30
05/01	113.3	114.1	115.0	24	118.7	119.1	119.6	24	108.7	108.9	109.0	24	119.4	120.2	120.3	24	111.5	111.9	113.2	24	117.0	118.0	118.8	24	05/01
05/02	114.2	114.8	115.3	24	118.8	119.1	119.4	24	110.3	111.3	111.8	24	119.0	119.3	120.2	24	114.1	115.2	115.6	24	122.0	123.2	124.1	24	05/02
05/03	114.6	115.3	115.8	24	119.0	119.3	119.7	24	112.7	113.4	113.8	24	118.7	118.9	119.1	24	114.5	115.1	115.5	24	120.4	122.0	122.7	24	05/03
05/04	115.7	116.2	116.8	24	118.7	119.1	119.4	24	113.6	114.2	114.4	24	118.0	118.1	118.4	24	113.2	113.9	114.6	24	116.4	117.7	118.6	24	05/04
05/05	116.0	116.7	117.1	24	118.8	119.6	120.4	24	115.8	116.7	117.1	24	120.3	120.8	120.9	24	115.4	117.3	118.4	24	118.6	119.5	120.3	24	05/05
05/06	116.4	116.6	116.9	24	120.5	120.7	121.2	24	116.3	116.6	116.7	24	121.1	121.4	121.7	24	117.3	117.6	118.0	24	121.4	122.5	123.1	24	05/06
05/07	116.7	117.3	118.1	24	121.2	121.8	123.1	24	115.4	116.1	117.1	24	122.5	123.6	124.1	24	116.9	118.5	120.4	24	122.6	123.4	124.3	24	05/07
05/08	117.0	117.7	118.2	24	123.7	123.9	124.3	24	118.3	119.0	119.6	24	125.4	126.6	127.9	24	119.6	121.0	122.1	24	123.0	123.5	123.8	24	05/08
05/09	117.4	117.6	117.8	24	123.6	123.9	124.8	24	118.8	119.1	119.5	24	125.9	126.1	126.6	24	120.5	121.1	122.5	24	122.8	123.3	124.1	24	05/09
05/10	115.6	115.9	116.3	23	123.7	123.8	124.1	23	117.9	118.5	119.2	23	125.8	126.0	126.3	23	119.5	119.9	120.2	23	121.8	122.4	123.0	23	05/10

FISH PASSAGE CENTER

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

Date 5/11/2018 10:15:08 AM

Page 4 of 4

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	
04/27	116.1	117.6	118.0	24	117.6	118.1	118.4	24	116.0	116.2	116.3	24	119.7	119.8	120.2	24	04/27
04/28	112.6	112.8	113.0	24	115.8	116.0	116.2	24	115.3	115.7	115.9	24	119.2	119.3	119.4	24	04/28
04/29	112.4	112.6	112.7	24	116.9	117.5	117.8	24	114.4	115.1	115.6	24	121.6	122.3	122.6	24	04/29
04/30	114.3	115.9	117.0	24	118.8	119.8	120.9	24	115.7	116.6	117.0	24	122.6	123.1	123.4	24	04/30
05/01	114.6	115.2	115.5	24	119.1	119.7	120.8	24	117.6	118.0	118.2	24	122.7	122.9	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	24	121.5	122.1	122.8	24	119.2	120.7	121.4	24	123.4	123.8	124.1	24	05/03
05/04	118.0	119.1	120.4	24	119.3	120.1	120.7	24	119.6	120.3	121.0	24	121.1	122.5	123.7	24	05/04
05/05	116.7	118.5	120.0	24	119.0	120.2	121.3	24	117.6	118.5	119.1	24	123.0	123.4	123.8	24	05/05
05/06	119.3	119.6	120.2	24	121.2	121.4	121.6	24	119.3	120.2	120.8	24	122.9	123.2	123.5	24	05/06
05/07	119.1	120.3	121.1	24	122.2	123.2	123.8	24	120.2	121.7	122.4	24	123.0	123.4	123.6	24	05/07
05/08	123.3	123.8	124.0	24	124.9	125.5	125.8	24	123.2	124.6	125.2	24	123.9	124.0	124.2	24	05/08
05/09	122.4	122.9	123.3	24	124.4	124.5	124.7	24	122.7	123.1	123.4	24	123.8	124.0	124.1	24	05/09
05/10	121.2	121.4	121.9	23	124.3	124.4	124.7	23	122.1	122.5	123.1	23	124.3	124.3	124.5	23	05/10

Hours used in calculating values:

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 1 of 7

COMBINED YEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
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		63	122	33	262,100	79,683	64,840	2,748		66,794	47,795
05/03/2018		48	247	20	189,137	71,607	57,513	2,545	118,684		53,399
05/04/2018	35	43	63	18	80,231	73,889	51,551	2,696		60,169	53,619
05/05/2018		66	120	23	93,179	69,812	43,873	3,272	147,304		55,078
05/06/2018		61	212	50	118,983	99,133	79,427	4,074		88,293	63,218
05/07/2018			318	93	168,366	126,497	96,849	2,124	105,072		85,129
05/08/2018		37	227	101	251,390	134,113	109,570	2,762		97,508	80,852
05/09/2018			214	510	300,039	141,182	127,160		177,684		74,211
05/10/2018			464	473	301,682	156,900	114,799			95,175	69,733
05/11/2018											
Total:	35	747	4,003	6,292	2,494,967	1,278,708	1,113,277	25,721	709,179	562,548	837,714
# Days:	1	10	14	14	14	14	14	12	7	7	14
Average:	35	75	286	449	178,212	91,336	79,520	2,143	101,311	80,364	59,837
YTD:	23,452	40,574	20,537	12,696	3,778,347	1,961,902	1,609,349	29,730	865,354	821,172	1,386,568

Number of hours sampled:

- No data available or no sample conducted

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 2 of 7

COMBINED SUBYEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
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	0	5	293	0	0	48		0	1,258
05/03/2018		0	0	1	1,043	0	0	47	1,702		428
05/04/2018	0	0	0	3	646	0	0	15		232	483
05/05/2018		0	0	0	638	2	0	35	1,267		1,620
05/06/2018		0	1	4	1,217	293	305	25		0	1,850
05/07/2018			0	5	0	0	0	27	9,939		300
05/08/2018		0	0	24	0	0	0	86		539	274,905
05/09/2018			0	37	2,877	289	0		19,071		77,704
05/10/2018			0	27	1,075	0	425			1,198	28,068
05/11/2018											
Total:	0	0	2	143	8,912	584	730	393	34,969	2,265	393,144
# Days:	1	10	14	14	14	14	14	12	7	7	14
Average:	0	0	0	10	637	42	52	33	4,996	324	28,082
YTD:	0	0	4	181	29,980	1,740	730	1,063	38,620	2,554	1,258,709

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

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 3 of 7

COMBINED COHO

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
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		0	6	2	9,382	5,203	317	208		2,662	17,227
05/03/2018		0	10	4	13,559	3,279	0	333	4,679		17,657
05/04/2018	0	0	9	7	969	2,735	0	219		2,083	20,446
05/05/2018		0	9	13	3,510	5,736	601	422	22,909		22,409
05/06/2018		0	9	6	4,565	6,155	611	706		3,348	27,558
05/07/2018			55	11	7,936	6,963	3,003	701	17,039		25,778
05/08/2018		0	74	46	18,053	9,515	1,623	1,969		3,234	13,243
05/09/2018			93	31	19,357	7,720	2,578		10,595		14,405
05/10/2018			121	33	25,252	14,830	4,252			1,498	9,210
05/11/2018											
Total:	0	0	418	708	113,041	71,254	17,952	4,958	74,429	16,373	222,741
# Days:	1	10	14	14	14	14	14	12	7	7	14
Average:	0	0	30	51	8,074	5,090	1,282	413	10,633	2,339	15,910
YTD:	0	0	488	1,360	120,625	72,489	18,108	7,097	89,996	19,786	324,350

Number of hours sampled:

- No data available or no sample conducted

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 4 of 7

COMBINED STEELHEAD

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
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		336	37	10	124,014	122,666	133,093	946		49,762	10,620
05/03/2018		248	299	14	103,608	97,361	55,158	907	17,016		10,001
05/04/2018	14	361	78	10	38,760	85,008	48,115	841		51,376	10,222
05/05/2018		522	126	329	69,565	92,376	41,168	1,183	21,739		15,390
05/06/2018		1,161	134	46	63,904	65,937	47,351	1,497		44,532	6,812
05/07/2018			173	134	86,450	68,282	57,809	1,253	10,886		13,489
05/08/2018		962	178	55	102,119	44,557	40,581	1,508		45,522	15,628
05/09/2018			108	132	152,243	79,448	56,444		7,988		7,419
05/10/2018			363	97	185,898	95,649	73,981			27,835	10,085
05/11/2018											
Total:	14	6,138	1,683	1,560	1,494,353	1,217,210	966,027	9,915	101,880	301,771	164,539
# Days:	1	10	14	14	14	14	14	12	7	7	14
Average:	14	614	120	111	106,740	86,944	69,002	826	14,554	43,110	11,753
YTD:	723	19,825	3,137	5,292	2,913,290	2,319,117	1,591,264	10,898	191,133	489,674	256,090

