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

# Fish Passage Center

# Weekly Report #17–10

May 12, 2017

## This Week's Highlights

**River Conditions**

Flows in the Snake River have increased over the past week at Lower Granite, relative to the week prior. Dworshak Dam began its refill operation on April 15th, and has reduced outflows from 25 Kcfs to 4.7 Kcfs (no spill). Hells Canyon Complex flows remain quite high, with outflows at Hells Canyon ranging between 52.4 and 53.9 Kcfs over the last four days.

The 2017 spill for fish passage program at the lower Snake River projects began just after midnight on April 3rd. Due to relatively high river flows this year, significant involuntary spill has occurred at all of the mainstem federal projects, and at the Upper Columbia projects. BPA has indicated that the involuntary spill that is occurring in the Federal Columbia River Power System is mostly in excess of hydraulic capacity, as several projects are presently operating with generation unit outages, limiting hydraulic capacity. Below is a list of unit outages at Snake River and Lower Columbia Dams:

1. Bonneville Dam (as of April 29th, 2017): Units 3, 7, 8, 16 Out of Service.
2. The Dalles Dam (as of April 29, 2017): Units 2, 3, 12, 15, 16, 21 Out of Service
3. John Day Dam (as of May 5, 2017): Units 5, 6, 12 Out of Service.
4. McNary Dam (as of April 27, 2017): Units 2, 13 Out of Service.
5. Ice Harbor Dam (as of April 27, 2017): Units 2 and 4 Out of Service.
6. Lower Monumental Dam (as of April 27, 2017): Units 1 and 5 Out of Service. Unit 1 expected back in October of 2017 and Unit 5 expected back in late July of 2017.
7. Little Goose Dam (as of April 27, 2017): Unit 5 out of Service due to excessive vibration.
8. Lower Granite Dam (as of April 27, 2017): Units 1 Out of service. Unit 1 expected back middle July 2017.

**Water Supply**

Precipitation throughout the Columbia Basin has varied between 16% and 84% of average at individual sub-basins over early May. Precipitation above The Dalles has been 65% of average over May. Over the 2017 water year, precipitation has ranged between 111% and 139% of average.

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

| Location | Water Year 2017 May 1-11, 2017 | | Water Year 2017 October 1, 2016 to May 11, 2017 | |
|---|---|---|---|---|
| | Observed (inches) | % Average | Observed (inches) | % Average |
| Columbia Above Coulee | 0.91 | 84 | 33.5 | 126 |
| Snake River Above Ice Harbor | 0.33 | 39 | 22.1 | 133 |
| Columbia Above The Dalles | 0.56 | 65 | 25.5 | 126 |
| Kootenai | 0.85 | 78 | 34.7 | 133 |
| Clark Fork | 0.50 | 47 | 20.7 | 111 |
| Flathead | 0.41 | 34 | 34.0 | 137 |
| Pend Oreille River Basin above Waneta Dam | 0.52 | 46 | 29.2 | 127 |
| Salmon River Basin | 0.83 | 78 | 29.3 | 138 |
| Upper Snake Tributaries | 0.17 | 16 | 25.9 | 137 |
| Clearwater | 0.43 | 31 | 36.9 | 120 |
| Willamette River above Portland | 1.03 | 70 | 78.6 | 139 |

Snowpack within the Columbia Basin has been above average. Average snowpack (as of May 8) in the Columbia River for basins above the Snake River confluence is 117% of average, for Snake River Basins the average snowpack is 150% of average, and for lower

Columbia Basins between McNary and Bonneville Dam average snowpack is 161% of average.

Table 2 displays the May 11th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 11th ESP forecast at The Dalles between April and August is 114,300 Kaf (131% of average).

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

| Location | May 11, 2017 5-day QPF ESP | |
|---|---|---|
| | % Average (1981-2010) | Runoff Volume (Kaf) |
| The Dalles (Apr-Aug) | 131 | 114,300 |
| Grand Coulee (Apr-Aug) | 124 | 70,197 |
| Libby Res. Inflow, MT (Apr-Aug) | 129<br>139* | 7,586<br>8,190* |
| Hungry Horse Res. Inflow, MT (Apr-Aug) | 127 | 2,452 |
| Lower Granite Res. Inflow (Apr- July) | 146 | 29,045 |
| Brownlee Res. Inflow (Apr-July) | 205 | 11,217 |
| Dworshak Res. Inflow (Apr-July) | 113<br>121* | 2,722<br>2,941* |

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,235.6 feet (5-11-17) and has drafted 3.2 feet over the last week. Outflows at Grand Coulee have ranged between 170.9 Kcfs and 208.9 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,369.2 feet (5-11-17) and has filled 9.75 feet over the past week. Daily average outflows at Libby Dam have been 16 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,531.9 feet (5-11-17) and has filled 3.9 feet last week. Outflows at Hungry Horse have been 9.5 to 10.2 Kcfs over the last week.

Dworshak is currently at an elevation of 1,546.2 feet (5-11-17) and has refilled 15.5 feet over the last week. Dworshak began to refill on April 15th, 2017. Dworshak outflows over the last week were 4.6 Kcfs to 4.7 Kcfs.

The Brownlee Reservoir was at an elevation of 2,027.5 feet on May 11, 2017, and refilled 12.1 feet last week. Outflows at Hells Canyon have ranged between 52.4 and 53.9 Kcfs over the last four days. The minimum flow at Hells Canyon is 8.5 Kcfs.

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 5th, 2017), the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 157 Kcfs last week and 136.2 Kcfs over the spring season.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (began April 10th) and 135 Kcfs at Priest Rapids Dam (began April 10th). Over the last week, flows at McNary were 414.2 Kcfs and 252.5 Kcfs at Priest Rapids. Over the spring season, flows at McNary Dam were 367.2 Kcfs and Priest Rapids Dam flows were 223.1 Kcfs.

**Spill**

Flows in the Snake River have increased over the past week at Lower Granite, relative to the week prior. Dworshak Dam began its refill operation on April 15th, and continues with a reduced outflow of 4.6 Kcfs. Hells Canyon Complex flows remain quite high, with outflows at Hells Canyon ranging between 52.4 and 53.8 Kcfs over the last four days. Current outflow projections show high flow continuing in both the Snake River and Lower Columbia as seasonal runoff increases.
The 2017 spill for fish passage program at the lower Snake River projects began just after midnight on April 3rd. However, due to the high river flows, significant involuntary spill has occurred at all of the mainstem federal projects, and at the Upper Columbia projects. BPA has indicated that the involuntary spill that is occurring in the Federal Columbia River Power System is mostly in excess of hydraulic capacity, as many projects are presently operating with generation unit outages, limiting hydraulic capacity.

| Project | Spill Level Day/Night |
|---|---|
| Lower Granite | 20 Kcfs/20 Kcfs |
| Little Goose | 30%/30% |
| Lower Monumental | Gas Cap/Gas Cap |
| Ice Harbor | April 28-June 20: 30%/30% vs. 45 kcfs/Gas Cap |

Snake River projects continue to spill "involuntarily" above the Biological Opinion levels presently targeted for fish spill. Spill at Lower Granite Dam exceeded the targeted 20 Kcfs, and ranged from 42 Kcfs to 80 Kcfs. At Little Goose Dam three units were out of service this past week severely limiting the hydraulic capacity at the project. Biological Opinion spill is 30% of flow but, as a consequence of the increasing flow and the unit outages, spill ranged from 66% to 80% of average daily flow. Spill at Lower Monumental Dam exceeded the 120% gas cap level every day last week and ranged from 53 to 93 Kcfs. At Ice Harbor spill ranged from 66 Kcfs to 121 Kcfs.

Spill for fish passage began in the middle Columbia River on April 10th. Spill for fish passage began on April 10th at the lower Columbia River projects. Spill for fish passage at the lower Columbia River projects at the following amounts described in the 2017 Fish Operations Plan.

| Project | Spill Level Day/Night |
|---|---|
| McNary | 40%/40% |
| John Day | April 28-June 15: 30%/30% and 40%/40% |
| The Dalles | 40%/40% |
| Bonneville | 100 Kcfs/100 Kcfs |

Spill that has occurred in the middle Columbia River over the past several weeks has also exceeded the planned spill for fish passage levels due to "involuntary" spill. At McNary Dam spill averaged 65 to 70% of daily average flow. At John Day Dam spill averaged between 35 and 46% of average daily flow. On May 5th the project was scheduled to spill 40% of average daily flow, but was reduced to the 35% due to the tailrace total dissolved gas levels exceeding 120%. At The Dalles Dam spill ranged from 44 to 71% of average daily flow. Bonneville Dam spill was 139 to 259 Kcfs.

Similar to the Snake and Middle Columbia rivers, high spill levels are occurring at projects in the Upper Columbia River.

High total dissolved gas (TDG) supersaturation levels are occurring below Hells Canyon Complex dams on the Snake River, due to discharge in excess of hydraulic capacity. At Dworshak Dam, tailrace TDG levels have decreased to near 100% as a result of the project beginning refill on April 15th, 2017 and reduced outflows from 25 Kcfs to 4.6 Kcfs (no spill). TDG supersaturation at the Lower Granite Dam forebay monitor has averaged about 107% over the past week. The present uncontrolled spill due to unit outages, flood control operations and snowmelt has increased over the last week, with TDG supersaturation levels now exceeding TDG criteria at all projects in the Snake and Columbia rivers. Over the past week the tailwater TDG supersaturation (average of 12 highest hourly levels in a calendar day) ranged from 120% to 128% at Lower Granite Dam; 125% to 129% at Little Goose Dam; 121% to 127% at Lower Monumental Dam; and, 119-126% at Ice Harbor Dam. TDG supersaturation levels have also been high at the Middle Columbia projects, ranging from 122% to 130% at the tailwater of McNary Dam; 122% to 136% below John Day Dam; 120% to 127% at The Dalles Dam; and, 124% to 128% at the Cascade Island gage below Bonneville Dam. Similar to the federal hydrosystem, TDG supersaturation levels have increased prior to Wells Dam on the Upper Columbia over the last week (118% in the forebay of Wells Dam). TDG downstream of Wells Dam also increased last week, near 128% in the tailraces of Rocky Reach and Rock Island dams. TDG was near 127% in the tailrace of Wanapum and 124% downstream of Priest Rapids dams.

**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 monitoring in smolts took place over the past week at Lower Granite, Little Goose, Lower Monumental, Bonneville, McNary, and Rock Island Dams. At Lower Granite Dam during the 5/11/17 sample no fish showed signs of GBT. At Little Goose Dam no fish were detected with signs of GBT in the exam conducted on 5/8/17. However, due to the significant increase in spill at Little Goose Dam due to unit outages the forebay TDG supersaturation levels at Lower Monumental Dam were as high as 132%. As a result, 22% of fish examined were detected with signs of GBT on 5/10/17. Most of the signs were Rank 1, but 1% of the fish examined displayed severe signs (Rank 3 or greater) of GBT.

At Bonneville Dam 5% of the sample on 5/10/17 was observed with Rank 1 levels of GBT in their fins; the sample on 5/6/17 at Bonneville showed 2% of sample at Rank 1. At McNary Dam no fish showed signs of GBT on exams taken on 5/08/17 or 5/10/17. With the exception of Lower Monumental Dam, the observed signs of GBT are well below the action criteria that would be in place during the voluntary spill for fish passage program. However, no action is possible in response to the Lower Monumental exceedance due to the "involuntary" nature of the spill. At Rock Island Dam, the GBT exams on 5/09/17 and 5/11/17 showed 20% of fish with signs of GBT (all at Rank 1 or Rank 2). The action criteria for interruption of the voluntary spill for fish passage program is defined as either 15 percent of examined fish showing signs of gas bubble trauma in their non-paired fins, or five percent of the fish examined show signs of gas bubble trauma in their non-paired fins where more than 25 percent of the surface area of the fin is occluded by gas bubbles, corresponding to ranks greater than 2.

**Temperature**

Forebay temperatures are now being reported for Lower Granite, Ice Harbor, McNary and Bonneville dams. Thus far, reported temperatures are close to average based on the past ten years of data.

**Smolt Monitoring**

Sampling for the Smolt Monitoring Program (SMP) is underway at all bypass facilities. Sampling at the Grande Ronde Trap continued this week. Due to high flows and debris loads, sampling at the Snake River Trap has been terminated for the 2017 season. Sampling at the Salmon River Trap has ended for 2017 due to increasing river flows. Sampling at the Imnaha Trap was interrupted on May 5th due to high river flows.

This week's samples at Bonneville Dam (BON) were again dominated by yearling Chinook, except for the two days after the release of subyearling Chinook from the Spring Creek Hatchery. This week's daily average passage index for yearling Chinook at BON was about 77,700 per day, which is an increase from last week's daily average passage index of about 52,400 per day. Sockeye and steelhead passage were similar this week, when compared to the previous week. This week's daily average passage indices for these two species were 3,000 and 8,600 per day, respectively. Last week's daily average passage indices were 2300 for sockeye and about 10,000 for steelhead. Subyearling Chinook increased significantly this week. This week's daily average passage index was 61,000 compared to 500 last week. Coho passage of a daily average of 7,000 was similar to last week's daily average passage index of 7,350. Finally, Pacific lamprey macropthalmia were encountered in only one of this week's samples (May 8th). No Pacific lamprey ammocoetes were encountered in this week's collections.

Similar to last year, sampling at John Day Dam (JDA) occurs every-other-day this year. This week's samples at JDA were dominated by yearling Chinook and steelhead. This week's daily average passage indices for these two species were nearly 119,000 and 70,000, respectively. The yearling Chinook represents an increase over last week's daily average passage index of 106,000, while the steelhead average daily passage index is a decrease from the 110,000 observed last week. Coho passage was similar this week while sockeye passage increased, when compared to last week. This week's daily average passage indices for these two species were 4,100 and 6,400, respectively. Last week's daily average passage indices were 4,100 for coho and 5,050 for sockeye. Subyearling Chinook were also encountered in this week's samples increasing as the week progressed. Finally, Pacific lamprey were encountered in all four of this week's

samples. This week's daily average collections for lamprey were 572.

Sampling at McNary Dam (MCN) is also 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 about 110,300, which is similar to last week's daily average passage index of about 113,600 per day. Passage of coho and sockeye increased this week, but steelhead decreased when compared to the previous week. This week's daily average passage indices for these three species were 3,250, 6,600 and 22,600 per day, respectively. Last week's daily average passage indices were about 1,500 for coho, 6,450 for sockeye, and 32,500 for steelhead. An average 3,400 subyearling Chinook were collected in this week's samples at MCN. This week's daily average collection for Pacific macropthalmia was nearly 150 fish per day, which is a decrease over last week's daily average of about 1500 per day.

Collections for transportation at Lower Granite Dam (LGR) began on May 1st, with the first barge leaving on May 2nd. This week's samples at LGR were dominated by yearling Chinook and steelhead. This week's daily average passage index for yearling Chinook was nearly 131,555 per day, which is a decrease over last week's daily average passage index of about 150,700 per day. Passage of steelhead increased this week, when compared to last week. This week's daily average passage index for steelhead was about 135,000, whereas that for last week was 75,000 per day. Subyearling Chinook decreased this week and sockeye passage increased. This week's daily average passage indices for these two species were 238 and about 1439 per day, respectively. Last week's daily average passage indices were 160 for subyearling Chinook and nearly 600 for sockeye. Several (376) PIT-tagged sockeye from Springfield Hatchery were detected at the LGR juvenile detection system this past week. This indicates that at the sockeye from the Springfield Hatchery releases are arriving at LGR. Coho passage increased this week, when compared to last week. This week's daily average passage index for coho was 4,400 per day, whereas that for last week was about 2,100 per day. Finally, 20 Pacific lamprey juveniles were encountered in this week's samples at LGR.

Similar to recent years, sampling at Little Goose Dam (LGS) was every-other-day until the start of transportation, at which time sampling went to every day. Collections for transportation at LGS began on May 1st with the first barge leaving on May 2nd. Yearling Chinook continued to dominate the samples at LGS this week. This week's daily average passage index for yearling Chinook was about 56,500 per day, which is a decrease over last week's daily average passage index of about 145,000 per day. Steelhead passage decreased this week, when compared to the previous week. This week's daily average passage index for steelhead was about 32,500 per day, whereas that for last week was about 87,000 per day. Sockeye/kokanee passage increased this week. This week's daily average passage index was about 265 per day, whereas that for last week was 125 per day. To date, no PIT-tagged sockeye from Springfield Hatchery have been detected at LGS. Subyearling Chinook were only encountered in three of this week's samples and in extremely low numbers. Finally, no Pacific lamprey were encountered in this week's samples.

Similar to recent years, sampling at Lower Monumental Dam (LMN) was every-third-day from April 1st to April 16th, every-other-day from April 16th until transportation began, at which time sampling switched to every day. Collections for transportation at LMN began on May 1st with the first barge leaving on May 2nd. (Data is only available through May 9 this week). Yearling Chinook dominated this week's samples at LMN. The daily average passage index for yearling Chinook at LMN was nearly 137,400, which is an increase over last week's daily average passage index of about 94,000 per day. Steelhead passage was similar this week, when compared to last week. This week's daily average passage index for steelhead was about 85,500 per day, whereas that for last week was about 83,000 per day. Passage of sockeye/kokanee also decreased this week. This week's daily average passage index for sockeye/kokanee at LMN was about 312 per day, whereas that for last week was about 750per day. Finally, passage of subyearling Chinook and coho both increased this week. This week's daily average passage indices for these two species were 460 and 900 per day, respectively. To date, no lamprey juveniles have been encountered at LMN this year.

Yearling Chinook dominated the samples at Rock Island Dam (RIS) again this week. This week's daily average passage index for yearling Chinook was nearly 1,770 per day, which is a decrease over last week's daily average passage index of just over 2,100 per

day. Steelhead passage increased this week, when compared to last week. This week's daily average passage index for steelhead was about 1685 per day, whereas that for last week was 225 per day. This week's passage numbers for subyearling Chinook, coho, and sockeye all increased compared to that observed last week. This week's daily average passage indices for these three species were 135, 593, and 511 per day, respectively. An average of two Pacific lamprey were collected in the samples this week.

The Grande Ronde Trap (GRN) is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer two in the Grande Ronde River. This week's samples at GRN were dominated by yearling Chinook and steelhead. This week's daily average collections were approximately 114 yearling Chinook and 91 steelhead per day. However, both of these daily average collections represented a decrease from the previous week of 150 fish per species. The only other salmonids that were encountered in this week's collections were coho, at approximately 54 per day. These coho juveniles are likely part of a release of approximately 500,000 hatchery coho juveniles into the Lostine River on March 9th. No lamprey juveniles were encountered in this week's samples at GRN.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 and is operated by Idaho Department of Fish and Game. Sampling at WTB was terminated after the sample on May 5th. Flows of 30 Kcfs are generally the threshold for safe operation of this trap. The current 120-day forecast indicates that flows are not expected to fall below 30 Kcfs until mid- to late June.

The Snake River Trap at Lewiston, ID (LEW) is located at river kilometer 225 and operated by Idaho Department of Fish and Game. Sampling at LEW began on March 5th but was suspended soon thereafter due to high flows and high debris levels. After several weeks of suspended sampling, it was decided that sampling at LEW would be terminated for the 2017 season. The risk of injury to the crew and damage to the trap from the high flows were too high to warrant continued efforts to sample fish at this site.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at the Imnaha River Trap is year round. High river flows have prevented the operation of the trap since the morning of May 5th.

**Hatchery Release**

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

**Snake River Zone**: The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. One volitional release of steelhead smolts to the Tucannon River was scheduled to end this week. In all, this release was expected to total about 49,000 steelhead smolts. No new releases were scheduled to begin this week in the Snake River Zone.

Approximately 2.8 million subyearling fall Chinook are scheduled to be released to this zone over the next two weeks. All of these fall Chinook releases are scheduled to take place above Lower Granite Dam. Of these 2.8 million fall Chinook smolts, 500,000 (18%) are scheduled to be released into the Clearwater River and 400,000 (14%) are scheduled to be released into the Grande Ronde River. The remaining 1.9 million (68%) are scheduled to be released directly into the Snake River at three different release sites: 1) just below Hells Canyon Dam (1.0 million), 2) Captain John Rapids Acclimation Facility (500,000), and 3) Pittsburg Landing Acclimation Facility (400,000). Of the 2.8 million fall Chinook smolts that are scheduled to be released over the next two weeks, approximately 36% are unmarked, which means that distinguishing them from wild smolts will not difficult.

**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. A volitional release of approximately 112,000 steelhead smolts to the Methow River was scheduled to end this week. There were no other releases scheduled for this zone this week.

Several volitional releases of coho and summer steelhead are scheduled to end over the next two weeks. In addition, three new releases of subyearling summer Chinook are scheduled to begin over the next two weeks. In all, these three releases are estimated

to total about 825,000 subyearling summer Chinook smolts. Of these, about 175,000 (21%) are scheduled to be released into the Okanogan River, 500,000 (61%) are scheduled to be released from Wells Hatchery, and 150,000 (18%) are scheduled to be released from Chief Joseph Hatchery.

**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). There was only one new release scheduled for this week. On Monday, May 8th, Spring Creek NFH released approximately 4.5 million subyearling fall Chinook tules. These fall Chinook were first observed in the juvenile fish facility at Bonneville Dam at about 10:00 that evening.

Several volitional releases of yearling spring Chinook, summer steelhead, and winter steelhead are scheduled to end over the next two weeks. In addition, one new release is scheduled to occur in this zone over the next two weeks. Approximately 600,000 subyearling fall Chinook smolts are scheduled to be released into the Umatilla River on or around May 17th.

**Lower Columbia Zone**: The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Two new releases were scheduled to occur in this zone this week. The first of these was a release of approximately 3.1 million fall Chinook smolts into Big Creek, which was scheduled to occur on or around May 11th. Second, about 4,000 coho pre-smolts were scheduled to be released into Young's Bay on or around May 12th. This release is a part of the ODFW Enhancement Program and was to be conducted by students from Astoria High School.

Several volitional releases of cutthroat trout, summer steelhead, and winter steelhead are scheduled to end over the next two weeks. In addition, two new releases are scheduled to occur in this zone over the next two weeks. First, approximately 3.6 million fall Chinook smolts are scheduled to be released into the Kalama River on around May 20th. Second, about 800,000 coho smolts are scheduled to be released into the North Fork of the Klaskanine River on or around May 16th.

**Adult Passage**

Adult Passage Adult counts at Bonneville Dam have been updated through 5/11/17. The 2017 adult spring Chinook count at Bonneville Dam of 27,498 is about 27.6% of the 2016 count of 99,493 and 24.6% of the 10-year average count of 111,644. The 2017 spring Chinook jack count of 1,289 is about 25.9% of the 2016 count of 4,976 and 12.5% of the 10-year average count of 10,275. At Willamette Falls, 3,168 adult spring Chinook have been counted so far this year. The Willamette Falls 2017 adult spring Chinook count is about 33.5% of the 2016 count of 9,455 and about 26.8% of the 10 year average count of 11,838. As of May 11th, a total of 12,427 adult spring Chinook have been counted at The Dalles Dam and 1,844 have been counted at McNary Dam. The Dalles Dam 2017 adult spring Chinook count is about 18.3% of the 2016 count and 15.8% of the 10-year average count. The 2017 McNary Dam adult spring Chinook count is about 4.3% of the 2016 count and 4.1% of the 10-year average count. A total of 118 spring chinook have been counted at Lower Granite Dam as of May 4th.

The 2017 Bonneville Dam adult steelhead count of 2,653 is about 64.5% of the 2016 count of 4,114 and 63.3% of the 10-year average count of 4,189. The 2017 Bonneville Dam adult unclipped steelhead count of 910 is about 54.8% of the 2016 count of 1,660 and 65.9% of the 10-year average count of 1,401. 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 5 to 14 adults per day last week. This year's Lower Granite steelhead count of 7,244 is 1.3 times greater than the 2016 count of 5,437, while being about 81.3% of the 10-year average count of 8,908. The 2017 Lower Granite Dam adult unclipped steelhead count of 3,004 has 86 fewer fish than the 2016 count of 3,090 and 498 fewer fish than the 10-year average count of 3,498. At Willamette Falls, the 2017 count for steelhead was 769 as of May 10th. This year's steelhead count is about 9.3% of the 2016 count of 8,244 and 9.2% the 10-year average count of 8,361.