Number of hours sampled:

- No data available or no sample conducted

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 5 of 7

COMBINED SOCKEYE

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (Index)	LGS (Index)	LMN (Index)	RIS (Index)	MCN (Index)	JDA (Index)	BO2 (Index)
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	0	28	952	1,975		12,240	2,076
05/03/2018		0	0	0	695	351	0	6,122	25,098		5,744
05/04/2018	0	0	0	1	0	1,234	0	2,217		12,264	15,238
05/05/2018		0	0	0	319	17	0	2,103	125,366		10,260
05/06/2018		0	0	0	609	10	0	6,398		15,188	11,270
05/07/2018			0	7	567	9	375	4,605	203,518		24,280
05/08/2018		0	0	15	1,347	18	0	8,847		34,479	22,678
05/09/2018			0	27	1,570	586	368		166,337		41,906
05/10/2018			0	13	1,343	642	0			55,966	55,258
05/11/2018											
Total:	0	0	0	63	9,353	3,876	4,209	41,114	587,802	137,897	193,671
# Days:	0	0	0	5	668	277	301	3,426	83,972	19,700	13,834
Average:	0	0	0	5	668	277	301	3,426	83,972	19,700	13,834
YTD:	0	0	0	63	19,663	17,308	7,816	54,560	592,289	140,483	196,822

Number of hours sampled:

- No data available or no sample conducted

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 6 of 7

COMBINED LAMPREY JUVENILES

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR* (Sample)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
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	0	4	0	0	10		0	133
05/03/2018		0	0	0	5	0	0	16	0		200
05/04/2018	0	0	0	0	6	0	0	11		571	0
05/05/2018		0	0	0	2	1,000	0	2	500		0
05/06/2018		0	0	0	6	4,000	800	12		0	0
05/07/2018			0	0	1	400	800	20	400		100
05/08/2018		0	0	0	1	800	400	32		143	0
05/09/2018			0	0	5	200	200		2,600		0
05/10/2018			0	0	15	0	200			1,429	0
05/11/2018											
Total:	0	0	0	0	47	6,600	3,200	113	4,100	2,743	533
# Days:	1	10	14	14	16	15	14	15	7	8	14
Average:	0	0	0	0	3	440	229	8	586	343	38
YTD:		1	3		50	11,434	3,200	137	11,402	38,543	6,571

- No data available or no sample conducted

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

Number of hours sampled:

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

FISH PASSAGE CENTER

Smolt Monitoring Program Two Week Passage Index Report

Date 5/11/2018 10:17:30 AM

Page 7 of 7

Smolt Monitoring Program Sites and Agency Collaborations:

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

- No data available or no sample conducted

Number of hours sampled:

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

Important Information About this Report:

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

FISH PASSAGE CENTER

Two Week Transportation Summary Report

4/27/2018 12:00:00 AM TO 5/11/2018 12:00:00 AM

Date 5/11/2018 10:18:05 AM

Page 1 of 2

Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	6,200	1,745,359	80,000	6,600	1,038,044	3,914,247
Sum of Number Barged	6,169	1,741,099	79,985	6,571	1,024,694	3,883,212
Sum of Number Bypassed	29	3,683	0	0	13,256	30,224
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	1	19	0	2	17	56
Sum of Facility Morts	1	557	15	27	77	754
Sum of Reseach Morts	0	1	0	0	0	1
Sum of Total Project Mort	2	577	15	29	94	811

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	403	864,765	47,838	2,592	821,190	2,557,978
Sum of Number Barged	398	862,446	47,793	2,386	821,004	2,555,031
Sum of Number Bypassed	2	0	0	0	0	2
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	16	1	1	4	26
Sum of Facility Morts	3	2,303	44	205	182	2,919
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	3	2,319	45	206	186	2,945

FISH PASSAGE CENTER

Two Week Transportation Summary Report

4/27/2018 12:00:00 AM TO 5/11/2018 12:00:00 AM

Date 5/11/2018 10:18:05 AM

Page 2 of 2

Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	400	644,700	9,800	2,600	578,700	1,814,900
Sum of Number Barged	400	644,518	9,800	2,598	578,652	1,814,620
Sum of Number Bypassed	0	0	0	0	0	0
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	2	0	0	2	6
Sum of Facility Morts	0	180	0	2	46	274
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	182	0	2	48	280

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	7,003	3,254,824	137,638	11,792	2,437,934	8,287,125
Sum of Number Barged	6,967	3,248,063	137,578	11,555	2,424,350	8,252,863
Sum of Number Bypassed	31	3,683	0	0	13,256	30,226
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	1	37	1	3	23	88
Sum of Facility Morts	4	3,040	59	234	305	3,947
Sum of Reseach Morts	0	1	0	0	0	1
Sum of Total Project Mort	5	3,078	60	237	328	4,036