# Hatchery Releases Last Two Weeks

**Hatchery Release Summary**

**From: 4/29/2017 to 05/12/17**

| Agency | Hatchery | Species | Race | MigYr | NumRel | RelStart | RelEnd | RelSite | RelRiver | Zone |
|---|---|---|---|---|---|---|---|---|---|---|
| Idaho Dept. of Fish and Game | Magic Valley Hatchery | ST | SU | 2017 | 625,690 | 04-14-17 | 05-01-17 | Yankee Fk (Salmon R) | Salmon River (ID) | SNAK |
| **Idaho Dept. of Fish and Game Total** | | | | | **625,690** | | | | | |
| Oregon Dept. of Fish and Wildlife | Big Creek Hatchery | CH0 | FA | 2017 | 3,100,000 | 05-11-17 | 05-11-17 | Big Creek Hatchery | Big Creek | LCOL |
| Oregon Dept. of Fish and Wildlife | Big Creek Hatchery | CO | UN | 2017 | 535,000 | 05-02-17 | 05-02-17 | Big Creek Hatchery | Big Creek | LCOL |
| Oregon Dept. of Fish and Wildlife | Clackamas Hatchery | ST | WI | 2017 | 50,000 | 05-02-17 | 05-02-17 | Clackamas Hatchery | Clackamas River | LCOL |
| Oregon Dept. of Fish and Wildlife | Clackamas Hatchery | ST | WI | 2017 | 60,000 | 05-02-17 | 05-02-17 | Clackamas Hatchery | Clackamas River | LCOL |
| Oregon Dept. of Fish and Wildlife | Clatsop County Fisheries | CH0 | FA | 2017 | 2,100,000 | 05-01-17 | 05-01-17 | S Fk Klaskanine River | Klaskanine River | LCOL |
| Oregon Dept. of Fish and Wildlife | Clatsop County Fisheries | CO | UN | 2017 | 200,000 | 05-02-17 | 05-02-17 | Blind Slough | Col R Bel. Bon Dam | LCOL |
| Oregon Dept. of Fish and Wildlife | Clatsop County Fisheries | CO | UN | 2017 | 200,000 | 05-02-17 | 05-02-17 | S Fk Klaskanine River | Klaskanine River | LCOL |
| Oregon Dept. of Fish and Wildlife | Clatsop County Fisheries | CO | UN | 2017 | 400,000 | 05-04-17 | 05-04-17 | Tongue Pt | Col R Bel. Bon Dam | LCOL |
| Oregon Dept. of Fish and Wildlife | Clatsop County Fisheries | CO | UN | 2017 | 540,000 | 05-02-17 | 05-02-17 | Tongue Pt | Col R Bel. Bon Dam | LCOL |
| Oregon Dept. of Fish and Wildlife | Enhancement Program | CO | UN | 2018 | 4,000 | 05-12-17 | 05-12-17 | Youngs Bay | Youngs River | LCOL |
| Oregon Dept. of Fish and Wildlife | Enhancement Program | ST | WI | 2017 | 25,000 | 05-01-17 | 05-01-17 | Clackamas River | Clackamas River | LCOL |
| Oregon Dept. of Fish and Wildlife | Irrigon Hatchery Complex | ST | SU | 2017 | 160,000 | 04-18-17 | 05-02-17 | Wallowa Acclim Pond | Wallowa River | SNAK |
| Oregon Dept. of Fish and Wildlife | Irrigon Hatchery Complex | ST | SU | 2017 | 215,000 | 04-01-17 | 04-30-17 | Little Sheep Creek | Imnaha River | SNAK |
| Oregon Dept. of Fish and Wildlife | Klaskanine Hatchery | CO | UN | 2017 | 500,000 | 04-30-17 | 04-30-17 | Klaskanine Hatchery | Klaskanine River | LCOL |
| Oregon Dept. of Fish and Wildlife | Klaskanine Hatchery | CO | UN | 2017 | 500,000 | 04-30-17 | 04-30-17 | N Fk Klaskanine River | Klaskanine River | LCOL |
| Oregon Dept. of Fish and Wildlife | Klaskanine Hatchery | CO | UN | 2017 | 500,000 | 04-30-17 | 04-30-17 | N Fk Klaskanine River | Klaskanine River | LCOL |
| Oregon Dept. of Fish and Wildlife | Wizard Falls Hatchery | ST | SU | 2017 | 10,000 | 05-05-17 | 05-05-17 | Wychus Creek | Deschutes River | MCOL |
| Oregon Dept. of Fish and Wildlife | Wizard Falls Hatchery | ST | SU | 2017 | 15,000 | 05-05-17 | 05-05-17 | Crooked River (OR) | Deschutes River | MCOL |
| **Oregon Dept. of Fish and Wildlife Total** | | | | | **9,114,000** | | | | | |
| U.S. Fish and Wildlife Service | Spring Creek NFH | CH0 | FA | 2017 | 4,500,000 | 05-08-17 | 05-08-17 | Spring Creek Hatchery | Bonneville Pool | MCOL |
| **U.S. Fish and Wildlife Service Total** | | | | | **4,500,000** | | | | | |
| Washington Dept. of Fish and Wildlife | Chiwawa Hatchery | ST | SU | 2017 | 125,000 | 05-01-17 | 05-05-17 | Chiwawa Hatchery | Wenatchee River | UCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | FA | 2017 | 175 | 05-01-17 | 05-01-17 | Wenatchee River | Wenatchee River | UCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | FA | 2017 | 225 | 05-01-17 | 05-01-17 | Sand Hollow | Wanapum Pool | UCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | FA | 2017 | 2,800 | 05-01-17 | 05-01-17 | Above McNary Dam | McNary Pool | MCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | FA | 2017 | 3,975 | 05-01-17 | 05-01-17 | Above McNary Dam | McNary Pool | MCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | FA | 2017 | 13,600 | 05-01-17 | 05-01-17 | Yakama River | Yakima River | MCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | SU | 2017 | 225 | 05-01-17 | 05-01-17 | Methow River | Methow River | UCOL |
| Washington Dept. of Fish and Wildlife | COOP | CH0 | SU | 2017 | 225 | 05-01-17 | 05-01-17 | Similkameen River | Okanogan River | UCOL |
| Washington Dept. of Fish and Wildlife | Cowlitz Salmon | CO | NO | 2017 | 1,174,989 | 05-01-17 | 05-01-17 | Cowlitz Salmon | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Cowlitz Salmon | CO | NO | 2017 | 1,202,450 | 05-01-17 | 05-01-17 | Cowlitz Salmon | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Grays River Hatchery | CO | NO | 2017 | 80,000 | 04-24-17 | 04-30-17 | Grays River Hatchery | Grays River | LCOL |
| Washington Dept. of Fish and Wildlife | Lewis River Hatchery | CH1 | SP | 2017 | 4,850 | 05-01-17 | 05-01-17 | Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | Lewis River Hatchery | CH1 | SP | 2017 | 10,050 | 05-01-17 | 05-01-17 | Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | Lewis River Hatchery | CH1 | SP | 2017 | 15,000 | 05-01-17 | 05-01-17 | Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | Merwin Hatchery | ST | WI | 2017 | 51,000 | 05-01-17 | 06-01-17 | N Fk Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | North Toutle Hatchery | CO | SO | 2017 | 150,000 | 05-01-17 | 05-01-17 | Green River | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Tucannon Hatchery | ST | SU | 2017 | 49,000 | 04-15-17 | 05-07-17 | Curl Lake Acclim Pond | Tucannon River | SNAK |
| Washington Dept. of Fish and Wildlife | Washougal Hatchery | CO | NO | 2017 | 157,500 | 05-01-17 | 05-01-17 | Washougal Hatchery | Washougal River | LCOL |
| Washington Dept. of Fish and Wildlife | Washougal Hatchery | CO | SO | 2017 | 437,000 | 05-01-17 | 05-05-17 | Deep River Net Pens | Grays River | LCOL |
| Washington Dept. of Fish and Wildlife | Washougal Hatchery | CO | SO | 2017 | 460,000 | 05-01-17 | 05-05-17 | Deep River Net Pens | Grays River | LCOL |
| **Washington Dept. of Fish and Wildlife Total** | | | | | **3,938,064** | | | | | |
| Yakama Tribe | Klickitat Hatchery | CO | NO | 2017 | 1,000,000 | 05-01-17 | 05-01-17 | Klickitat Hatchery | Klickitat River | MCOL |
| **Yakama Tribe Total** | | | | | **1,000,000** | | | | | |
| **Grand Total** | | | | | **19,177,754** | | | | | |

# Hatchery Releases Next Two Weeks

**Hatchery Release Summary**

**From: 5/13/2017 to 5/26/2017**

| Agency | Hatchery | Species | Race | MigYr | NumRel | RelStart | RelEnd | RelSite | RelRiver | Zone |
|---|---|---|---|---|---|---|---|---|---|---|
| Colville Tribe | Chief Joseph Hatchery | CH0 | SU | 2017 | 150,000 | 05-16-17 | 05-16-17 | Chief Joseph Hatchery | Wells Pool | UCOL |
| Colville Tribe | Chief Joseph Hatchery | CH0 | SU | 2017 | 175,000 | 05-20-17 | 05-20-17 | | Okanogan River | UCOL |
| **Colville Tribe Total** | | | | | **325,000** | | | | | |
| Nez Perce Tribe | Lyons Ferry Hatchery | CH0 | FA | 2017 | 400,000 | 05-20-17 | 05-20-17 | Pittsburg Landing Acclim Pond | Snake River | SNAK |
| Nez Perce Tribe | Lyons Ferry Hatchery | CH0 | FA | 2017 | 500,000 | 05-25-17 | 05-25-17 | Cpt John Acclim Pond | Snake River | SNAK |
| Nez Perce Tribe | Lyons Ferry Hatchery | CH0 | FA | 2017 | 500,000 | 05-26-17 | 05-26-17 | Big Canyon (Clearwater River) | Clearwater River M F | SNAK |
| **Nez Perce Tribe Total** | | | | | **1,400,000** | | | | | |
| Oregon Dept. of Fish and Wildlife | Irrigon Hatchery Complex | CH0 | FA | 2017 | 400,000 | 05-19-17 | 05-19-17 | Grande Ronde River | Grande Ronde River | SNAK |
| Oregon Dept. of Fish and Wildlife | Irrigon Hatchery Complex | CH0 | FA | 2017 | 1,000,000 | 05-15-17 | 05-19-17 | Hells Canyon Dam | Snake River | SNAK |
| Oregon Dept. of Fish and Wildlife | Klaskanine Hatchery | CO | UN | 2017 | 800,000 | 05-16-17 | 05-16-17 | N Fk Klaskanine River | Klaskanine River | LCOL |
| **Oregon Dept. of Fish and Wildlife Total** | | | | | **2,200,000** | | | | | |
| U.S. Fish and Wildlife Service | Winthrop NFH | ST | SU | 2017 | 215,000 | 04-24-17 | 05-19-17 | Winthrop Hatchery | Methow River | UCOL |
| **U.S. Fish and Wildlife Service Total** | | | | | **215,000** | | | | | |
| Umatilla Tribe | Umatilla Hatchery | CH0 | FA | 2017 | 600,000 | 05-17-17 | 05-17-17 | Reith Bridge | Umatilla River | MCOL |
| **Umatilla Tribe Total** | | | | | **600,000** | | | | | |
| Washington Dept. of Fish and Wildlife | Cowlitz Trout | CT | UN | 2017 | 95,000 | 04-15-17 | 05-15-17 | Cowlitz Trout | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Cowlitz Trout | ST | WI | 2017 | 50,000 | 04-15-17 | 05-15-17 | Cowlitz Trout | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Cowlitz Trout | ST | WI | 2017 | 120,000 | 04-15-17 | 05-15-17 | Cowlitz Trout | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Cowlitz Trout | ST | WI | 2017 | 480,000 | 04-15-17 | 05-15-17 | Cowlitz Trout | Cowlitz River | LCOL |
| Washington Dept. of Fish and Wildlife | Fallert Creek Hatchery | CH0 | FA | 2017 | 3,583,300 | 05-20-17 | 05-31-17 | Fallert Creek Hatchery | Kalama River | LCOL |
| Washington Dept. of Fish and Wildlife | Fallert Creek Hatchery | ST | SU | 2017 | 24,600 | 04-15-17 | 05-15-17 | Fallert Creek Hatchery | Kalama River | LCOL |
| Washington Dept. of Fish and Wildlife | Kalama Falls Hatchery | ST | WI | 2017 | 12,000 | 04-15-17 | 05-15-17 | Coweeman River | Coweeman River | LCOL |
| Washington Dept. of Fish and Wildlife | Kalama Falls Hatchery | ST | WI | 2017 | 43,900 | 04-15-17 | 05-15-17 | Kalama Falls Hatchery | Kalama River | LCOL |
| Washington Dept. of Fish and Wildlife | Merwin Hatchery | ST | SU | 2017 | 177,000 | 04-15-17 | 05-15-17 | Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | Merwin Hatchery | ST | WI | 2017 | 116,000 | 04-15-17 | 05-15-17 | Lewis River | Lewis River | LCOL |
| Washington Dept. of Fish and Wildlife | Skamania Hatchery | ST | SU | 2017 | 20,000 | 04-15-17 | 05-15-17 | S Fk Toutle River | Toutle River | LCOL |
| Washington Dept. of Fish and Wildlife | Skamania Hatchery | ST | SU | 2017 | 90,000 | 04-17-17 | 05-17-17 | Klickitat River | Klickitat River | MCOL |
| Washington Dept. of Fish and Wildlife | Skamania Hatchery | ST | WI | 2017 | 20,000 | 04-17-17 | 05-17-17 | Rock Cr (Stevenson) | Bonneville Pool | MCOL |
| Washington Dept. of Fish and Wildlife | Skamania Hatchery | ST | WI | 2017 | 60,000 | 04-17-17 | 05-17-17 | Washougal River | Washougal River | LCOL |
| Washington Dept. of Fish and Wildlife | Skamania Hatchery | ST | WI | 2017 | 75,000 | 04-17-17 | 05-17-17 | Washougal River | Washougal River | LCOL |
| Washington Dept. of Fish and Wildlife | Wells Hatchery | CH0 | SU | 2017 | 500,000 | 05-15-17 | 05-15-17 | Wells Hatchery | Rocky Reach Pool | UCOL |
| **Washington Dept. of Fish and Wildlife Total** | | | | | **5,466,800** | | | | | |
| Yakama Tribe | Cle Elem Hatchery | CH1 | SP | 2017 | 208,500 | 03-15-17 | 05-15-17 | Clark Flat Acclim Pond | Yakima River | MCOL |
| Yakama Tribe | Cle Elem Hatchery | CH1 | SP | 2017 | 218,451 | 03-15-17 | 05-15-17 | Easton Pond | Yakima River | MCOL |
| Yakama Tribe | Cle Elem Hatchery | CH1 | SP | 2017 | 228,881 | 03-15-17 | 05-15-17 | Jack Creek Acclim Pond | Yakima River | MCOL |
| Yakama Tribe | Willard Hatchery | CO | UN | 2017 | 41,097 | 04-24-17 | 05-20-17 | Winthrop Hatchery | Methow River | UCOL |
| Yakama Tribe | Willard Hatchery | CO | UN | 2017 | 102,364 | 04-26-17 | 05-20-17 | Rolfings Acclim Pond | Wenatchee River | UCOL |
| **Yakama Tribe Total** | | | | | **799,293** | | | | | |
| **Grand Total** | | | | | **11,006,093** | | | | | |

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

| | Grand Coulee | | Chief Joseph | | Wells | | Rocky Reach | | Rock Island | | Wanapum | | Priest Rapids | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill |
| 04/28/2017 | 176.7 | 0.0 | 178.2 | 50.5 | 187.6 | 10.0 | 192.2 | 50.8 | 192.9 | 57.9 | 213.2 | 103.9 | 214.6 | 115.8 |
| 04/29/2017 | 180.7 | 0.0 | 178.8 | 36.3 | 186.9 | 10.0 | 192.1 | 37.5 | 194.1 | 58.5 | 205.1 | 81.5 | 208.2 | 105.0 |
| 04/30/2017 | 172.7 | 0.0 | 183.6 | 28.1 | 191.9 | 11.9 | 192.1 | 72.1 | 193.9 | 57.0 | 205.1 | 88.5 | 202.3 | 102.0 |
| 05/01/2017 | 164.6 | 0.0 | 168.7 | 24.0 | 182.3 | 10.0 | 182.7 | 26.8 | 186.0 | 52.0 | 203.0 | 82.0 | 207.3 | 120.2 |
| 05/02/2017 | 169.6 | 5.2 | 169.4 | 43.5 | 180.5 | 12.5 | 177.8 | 38.2 | 178.3 | 40.0 | 196.8 | 82.0 | 197.4 | 96.2 |
| 05/03/2017 | 182.6 | 12.7 | 185.7 | 54.7 | 201.0 | 20.3 | 202.8 | 59.9 | 202.8 | 52.1 | 209.5 | 91.0 | 206.2 | 101.6 |
| 05/04/2017 | 175.9 | 9.4 | 172.3 | 55.2 | 186.7 | 10.9 | 191.5 | 40.9 | 197.2 | 46.7 | 210.2 | 74.9 | 209.3 | 107.2 |
| 05/05/2017 | 170.9 | 5.2 | 176.8 | 61.1 | 201.2 | 26.6 | 199.7 | 69.2 | 208.3 | 62.5 | 220.5 | 89.0 | 219.1 | 107.6 |
| 05/06/2017 | 182.1 | 18.7 | 183.1 | 65.3 | 210.8 | 32.7 | 215.3 | 77.8 | 221.5 | 79.0 | 239.9 | 119.4 | 243.7 | 143.3 |
| 05/07/2017 | 200.0 | 29.9 | 204.1 | 75.9 | 234.4 | 57.0 | 237.7 | 97.3 | 240.7 | 103.8 | 261.6 | 136.6 | 263.6 | 143.1 |
| 05/08/2017 | 196.4 | 29.8 | 197.9 | 86.2 | 229.7 | 55.3 | 231.9 | 95.8 | 233.4 | 99.3 | 256.2 | 135.2 | 253.6 | 133.6 |
| 05/09/2017 | 206.7 | 44.7 | 208.7 | 100.4 | 237.2 | 69.0 | 236.8 | 104.8 | 238.0 | 94.1 | 258.2 | 134.7 | 258.8 | 153.6 |
| 05/10/2017 | 208.9 | 25.7 | 212.5 | 103.7 | 241.1 | 70.9 | 243.3 | 97.7 | 244.6 | 98.3 | 266.0 | 130.1 | 269.7 | 166.9 |
| 05/11/2017 | 182.5 | 2.4 | 191.9 | 78.3 | 225.2 | 58.0 | 228.3 | 96.2 | 233.7 | 96.3 | 256.0 | 128.3 | 258.9 | 141.8 |

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

| | Dworshak | | Brownlee | Hells Canyon | Lower Granite | | Little Goose | | Lower Monumental | | Ice Harbor | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Flow | Spill | Inflow | Outflow | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill |
| 04/28/2017 | 7.2 | 2.4 | --- | 60.1 | 135.2 | 48.3 | 131.2 | 42.4 | 131.1 | 53.4 | 136.5 | 88.5 |
| 04/29/2017 | 7.3 | 2.5 | --- | 57.0 | 124.4 | 35.7 | 123.7 | 38.4 | 124.8 | 54.1 | 130.2 | 82.7 |
| 04/30/2017 | 7.2 | 2.5 | --- | 63.2 | 120.2 | 41.0 | 115.0 | 35.9 | 115.9 | 54.0 | 118.7 | 93.0 |
| 05/01/2017 | 4.8 | 0.0 | --- | 58.8 | 123.0 | 34.7 | 120.8 | 54.4 | 123.5 | 54.8 | 128.6 | 84.8 |
| 05/02/2017 | 4.7 | 0.0 | --- | 58.0 | 118.2 | 46.1 | 116.2 | 62.0 | 116.8 | 57.6 | 119.7 | 89.6 |
| 05/03/2017 | 4.7 | 0.0 | --- | 50.5 | 111.7 | 33.7 | 108.1 | 53.8 | 110.8 | 49.7 | 112.5 | 73.4 |
| 05/04/2017 | 4.7 | 0.0 | --- | 50.7 | 110.2 | 22.2 | 105.2 | 50.6 | 107.2 | 52.8 | 111.2 | 66.3 |
| 05/05/2017 | 4.7 | 0.0 | --- | 50.9 | 122.1 | 41.9 | 119.1 | 78.5 | 120.0 | 53.3 | 119.5 | 65.7 |
| 05/06/2017 | 4.7 | 0.0 | --- | 50.8 | 145.5 | 72.3 | 142.4 | 109.9 | 140.9 | 63.2 | 145.6 | 92.9 |
| 05/07/2017 | 4.7 | 0.0 | --- | 50.9 | 161.4 | 78.8 | 160.1 | 127.3 | 160.8 | 83.2 | 161.3 | 107.4 |
| 05/08/2017 | 4.6 | 0.0 | --- | 52.4 | 171.1 | 79.8 | 168.1 | 134.6 | 171.2 | 93.2 | 170.8 | 120.8 |
| 05/09/2017 | 4.6 | 0.0 | --- | 53.6 | 167.5 | 76.5 | 165.0 | 131.4 | 166.9 | 89.2 | 169.0 | 113.9 |
| 05/10/2017 | 4.6 | 0.0 | --- | 53.9 | 164.8 | 74.0 | 162.2 | 129.1 | 163.4 | 85.3 | 165.5 | 110.0 |
| 05/11/2017 | 4.6 | 0.1 | --- | 53.8 | 166.7 | 76.0 | 163.3 | 129.6 | 162.2 | 84.2 | 164.1 | 110.3 |

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

| | McNary | | John Day | | The Dalles | | Bonneville | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Flow | Spill | Flow | Spill | Flow | Spill | Flow | Spill | PH1 | PH2 |
| 04/28/2017 | 361.1 | 211.1 | 373.0 | 117.5 | 360.4 | 174.6 | 384.3 | 168.9 | 76.2 | 126.8 |
| 04/29/2017 | 356.4 | 208.3 | 369.1 | 123.1 | 359.2 | 190.8 | 381.6 | 169.7 | 74.8 | 124.7 |
| 04/30/2017 | 332.7 | 194.6 | 344.5 | 110.5 | 330.5 | 149.3 | 361.8 | 153.1 | 73.4 | 122.9 |
| 05/01/2017 | 337.1 | 200.7 | 336.3 | 110.8 | 322.9 | 142.9 | 351.5 | 141.3 | 75.1 | 122.7 |
| 05/02/2017 | 333.6 | 204.1 | 345.0 | 116.0 | 335.7 | 164.1 | 350.6 | 148.2 | 75.5 | 114.5 |
| 05/03/2017 | 322.1 | 200.7 | 330.3 | 116.8 | 318.2 | 139.3 | 345.8 | 146.6 | 73.8 | 113.0 |
| 05/04/2017 | 317.7 | 201.1 | 320.6 | 115.2 | 312.5 | 129.1 | 340.8 | 134.0 | 70.7 | 123.7 |
| 05/05/2017 | 345.7 | 223.2 | 343.8 | 120.1 | 326.1 | 141.6 | 350.6 | 139.0 | 76.9 | 122.3 |
| 05/06/2017 | 390.9 | 265.6 | 391.0 | 138.9 | 375.0 | 192.4 | 388.4 | 180.5 | 77.5 | 118.0 |
| 05/07/2017 | 424.8 | 295.4 | 437.1 | 178.9 | 426.3 | 292.0 | 436.8 | 236.0 | 76.6 | 111.9 |
| 05/08/2017 | 439.8 | 298.3 | 451.2 | 199.1 | 436.2 | 308.6 | 454.5 | 253.6 | 75.9 | 112.6 |
| 05/09/2017 | 429.9 | 300.7 | 438.9 | 194.9 | 433.4 | 308.9 | 451.8 | 259.1 | 72.2 | 108.1 |
| 05/10/2017 | 431.0 | 293.6 | 435.5 | 200.0 | 427.1 | 305.1 | 443.5 | 251.4 | 68.4 | 111.3 |
| 05/11/2017 | 437.7 | 291.6 | 433.5 | 189.2 | 423.9 | 252.5 | 438.7 | 245.2 | 66.7 | 114.4 |