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 5/11/2018 10:17:42 AM

Page 1 of 2

Lower Granite Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	18200	2440930	84300	11720	1821742	6198634
Sum of Number Barged	6567	1833537	80745	7212	1126797	4181655
Sum of Number Bypassed	11625	606664	3539	4464	694806	2015904
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	7	50	0	2	35	129
Sum of Facility Morts	1	678	16	42	101	939
Sum of Reseach Morts	0	1	0	0	3	7
Sum of Total Project Mort	8	729	16	44	139	1075

Little Goose Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	1203	1308505	48646	11959	1547073	4464459
Sum of Number Barged	398	999837	48193	3985	935198	2922809
Sum of Number Bypassed	802	306206	407	7716	611659	1538449
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	0	26	1	7	8	50
Sum of Facility Morts	3	2436	45	251	208	3151
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	3	2462	46	258	216	3201

FISH PASSAGE CENTER

YTD Transportation Summary Report

Date 5/11/2018 10:17:42 AM

Page 2 of 2

Lower Monumental Dam

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	400	943583	9900	4800	961117	2880917
Sum of Number Barged	400	743938	9800	3196	708878	2175090
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	5	0	2	3	13
Sum of Facility Morts	0	207	0	4	69	349
Sum of Reseach Morts	0	0	0	0	0	0
Sum of Total Project Mort	0	212	0	6	72	362

Total

Data	Chinook Subyearlings	Chinook Yearlings	Coho	Sockeye	Steelhead	Grand Total
Sum of Number Collected	19803	4693018	142846	28479	4329932	13544010
Sum of Number Barged	7365	3577312	138738	14393	2770873	9279554
Sum of Number Bypassed	12427	1112303	4046	13778	1558632	4259818
Sum of Number Trucked	0	0	0	0	0	0
Sum of Sample Morts	7	81	1	11	46	192
Sum of Facility Morts	4	3321	61	297	378	4439
Sum of Reseach Morts	0	1	0	0	3	7
Sum of Total Project Mort	11	3403	62	308	427	4638

Cumulative Adult Passage at Mainstem Dams Through: 05/10

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	05/10	42540	1662	26205	1121	106185	8490	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/10	19290	809	10546	589	71736	5390	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/10	11830	544	5665	362	57344	3992	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/10	4315	106	1844	69	42898	1923	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/10	1901	51	701	14	29685	1085	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/10	1120	21	501	15	24466	834	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/10	654	15	163	9	17762	614	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/10	369	10	104	2	14403	331	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/09	97	6	65	0	4828	36	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/09	56	3	42	0	3850	21	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/09	36	1	18	0	2950	17	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/09	16	0	5	0	826	2	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/09	6	0	2	0	405	6	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/08	5800	409	2866	124	9859	214	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2018		2017		10-Yr Avg.		2018	2017	10-Yr Avg.	10-Yr		2018	2017	10-Yr Avg.	2018	2017	10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack				Unclipped	Unclipped							
BON	05/10	1	-1	0	0	0	0	0	0	0	2943	2634	4001	1199	907	1363	30	47	54
TDA	05/10	4	0	0	0	0	0	0	0	0	155	1442	1996	49	494	897	-2	0	0
JDA	05/10	0	0	0	0	0	1	0	0	0	360	511	3842	168	332	1735	11	1	17
MCN	05/10	-2	0	0	0	1	0	0	0	0	363	2533	4065	167	758	1652	17	0	2
IHR	05/10	-1	0	0	0	0	0	0	0	0	1263	1039	4104	425	488	1482	5	0	0
LMN	05/10	0	0	0	0	0	0	0	0	0	1171	1393	8017	300	674	2741	2	0	0
LGS	05/10	0	0	0	0	0	0	0	0	0	1182	1406	4857	312	641	2467	0	0	0
LGR	05/10	0	0	0	0	0	0	0	0	0	4498	7239	8562	1233	3000	3554	0	0	0
PRD	05/09	0	0	0	0	0	0	0	0	0	25	22	38	0	0	0	1	0	2
WAN	05/09	0	0	0	0	0	0	0	0	0	45	19	79	0	0	0	0	1	0
RIS	05/09	0	0	0	0	0	0	0	0	0	54	41	92	17	12	51	0	0	0
RRH	05/09	0	0	0	0	0	0	0	0	0	74	103	263	23	19	178	0	0	0
WEL	05/09	0	0	0	0	0	0	0	0	0	86	17	34	31	10	22	0	0	0
WFA	05/08	0	2	117	117	0	0	0	0	0	2389	767	7383	1477	627	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.