# 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** | | | | | | | | | | | |
| | 05/04/17 | Chinook + Steelhead | 100 | 3 | 2 | 2.00% | 0.00% | 2 | 0 | 0 | 0 |
| | 05/11/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| **Little Goose Dam** | | | | | | | | | | | |
| | 05/01/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| | 05/08/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| **Lower Monumental Dam** | | | | | | | | | | | |
| | 05/03/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| | 05/10/17 | Chinook + Steelhead | 100 | 22 | 22 | 22.00% | 1.00% | 18 | 3 | 1 | 0 |
| **McNary Dam** | | | | | | | | | | | |
| | 04/30/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| | 05/02/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| | 05/08/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| | 05/10/17 | Chinook + Steelhead | 100 | 0 | 0 | 0.00% | 0.00% | 0 | 0 | 0 | 0 |
| **Bonneville Dam** | | | | | | | | | | | |
| | 04/29/17 | Chinook + Steelhead | 100 | 2 | 2 | 2.00% | 0.00% | 2 | 0 | 0 | 0 |
| | 05/02/17 | Chinook + Steelhead | 100 | 2 | 2 | 2.00% | 0.00% | 2 | 0 | 0 | 0 |
| | 05/06/17 | Chinook + Steelhead | 100 | 2 | 2 | 2.00% | 0.00% | 2 | 0 | 0 | 0 |
| | 05/10/17 | Chinook + Steelhead | 100 | 5 | 5 | 5.00% | 0.00% | 5 | 0 | 0 | 0 |
| **Rock Island Dam** | | | | | | | | | | | |
| | 05/02/17 | Chinook + Steelhead | 100 | 20 | 20 | 20.00% | 0.00% | 18 | 2 | 0 | 0 |
| | 05/04/17 | Chinook + Steelhead | 100 | 17 | 17 | 17.00% | 1.00% | 14 | 2 | 1 | 0 |
| | 05/09/17 | Chinook + Steelhead | 100 | 20 | 20 | 20.00% | 0.00% | 19 | 1 | 0 | 0 |
| | 05/11/17 | Chinook + Steelhead | 100 | 20 | 20 | 20.00% | 0.00% | 16 | 4 | 0 | 0 |

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

## Total Dissolved Gas Saturation Data at Upper Columbia River Sites

| | Hungry H. Dnst | | | | Boundary | | | | Grand Coulee | | | | Grand C. Tlwr | | | | Chief Joseph | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | --- | --- | --- | 0 | --- | --- | --- | 0 | 110.4 | 110.6 | 110.9 | 24 | 109.1 | 109.3 | 109.5 | 24 | 111.8 | 112.7 | 113.7 | 24 |
| 4/29 | --- | --- | --- | 0 | --- | --- | --- | 0 | 111.1 | 111.8 | 112.5 | 24 | 109.2 | 109.6 | 109.7 | 24 | 109.6 | 110.1 | 111.2 | 24 |
| 4/30 | --- | --- | --- | 0 | --- | --- | --- | 0 | 111.3 | 111.5 | 111.7 | 24 | 109.7 | 110.0 | 110.2 | 24 | 109.4 | 109.6 | 109.7 | 24 |
| 5/1 | --- | --- | --- | 0 | --- | --- | --- | 0 | 110.6 | 110.7 | 110.8 | 24 | 109.0 | 109.4 | 109.5 | 24 | 109.0 | 109.0 | 109.3 | 24 |
| 5/2 | --- | --- | --- | 0 | --- | --- | --- | 0 | 110.9 | 111.5 | 112.3 | 24 | 114.0 | 118.0 | 119.1 | 24 | 108.7 | 108.8 | 109.0 | 24 |
| 5/3 | --- | --- | --- | 0 | --- | --- | --- | 0 | 111.8 | 112.2 | 112.6 | 24 | 119.4 | 120.0 | 120.3 | 24 | 109.2 | 109.7 | 111.0 | 24 |
| 5/4 | --- | --- | --- | 0 | --- | --- | --- | 0 | 113.0 | 114.0 | 116.1 | 24 | 119.7 | 120.3 | 120.7 | 24 | 117.3 | 119.7 | 120.5 | 24 |
| 5/5 | --- | --- | --- | 0 | --- | --- | --- | 0 | 113.8 | 114.2 | 114.7 | 24 | 118.6 | 118.8 | 119.0 | 24 | 120.7 | 120.8 | 121.0 | 24 |
| 5/6 | --- | --- | --- | 0 | --- | --- | --- | 0 | 112.8 | 113.0 | 113.5 | 24 | 120.8 | 121.7 | 126.1 | 24 | 118.1 | 119.3 | 120.4 | 24 |
| 5/7 | --- | --- | --- | 0 | --- | --- | --- | 0 | 112.0 | 112.2 | 112.5 | 24 | 124.0 | 126.2 | 126.8 | 24 | 117.1 | 118.1 | 118.4 | 24 |
| 5/8 | --- | --- | --- | 0 | --- | --- | --- | 0 | 112.3 | 112.8 | 113.3 | 24 | 121.6 | 121.8 | 122.1 | 24 | 121.8 | 124.1 | 125.0 | 24 |
| 5/9 | --- | --- | --- | 0 | --- | --- | --- | 0 | 112.7 | 113.3 | 113.8 | 23 | 128.9 | 132.8 | 134.1 | 23 | 121.7 | 122.2 | 123.3 | 23 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

## Total Dissolved Gas Saturation Data at Mid Columbia River Sites

| | Chief J. Dnst | | | | Wells | | | | Wells Dwnstrm | | | | Rocky Reach | | | | Rocky R. Tlwr | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 115.0 | 115.2 | 115.3 | 24 | 110.8 | 111.5 | 113.3 | 19 | 112.1 | 112.7 | 114.4 | 19 | 112.0 | 112.4 | 112.6 | 24 | 121.5 | 122.5 | 123.2 | 23 |
| 4/29 | 112.2 | 113.4 | 114.9 | 24 | 111.4 | 111.8 | 112.6 | 24 | 112.7 | 112.9 | 113.4 | 24 | 111.8 | 112.2 | 112.7 | 24 | 119.6 | 120.1 | 120.7 | 24 |
| 4/30 | 110.6 | 111.0 | 111.2 | 24 | 108.9 | 109.2 | 110.1 | 24 | 110.7 | 111.5 | 112.3 | 24 | 112.2 | 112.7 | 113.1 | 24 | 122.5 | 123.8 | 124.2 | 24 |
| 5/1 | 110.0 | 110.5 | 111.6 | 24 | 108.0 | 108.4 | 108.5 | 24 | 109.3 | 109.6 | 109.7 | 24 | 109.6 | 110.0 | 110.4 | 24 | 117.4 | 118.4 | 122.2 | 24 |
| 5/2 | 113.3 | 115.2 | 115.6 | 24 | 108.1 | 108.3 | 108.5 | 24 | 109.6 | 109.8 | 110.1 | 24 | 109.0 | 109.2 | 109.3 | 24 | 118.1 | 120.6 | 122.7 | 22 |
| 5/3 | 115.0 | 115.1 | 115.3 | 24 | 109.9 | 111.1 | 111.4 | 23 | 112.1 | 113.9 | 114.3 | 23 | 110.0 | 110.6 | 111.4 | 24 | 122.2 | 122.6 | 123.4 | 23 |
| 5/4 | 115.3 | 115.4 | 115.6 | 24 | 112.8 | 114.5 | 116.5 | 24 | 113.7 | 114.8 | 116.5 | 24 | 113.1 | 114.3 | 115.2 | 24 | 120.6 | 121.8 | 123.4 | 24 |
| 5/5 | 115.4 | 115.6 | 116.0 | 24 | 116.7 | 117.0 | 117.3 | 24 | 118.6 | 119.1 | 119.3 | 24 | 114.1 | 114.5 | 115.4 | 24 | 123.9 | 124.2 | 124.7 | 21 |
| 5/6 | 115.5 | 115.7 | 115.9 | 24 | 115.5 | 115.8 | 116.0 | 24 | 118.1 | 118.5 | 119.0 | 24 | 115.8 | 116.0 | 116.2 | 24 | 124.7 | 125.4 | 126.4 | 21 |
| 5/7 | 115.9 | 116.2 | 116.7 | 24 | 114.2 | 115.0 | 115.3 | 24 | 119.7 | 122.0 | 128.5 | 24 | 116.3 | 116.8 | 117.2 | 24 | 126.3 | 127.5 | 130.2 | 22 |
| 5/8 | 115.8 | 116.2 | 116.6 | 24 | 115.9 | 116.9 | 117.9 | 24 | 120.2 | 121.3 | 124.7 | 24 | 119.5 | 121.1 | 123.7 | 24 | 126.8 | 127.7 | 130.2 | 21 |
| 5/9 | 116.7 | 116.9 | 117.1 | 23 | 118.5 | 118.5 | 118.7 | 19 | 123.1 | 123.8 | 124.8 | 19 | 120.2 | 120.9 | 121.3 | 23 | 127.4 | 127.8 | 128.1 | 17 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

## Total Dissolved Gas Saturation at Mid Columbia River Sites

| | Rock Island | | | | Rock I. Tlwr | | | | Wanapum | | | | Wanapum Tlwr | | | | Priest Rapids | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 114.3 | 114.9 | 115.9 | 23 | 120.9 | 121.3 | 122.3 | 23 | 115.2 | 116.1 | 116.4 | 24 | 121.5 | 121.9 | 122.2 | 24 | 118.0 | 119.3 | 119.9 | 24 |
| 4/29 | 113.0 | 113.4 | 113.6 | 24 | 120.0 | 120.3 | 120.6 | 23 | 116.2 | 116.7 | 117.1 | 24 | 118.1 | 119.2 | 120.5 | 24 | 118.7 | 119.2 | 119.8 | 24 |
| 4/30 | 114.5 | 116.2 | 116.9 | 24 | 121.3 | 122.6 | 123.3 | 24 | 116.1 | 116.7 | 117.0 | 24 | 119.4 | 120.2 | 121.0 | 24 | 116.7 | 117.2 | 117.6 | 24 |
| 5/1 | 111.9 | 113.0 | 115.5 | 24 | 119.7 | 120.5 | 122.4 | 24 | 113.9 | 114.2 | 114.5 | 24 | 117.6 | 119.0 | 120.8 | 24 | 116.3 | 117.4 | 118.3 | 24 |
| 5/2 | 110.6 | 111.1 | 112.5 | 23 | 115.9 | 116.8 | 118.2 | 22 | 115.9 | 116.8 | 117.3 | 24 | 118.8 | 120.0 | 121.3 | 24 | 117.0 | 118.7 | 119.3 | 24 |
| 5/3 | 113.5 | 114.4 | 114.8 | 23 | 117.8 | 118.2 | 119.4 | 16 | 116.8 | 117.2 | 117.6 | 24 | 119.0 | 121.0 | 121.7 | 24 | 118.0 | 119.6 | 120.9 | 24 |
| 5/4 | 114.3 | 114.9 | 115.8 | 24 | 118.4 | 118.6 | 119.9 | 16 | 117.3 | 118.6 | 119.3 | 24 | 116.9 | 117.8 | 118.7 | 24 | 117.6 | 118.2 | 120.6 | 24 |
| 5/5 | 115.9 | 116.3 | 116.5 | 22 | 120.3 | 120.6 | 120.8 | 20 | 117.6 | 118.3 | 118.6 | 24 | 119.0 | 119.5 | 121.3 | 24 | 116.8 | 117.1 | 117.4 | 24 |
| 5/6 | 116.3 | 117.2 | 117.6 | 23 | 121.9 | 122.9 | 124.4 | 18 | 114.0 | 114.3 | 115.1 | 24 | 122.2 | 123.4 | 125.3 | 24 | 117.2 | 119.2 | 119.6 | 24 |
| 5/7 | 118.3 | 119.9 | 121.9 | 22 | 125.8 | 126.4 | 127.5 | 16 | 115.0 | 116.3 | 117.1 | 24 | 123.5 | 126.4 | 128.8 | 24 | 119.7 | 122.0 | 125.4 | 24 |
| 5/8 | 120.8 | 122.5 | 124.1 | 21 | 126.6 | 127.6 | 128.5 | 21 | 119.4 | 121.5 | 122.4 | 24 | 124.9 | 126.3 | 127.8 | 24 | 123.2 | 125.1 | 125.8 | 24 |
| 5/9 | 120.7 | 121.8 | 122.8 | 19 | 125.3 | 127.4 | 128.2 | 16 | 123.5 | 125.1 | 125.3 | 24 | 125.8 | 126.7 | 127.5 | 24 | 123.2 | 124.6 | 125.3 | 24 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

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

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

| | Priest R. Dnst | | | | Pasco | | | | Dworshak | | | | Clrwtr-Peck | | | | Anatone | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 119.3 | 120.0 | 120.3 | 24 | --- | --- | --- | 0 | 107.8 | 108.1 | 108.5 | 24 | 103.0 | 103.2 | 103.7 | 24 | 107.2 | 107.6 | 108.0 | 24 |
| 4/29 | 119.8 | 119.9 | 120.2 | 24 | --- | --- | --- | 0 | 108.1 | 108.7 | 109.1 | 24 | 103.2 | 103.9 | 104.3 | 24 | 107.2 | 108.0 | 108.6 | 24 |
| 4/30 | 118.8 | 119.1 | 119.3 | 24 | --- | --- | --- | 0 | 108.4 | 109.0 | 110.0 | 24 | 104.2 | 104.3 | 104.4 | 24 | 107.4 | 108.0 | 108.5 | 24 |
| 5/1 | 119.3 | 119.8 | 120.2 | 24 | --- | --- | --- | 0 | 101.2 | 101.8 | 106.0 | 24 | 101.8 | 102.3 | 103.9 | 24 | 107.3 | 107.7 | 108.2 | 24 |
| 5/2 | 118.5 | 119.1 | 119.7 | 24 | --- | --- | --- | 0 | 100.3 | 100.8 | 101.2 | 24 | 101.3 | 101.5 | 101.7 | 24 | 107.2 | 107.7 | 108.3 | 24 |
| 5/3 | 118.8 | 120.1 | 121.5 | 24 | --- | --- | --- | 0 | 100.7 | 101.3 | 101.8 | 24 | 102.1 | 103.0 | 103.9 | 24 | 105.7 | 106.4 | 107.1 | 23 |
| 5/4 | 120.5 | 121.3 | 121.7 | 24 | --- | --- | --- | 0 | 101.7 | 102.5 | 103.0 | 24 | 102.7 | 103.9 | 104.8 | 24 | 106.7 | 108.7 | 109.3 | 24 |
| 5/5 | 119.2 | 119.4 | 119.7 | 24 | --- | --- | --- | 0 | 102.3 | 102.7 | 103.3 | 24 | 101.8 | 102.2 | 102.9 | 24 | 107.0 | 107.4 | 107.8 | 24 |
| 5/6 | 120.0 | 120.4 | 120.8 | 24 | --- | --- | --- | 0 | 101.4 | 101.6 | 101.7 | 24 | 101.5 | 101.8 | 102.0 | 24 | 106.1 | 106.3 | 106.5 | 24 |
| 5/7 | 121.1 | 122.8 | 123.5 | 24 | --- | --- | --- | 0 | 101.1 | 101.4 | 102.1 | 24 | 102.1 | 102.6 | 102.9 | 24 | 107.5 | 108.2 | 108.6 | 24 |
| 5/8 | 122.0 | 122.8 | 123.5 | 24 | --- | --- | --- | 0 | 101.1 | 101.8 | 102.3 | 24 | 102.8 | 104.0 | 104.8 | 24 | 109.2 | 110.2 | 111.1 | 21 |
| 5/9 | 122.6 | 123.4 | 123.7 | 24 | --- | --- | --- | 0 | 101.6 | 102.2 | 102.8 | 23 | 102.7 | 103.6 | 104.4 | 23 | 109.9 | 110.5 | 110.9 | 23 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

### Total Dissolved Gas Saturation Data at Snake River Sites

| | Clrwtr-Lewiston | | | | Lower Granite | | | | L. Granite Tlwr | | | | Little Goose | | | | L. Goose Tlwr | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 101.2 | 101.8 | 102.2 | 24 | 104.4 | 104.7 | 104.9 | 24 | 118.0 | 118.3 | 118.5 | 24 | 112.8 | 113.3 | 114.2 | 24 | 116.3 | 116.5 | 116.6 | 24 |
| 4/29 | 102.4 | 103.8 | 104.7 | 24 | 105.4 | 106.1 | 106.8 | 24 | 115.9 | 117.0 | 117.8 | 24 | 113.2 | 113.8 | 114.7 | 24 | 116.3 | 116.4 | 116.5 | 24 |
| 4/30 | 102.6 | 103.4 | 104.4 | 24 | 106.8 | 107.0 | 107.1 | 24 | 117.0 | 117.0 | 117.1 | 24 | 114.0 | 114.4 | 114.8 | 24 | 115.7 | 116.0 | 116.2 | 24 |
| 5/1 | 101.3 | 101.9 | 102.4 | 24 | 106.3 | 106.4 | 106.7 | 24 | 115.9 | 116.6 | 116.8 | 24 | 111.3 | 111.7 | 112.7 | 24 | 118.8 | 121.4 | 122.0 | 24 |
| 5/2 | 101.0 | 101.8 | 102.6 | 23 | 105.9 | 106.1 | 106.2 | 24 | 117.7 | 121.2 | 122.1 | 24 | 112.6 | 113.2 | 113.3 | 24 | 120.5 | 121.6 | 121.9 | 24 |
| 5/3 | 102.1 | 103.7 | 104.8 | 24 | 106.0 | 106.2 | 106.4 | 24 | 115.0 | 117.4 | 120.2 | 24 | 113.0 | 113.1 | 113.2 | 24 | 119.6 | 120.3 | 121.5 | 24 |
| 5/4 | 103.2 | 104.8 | 105.9 | 24 | 107.5 | 108.0 | 108.6 | 23 | 111.6 | 112.7 | 115.4 | 24 | 114.9 | 117.0 | 120.0 | 23 | 119.3 | 119.8 | 120.0 | 23 |
| 5/5 | 101.6 | 102.0 | 102.5 | 24 | 108.2 | 108.8 | 109.0 | 24 | 117.6 | 120.4 | 121.2 | 24 | 118.1 | 119.8 | 120.6 | 24 | 122.9 | 124.9 | 125.3 | 24 |
| 5/6 | 100.6 | 100.9 | 101.1 | 24 | 105.5 | 106.4 | 107.3 | 24 | 123.6 | 125.8 | 128.0 | 24 | 110.1 | 111.1 | 112.2 | 24 | 126.4 | 127.2 | 128.1 | 24 |
| 5/7 | 101.6 | 102.3 | 102.8 | 24 | 104.1 | 104.4 | 104.7 | 24 | 126.9 | 127.6 | 127.7 | 24 | 111.3 | 113.2 | 114.5 | 24 | 127.7 | 127.9 | 128.2 | 24 |
| 5/8 | 102.3 | 103.6 | 104.5 | 24 | 105.7 | 106.7 | 107.1 | 24 | 125.8 | 126.9 | 127.0 | 24 | 117.4 | 119.2 | 120.2 | 24 | 128.1 | 128.5 | 128.8 | 24 |
| 5/9 | 102.7 | 103.6 | 104.5 | 23 | 107.9 | 108.9 | 109.3 | 23 | 125.9 | 126.5 | 127.2 | 23 | 120.1 | 120.6 | 121.1 | 23 | 127.9 | 128.1 | 128.3 | 23 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

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

| | Lower Mon. | | | | L. Mon. Tlwr | | | | Ice Harbor | | | | Ice Harbor Tlwr | | | | McNary-Oregon | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # | 24 h | 12 h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 115.8 | 116.2 | 116.6 | 24 | 119.8 | 120.4 | 121.2 | 24 | 114.3 | 114.7 | 115.1 | 24 | 119.8 | 120.2 | 120.6 | 24 | --- | --- | --- | 0 |
| 4/29 | 115.9 | 116.6 | 117.0 | 24 | 119.4 | 119.6 | 119.8 | 24 | 115.8 | 116.4 | 116.6 | 24 | 119.6 | 119.8 | 120.0 | 24 | --- | --- | --- | 0 |
| 4/30 | 116.1 | 116.7 | 117.0 | 24 | 119.2 | 119.4 | 119.7 | 24 | 116.0 | 116.3 | 116.6 | 24 | 119.7 | 119.9 | 120.0 | 24 | --- | --- | --- | 0 |
| 5/1 | 114.4 | 114.6 | 114.9 | 24 | 119.7 | 119.9 | 120.1 | 24 | 114.8 | 115.1 | 115.3 | 24 | 118.9 | 119.4 | 119.6 | 24 | --- | --- | --- | 0 |
| 5/2 | 117.0 | 119.4 | 122.8 | 24 | 119.9 | 120.6 | 121.6 | 24 | 115.5 | 115.9 | 116.3 | 24 | 119.5 | 120.1 | 121.1 | 24 | --- | --- | --- | 0 |
| 5/3 | 122.3 | 123.2 | 124.1 | 24 | 119.8 | 120.1 | 121.2 | 24 | 117.3 | 118.1 | 118.9 | 24 | 118.5 | 119.3 | 119.8 | 24 | --- | --- | --- | 0 |
| 5/4 | 124.3 | 124.6 | 125.3 | 24 | 119.8 | 120.1 | 121.4 | 24 | 119.9 | 120.7 | 121.3 | 24 | 118.4 | 118.9 | 119.4 | 24 | --- | --- | --- | 0 |
| 5/5 | 122.1 | 122.8 | 124.3 | 24 | 120.4 | 121.0 | 122.3 | 24 | 120.4 | 120.8 | 121.2 | 24 | 118.4 | 118.9 | 119.8 | 24 | --- | --- | --- | 0 |
| 5/6 | 121.2 | 123.0 | 124.3 | 24 | 121.5 | 122.5 | 124.7 | 24 | 117.1 | 117.7 | 119.0 | 24 | 120.4 | 121.5 | 122.7 | 24 | --- | --- | --- | 0 |
| 5/7 | 126.7 | 128.0 | 128.9 | 24 | 124.1 | 124.9 | 125.7 | 24 | 117.1 | 118.2 | 119.0 | 24 | 122.8 | 123.4 | 124.9 | 24 | --- | --- | --- | 0 |
| 5/8 | 129.9 | 130.8 | 131.8 | 24 | 125.8 | 127.0 | 127.8 | 24 | 121.1 | 122.2 | 123.3 | 24 | 125.7 | 126.2 | 126.8 | 24 | --- | --- | --- | 0 |
| 5/9 | 131.8 | 132.1 | 132.3 | 23 | 125.6 | 126.5 | 127.7 | 23 | 124.5 | 125.0 | 125.3 | 23 | 124.4 | 126.1 | 127.0 | 23 | --- | --- | --- | 0 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

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

**Total Dissolved Gas Saturation Data at Lower Columbia River Sites**

| | McNary-Wash | | | | McNary Tlwr | | | | John Day | | | | John Day Tlwr | | | | The Dalles | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24h | 12h | | # | 24h | 12h | | # | 24h | 12h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | AVG | High | hr |
| 4/28 | 110.7 | 112.0 | 113.2 | 24 | 120.2 | 120.5 | 120.7 | 24 | 108.9 | 109.2 | 109.6 | 24 | 120.9 | 121.7 | 122.1 | 24 | 110.7 | 111.4 | 112.1 | 24 |
| 4/29 | 113.5 | 114.5 | 114.9 | 24 | 120.5 | 120.8 | 121.0 | 24 | 109.1 | 109.4 | 109.5 | 24 | 122.4 | 124.3 | 124.6 | 24 | 111.7 | 112.5 | 113.3 | 24 |
| 4/30 | 114.0 | 114.6 | 114.8 | 24 | 119.8 | 120.1 | 120.2 | 24 | 109.7 | 109.9 | 110.1 | 24 | 119.5 | 119.8 | 120.3 | 24 | 111.1 | 111.9 | 112.9 | 24 |
| 5/1 | 112.2 | 112.7 | 113.2 | 24 | 120.0 | 120.6 | 121.1 | 24 | 111.2 | 112.0 | 112.3 | 24 | 119.8 | 120.0 | 121.2 | 24 | 111.9 | 113.1 | 113.7 | 24 |
| 5/2 | 113.4 | 114.0 | 114.6 | 24 | 120.2 | 120.9 | 121.4 | 24 | 113.2 | 113.8 | 114.1 | 24 | 121.0 | 122.1 | 122.4 | 24 | 113.8 | 114.6 | 115.4 | 24 |
| 5/3 | 115.7 | 117.1 | 118.7 | 24 | 120.4 | 120.7 | 121.1 | 24 | 113.8 | 114.2 | 115.0 | 24 | 120.8 | 121.2 | 122.6 | 24 | 115.4 | 116.1 | 116.4 | 24 |
| 5/4 | 118.2 | 118.8 | 119.4 | 24 | 120.6 | 121.0 | 121.4 | 24 | 117.2 | 118.7 | 119.7 | 24 | 120.3 | 120.5 | 120.7 | 24 | 116.6 | 117.6 | 118.3 | 24 |
| 5/5 | 116.6 | 116.9 | 117.1 | 24 | 121.2 | 121.6 | 121.8 | 24 | 118.7 | 119.0 | 119.4 | 24 | 121.6 | 121.9 | 122.3 | 24 | 115.6 | 116.7 | 118.2 | 24 |
| 5/6 | 113.8 | 114.8 | 115.6 | 24 | 123.6 | 124.0 | 124.3 | 24 | 115.7 | 116.3 | 117.6 | 24 | 126.2 | 127.8 | 131.9 | 24 | 114.1 | 114.8 | 115.1 | 24 |
| 5/7 | 112.7 | 114.0 | 115.0 | 24 | 127.9 | 129.0 | 129.1 | 24 | 114.0 | 114.2 | 114.4 | 24 | 132.8 | 133.5 | 134.9 | 24 | 117.2 | 119.1 | 120.0 | 24 |
| 5/8 | 116.0 | 117.1 | 117.5 | 24 | 127.9 | 128.8 | 129.0 | 24 | 115.2 | 116.9 | 118.8 | 24 | 135.5 | 136.0 | 136.7 | 24 | 120.2 | 122.0 | 123.5 | 24 |
| 5/9 | 119.1 | 120.4 | 120.9 | 23 | 130.1 | 130.5 | 130.7 | 23 | 121.2 | 123.1 | 125.1 | 23 | 133.4 | 134.5 | 136.3 | 23 | 122.6 | 123.8 | 125.7 | 23 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

**Total Dissolved Gas Saturation Data at Lower Columbia River Sites**

| | The Dalles Dnst | | | | Bonneville | | | | Warrendale | | | | Camas\Washougal | | | | Cascade Island | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 24 h | 12 h | | # | 24 h | 12 h | | # | 24h | 12h | | # | 24h | 12h | | # | 24h | 12h | | # |
| Date | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr | Avg | Avg | High | hr |
| 4/28 | 118.1 | 118.6 | 119.4 | 24 | 116.0 | 116.6 | 117.1 | 24 | 119.0 | 119.2 | 119.4 | 24 | 117.4 | 118.0 | 118.3 | 24 | 122.3 | 122.3 | 122.5 | 24 |
| 4/29 | 119.9 | 120.8 | 121.6 | 24 | 118.4 | 119.1 | 119.3 | 24 | 120.4 | 120.8 | 121.0 | 24 | 118.3 | 119.4 | 119.8 | 24 | 122.5 | 122.6 | 122.7 | 24 |
| 4/30 | 118.0 | 119.7 | 121.0 | 24 | 118.4 | 118.8 | 119.2 | 24 | 119.8 | 120.1 | 120.9 | 24 | 118.2 | 118.6 | 119.2 | 24 | 121.8 | 122.1 | 123.0 | 24 |
| 5/1 | 118.0 | 119.1 | 119.8 | 24 | 116.2 | 116.6 | 117.0 | 24 | 118.3 | 118.6 | 119.0 | 24 | 117.6 | 117.9 | 118.3 | 24 | 122.5 | 123.5 | 123.8 | 24 |
| 5/2 | 121.2 | 121.9 | 122.7 | 24 | 118.4 | 119.7 | 121.3 | 24 | 119.5 | 120.5 | 121.3 | 24 | 117.1 | 117.8 | 118.4 | 24 | 123.4 | 123.6 | 123.8 | 24 |
| 5/3 | 120.4 | 120.8 | 121.2 | 24 | 122.9 | 123.7 | 124.2 | 24 | 122.5 | 123.0 | 123.3 | 24 | 121.0 | 122.8 | 123.4 | 24 | 123.6 | 123.7 | 124.1 | 24 |
| 5/4 | 120.0 | 120.2 | 120.5 | 24 | 122.0 | 122.6 | 123.4 | 24 | 121.8 | 122.1 | 122.5 | 24 | 121.6 | 122.3 | 122.8 | 24 | 123.4 | 123.7 | 123.8 | 24 |
| 5/5 | 119.7 | 120.2 | 120.5 | 24 | 118.2 | 120.0 | 122.0 | 24 | 119.4 | 120.3 | 121.2 | 24 | 118.2 | 118.9 | 119.9 | 24 | 123.1 | 123.8 | 124.1 | 24 |
| 5/6 | 119.8 | 120.3 | 120.8 | 24 | 115.8 | 116.4 | 117.3 | 24 | 119.1 | 119.7 | 120.5 | 24 | 116.6 | 117.4 | 117.8 | 24 | 122.2 | 122.7 | 123.6 | 24 |
| 5/7 | 121.3 | 123.1 | 123.9 | 24 | 118.4 | 119.3 | 120.1 | 24 | 123.6 | 124.9 | 125.2 | 24 | 119.9 | 122.4 | 123.0 | 24 | 125.2 | 126.1 | 126.8 | 24 |
| 5/8 | 123.8 | 124.9 | 125.4 | 24 | 123.2 | 124.4 | 124.6 | 24 | 127.1 | 128.1 | 128.5 | 24 | 124.4 | 126.0 | 126.5 | 24 | 127.1 | 127.9 | 128.4 | 24 |
| 5/9 | 124.4 | 124.7 | 125.4 | 23 | 125.5 | 126.3 | 126.9 | 23 | 128.8 | 129.3 | 130.4 | 23 | 127.1 | 128.1 | 128.7 | 23 | 127.7 | 128.1 | 128.6 | 23 |
| 5/10 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |
| 5/11 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 | --- | --- | --- | 0 |

# Two-Week Summary of Passage Indices

Source: Fish Passage Center Updated: 5/12/2017 13:03

## Two-Week Summary of Passage Indices

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

| | | | | COMBINED YEARLING CHINOOK | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 04/28/2017 | * | 562 | 44 | 192 | --- | 181,837 | 224,169 | 136,972 | 2,164 | --- | 108,664 | 40,838 |
| 04/29/2017 | * | --- | 31 | 207 | --- | 200,838 | --- | --- | 2,316 | 91,172 | --- | 44,335 |
| 04/30/2017 | * | --- | 21 | 185 | --- | 175,160 | 155,933 | 104,211 | 2,334 | --- | 102,734 | 47,831 |
| 05/01/2017 | * | 107 | 36 | 69 | --- | 146,700 | --- | 23,217 | 1,386 | 112,618 | --- | 49,795 |
| 05/02/2017 | * | 102 | 26 | 96 | --- | 176,790 | 128,641 | 106,054 | 2,036 | --- | 128,108 | 45,110 |
| 05/03/2017 | * | 93 | 28 | 183 | --- | 95,525 | 99,481 | 111,670 | 1,950 | 136,957 | --- | 46,044 |
| 05/04/2017 | * | 157 | 46 | 92 | --- | 77,865 | 115,873 | 80,943 | 2,240 | --- | 83,027 | 92,604 |
| 05/05/2017 | * | 337 | 9 | 50 | --- | 70,293 | 167,006 | 70,863 | 1,582 | 114,753 | --- | 111,436 |
| 05/06/2017 | | --- | --- | 255 | --- | 141,389 | 73,330 | 145,195 | 2,854 | --- | 134,141 | 86,786 |
| 05/07/2017 | | --- | --- | 77 | --- | 180,492 | 56,332 | 139,119 | 1,566 | 103,362 | --- | 79,760 |
| 05/08/2017 | | --- | --- | 141 | --- | 167,341 | 31,626 | 140,403 | 2,205 | --- | 110,104 | 76,324 |
| 05/09/2017 | | --- | --- | 109 | --- | 156,104 | 15,395 | 191,408 | 1,374 | 128,994 | --- | 64,082 |
| 05/10/2017 | | --- | --- | 89 | --- | 104,669 | 21,920 | --- | 1,219 | --- | 101,558 | 62,020 |
| 05/11/2017 | | --- | --- | 83 | --- | 100,597 | 30,075 | --- | 1,599 | 94,010 | --- | 63,517 |
| 05/12/2017 | | --- | --- | 120 | --- | 93,468 | --- | --- | --- | --- | 129,693 | 51,917 |
| **Total:** | | **1,358** | **241** | **1,948** | **0** | **2,069,068** | **1,119,781** | **1,250,055** | **26,825** | **781,866** | **898,029** | **962,399** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **226** | **30** | **130** | **0** | **137,938** | **93,315** | **113,641** | **1,916** | **111,695** | **112,254** | **64,160** |
| **YTD** | | **33,704** | **22,090** | **19,654** | **8** | **3,767,638** | **1,969,889** | **1,872,462** | **39,842** | **1,126,099** | **1,194,558** | **1,503,613** |

| | | | | COMBINED SUBYEARLING CHINOOK | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 04/28/2017 | * | 0 | 0 | 0 | --- | 0 | 1 | 0 | 41 | --- | 635 | 297 |
| 04/29/2017 | * | --- | 0 | 0 | --- | 304 | --- | --- | 10 | 5,392 | --- | 149 |
| 04/30/2017 | * | --- | 0 | 0 | --- | 283 | 0 | 0 | 32 | --- | 649 | 209 |
| 05/01/2017 | * | 0 | 0 | 0 | --- | 0 | --- | 374 | 48 | 1,955 | --- | 1,431 |
| 05/02/2017 | * | 0 | 0 | 0 | --- | 267 | 0 | 0 | 27 | --- | 212 | 276 |
| 05/03/2017 | * | 0 | 0 | 0 | --- | 0 | 2 | 0 | 36 | 1,661 | --- | 870 |
| 05/04/2017 | * | 0 | 0 | 0 | --- | 268 | 2 | 375 | 22 | --- | 668 | 0 |
| 05/05/2017 | * | 0 | 0 | 0 | --- | 252 | 0 | 758 | 36 | 554 | --- | 267 |
| 05/06/2017 | | --- | --- | 0 | --- | 685 | 4 | 693 | 84 | --- | 0 | 1,177 |
| 05/07/2017 | | --- | --- | 0 | --- | 0 | 0 | 404 | 377 | 3,876 | --- | 1,115 |
| 05/08/2017 | | --- | --- | 0 | --- | 0 | 0 | 0 | 226 | --- | 987 | 391 |
| 05/09/2017 | | --- | --- | 0 | --- | 0 | 0 | 430 | 123 | 7,185 | --- | 354,390 |
| 05/10/2017 | | --- | --- | 0 | --- | 366 | 0 | --- | 44 | --- | 2,116 | 60,848 |
| 05/11/2017 | | --- | --- | 0 | --- | 364 | 10 | --- | 61 | 1,875 | --- | 8,841 |
| 05/12/2017 | | --- | --- | 2 | --- | 375 | --- | --- | --- | --- | 3,472 | 6,632 |
| **Total:** | | **0** | **0** | **2** | **0** | **3,164** | **19** | **3,034** | **1,167** | **22,498** | **8,739** | **436,893** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **0** | **0** | **0** | **0** | **211** | **2** | **276** | **83** | **3,214** | **1,092** | **29,126** |
| **YTD** | | **0** | **1** | **4** | **0** | **9,031** | **788** | **4,183** | **2,663** | **44,754** | **13,439** | **1,402,094** |

# Two-Week Summary of Passage Indices

| | | | | COMBINED COHO | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 04/28/2017 | * | 0 | 0 | 23 | --- | 2,569 | 1,192 | 347 | 78 | --- | 3,381 | 12,326 |
| 04/29/2017 | * | --- | 0 | 48 | --- | 1,217 | --- | --- | 38 | 1,471 | --- | 6,248 |
| 04/30/2017 | * | --- | 0 | 86 | --- | 1,698 | 0 | 361 | 70 | --- | 2,811 | 4,053 |
| 05/01/2017 | * | 0 | 0 | 43 | --- | 4,200 | --- | 0 | 64 | 2,444 | --- | 5,294 |
| 05/02/2017 | * | 0 | 0 | 22 | --- | 2,675 | 0 | 402 | 42 | --- | 4,242 | 8,891 |
| 05/03/2017 | * | 0 | 0 | 37 | --- | 2,171 | 888 | 845 | 103 | 554 | --- | 5,246 |
| 05/04/2017 | * | 0 | 0 | 28 | --- | 268 | 0 | 375 | 114 | --- | 6,010 | 7,416 |
| 05/05/2017 | * | 0 | 0 | 17 | --- | 503 | 3,923 | 379 | 200 | 2,772 | --- | 13,284 |
| 05/06/2017 | | --- | --- | 115 | --- | 1,027 | 1,492 | 693 | 733 | --- | 3,494 | 7,061 |
| 05/07/2017 | | --- | --- | 37 | --- | 3,282 | 935 | 404 | 349 | 1,938 | --- | 8,040 |
| 05/08/2017 | | --- | --- | 42 | --- | 2,693 | 0 | 443 | 828 | --- | 5,431 | 6,654 |
| 05/09/2017 | | --- | --- | 60 | --- | 5,602 | 1,011 | 2,581 | 434 | 3,919 | --- | 4,498 |
| 05/10/2017 | | --- | --- | 40 | --- | 8,417 | 999 | --- | 563 | --- | 3,173 | 5,096 |
| 05/11/2017 | | --- | --- | 70 | --- | 9,112 | 2,488 | --- | 1,046 | 4,374 | --- | 4,871 |
| 05/12/2017 | | --- | --- | 61 | --- | 9,750 | --- | --- | --- | --- | 4,465 | 5,870 |
| **Total:** | | **0** | **0** | **729** | **0** | **55,184** | **12,928** | **6,830** | **4,662** | **17,472** | **33,007** | **104,848** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **0** | **0** | **49** | **0** | **3,679** | **1,077** | **621** | **333** | **2,496** | **4,126** | **6,990** |
| **YTD** | | **0** | **0** | **1,632** | **0** | **63,639** | **16,440** | **7,452** | **5,145** | **21,583** | **34,786** | **275,155** |

| | | | | COMBINED STEELHEAD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 04/28/2017 | * | 341 | 253 | 83 | --- | 137,863 | 218,670 | 144,596 | 120 | --- | 127,691 | 8,910 |
| 04/29/2017 | * | --- | 347 | 215 | --- | 105,897 | --- | --- | 112 | 41,665 | --- | 8,778 |
| 04/30/2017 | * | --- | 431 | 115 | --- | 72,724 | 82,555 | 101,327 | 150 | --- | 116,791 | 8,440 |
| 05/01/2017 | * | 207 | 567 | 29 | --- | 75,300 | --- | 23,217 | 159 | 26,943 | --- | 13,021 |
| 05/02/2017 | * | 220 | 512 | 25 | --- | 47,073 | 56,535 | 84,763 | 261 | --- | 108,595 | 10,873 |
| 05/03/2017 | * | 280 | 396 | 202 | --- | 34,736 | 41,532 | 81,243 | 270 | 28,845 | --- | 9,918 |
| 05/04/2017 | * | 251 | 390 | 288 | --- | 50,572 | 34,170 | 63,705 | 489 | --- | 84,364 | 10,077 |
| 05/05/2017 | * | 394 | 676 | 70 | --- | 55,196 | 30,452 | 35,242 | 849 | 37,144 | --- | 11,324 |
| 05/06/2017 | | --- | --- | 193 | --- | 86,271 | 40,301 | 48,167 | 1,832 | --- | 79,087 | 15,298 |
| 05/07/2017 | | --- | --- | 180 | --- | 118,960 | 18,712 | 52,978 | 2,254 | 20,672 | --- | 8,108 |
| 05/08/2017 | | --- | --- | 44 | --- | 225,045 | 24,410 | 95,226 | 2,896 | --- | 73,074 | 10,568 |
| 05/09/2017 | | --- | --- | 27 | --- | 217,725 | 40,816 | 195,709 | 1,598 | 15,046 | --- | 7,151 |
| 05/10/2017 | | --- | --- | 48 | --- | 146,391 | 42,544 | --- | 1,253 | --- | 65,853 | 5,272 |
| 05/11/2017 | | --- | --- | 76 | --- | 94,765 | 29,866 | --- | 1,116 | 17,536 | --- | 2,733 |
| 05/12/2017 | | --- | --- | 76 | --- | 71,346 | --- | --- | --- | --- | 61,748 | 7,401 |
| **Total:** | | **1,693** | **3,572** | **1,671** | **0** | **1,539,864** | **660,563** | **926,173** | **13,359** | **187,851** | **717,203** | **137,872** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **282** | **447** | **111** | **0** | **102,658** | **55,047** | **84,198** | **954** | **26,836** | **89,650** | **9,191** |
| **YTD** | | **7,117** | **14,111** | **6,422** | **1** | **3,568,463** | **1,464,891** | **1,664,396** | **13,993** | **363,191** | **1,003,507** | **183,966** |

# Two-Week Summary of Passage Indices

| | | | | COMBINED SOCKEYE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) | (INDEX) |
| 04/28/2017 | * | 5 | 0 | 0 | --- | 642 | 9 | 0 | 80 | --- | 4,651 | 1,634 |
| 04/29/2017 | * | --- | 0 | 0 | --- | 1,522 | --- | --- | 62 | 4,902 | --- | 1,934 |
| 04/30/2017 | * | --- | 0 | 0 | --- | 566 | 587 | 1,442 | 88 | --- | 5,623 | 2,032 |
| 05/01/2017 | * | 0 | 0 | 0 | --- | 300 | --- | 374 | 26 | 7,821 | --- | 2,146 |
| 05/02/2017 | * | 0 | 0 | 0 | --- | 267 | 0 | 402 | 12 | --- | 6,363 | 1,015 |
| 05/03/2017 | * | 0 | 0 | 0 | --- | 724 | 22 | 423 | 41 | 6,643 | --- | 2,042 |
| 05/04/2017 | * | 0 | 0 | 0 | --- | 0 | 19 | 1,874 | 53 | --- | 3,562 | 5,325 |
| 05/05/2017 | * | 0 | 0 | 0 | --- | 252 | 47 | 379 | 113 | 4,435 | --- | 4,279 |
| 05/06/2017 | | --- | --- | 0 | --- | 1,027 | 41 | 347 | 159 | --- | 5,461 | 4,119 |
| 05/07/2017 | | --- | --- | 0 | --- | 0 | 33 | 404 | 304 | 6,460 | --- | 3,581 |
| 05/08/2017 | | --- | --- | 0 | --- | 385 | 20 | 0 | 443 | --- | 7,407 | 1,957 |
| 05/09/2017 | | --- | --- | 0 | --- | 747 | 1,066 | 430 | 891 | 5,225 | --- | 981 |
| 05/10/2017 | | --- | --- | 0 | --- | 3,294 | 49 | --- | 1,040 | --- | 3,703 | 3,632 |
| 05/11/2017 | | --- | --- | 0 | --- | 4,374 | 597 | --- | 628 | 14,371 | --- | 2,436 |
| 05/12/2017 | | --- | --- | 0 | --- | 3,375 | --- | --- | --- | --- | 8,928 | 4,336 |
| **Total:** | | **5** | **0** | **0** | **0** | **17,475** | **2,490** | **6,075** | **3,940** | **49,857** | **45,698** | **41,449** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **1** | **0** | **0** | **0** | **1,165** | **208** | **552** | **281** | **7,122** | **5,712** | **2,763** |
| **YTD** | | **6** | **0** | **0** | **0** | **41,764** | **6,768** | **12,598** | **5,530** | **66,236** | **51,010** | **60,544** |

| | | | | COMBINED LAMPREY JUVENILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WTB | IMN | GRN | LEW | LGR† | LGS | LMN | RIS | MCN | JDA | BO2 |
| Date | | (Coll) | (Coll) | (Coll) | (Coll) | (Samp) | (Coll) | (Coll) | (Coll) | (Coll) | (Coll) | (Coll) |
| 04/28/2017 | * | 0 | 0 | 0 | --- | 0 | 0 | 0 | 0 | --- | 857 | 100 |
| 04/29/2017 | * | --- | 0 | 0 | --- | 0 | --- | --- | 0 | 1,400 | --- | 50 |
| 04/30/2017 | * | --- | 0 | 0 | --- | 0 | 0 | 0 | 1 | --- | 1,142 | 0 |
| 05/01/2017 | * | 0 | 0 | 0 | --- | 0 | --- | 0 | 0 | 600 | --- | 0 |
| 05/02/2017 | * | 0 | 0 | 0 | --- | 0 | 0 | 0 | 1 | --- | 715 | 100 |
| 05/03/2017 | * | 0 | 0 | 0 | --- | 0 | 0 | 0 | 0 | 1,200 | --- | 0 |
| 05/04/2017 | * | 0 | 0 | 0 | --- | 0 | 400 | 0 | 0 | --- | 143 | 0 |
| 05/05/2017 | * | 0 | 1 | 0 | --- | 0 | 0 | 0 | 0 | 0 | --- | 0 |
| 05/06/2017 | | --- | --- | 0 | --- | 0 | 0 | 0 | 1 | --- | 286 | 0 |
| 05/07/2017 | | --- | --- | 0 | --- | 0 | 0 | 0 | 0 | 0 | --- | 0 |
| 05/08/2017 | | --- | --- | 0 | --- | 0 | 0 | 0 | 6 | --- | 429 | 100 |
| 05/09/2017 | | --- | --- | 0 | --- | 5 | 0 | 0 | 1 | 400 | --- | 0 |
| 05/10/2017 | | --- | --- | 0 | --- | 8 | 0 | --- | 1 | --- | 715 | 0 |
| 05/11/2017 | | --- | --- | 0 | --- | 7 | 0 | --- | 1 | 200 | --- | 0 |
| 05/12/2017 | | --- | --- | 0 | --- | 1 | --- | --- | --- | --- | 858 | 67 |
| **Total:** | | **0** | **1** | **0** | **0** | **21** | **400** | **0** | **12** | **3,800** | **5,145** | **417** |
| **# Days:** | | **6** | **8** | **15** | **0** | **15** | **12** | **11** | **14** | **7** | **8** | **15** |
| **Average:** | | **0** | **0** | **0** | **0** | **1** | **33** | **0** | **1** | **543** | **643** | **28** |
| **YTD** | | **0** | **2** | **4** | **0** | **34** | **1,600** | **0** | **24** | **7,080** | **17,056** | **33,984** |

# Two-Week Summary of Passage Indices

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

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's,) subyearling chinook (chinook 0's), steelhead, coho, sockeye, and lamprey juveniles.
Three classes of fish counts are shown in these tables:
Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details †.
Collection counts (Coll), which account for sample rates but are not adjusted for flow;
Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.
Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.
The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.
Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, pacific lamprey macropthalmia, and unidentified lamprey species.
† In 2013 it was confirmed that juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection. Therefore, only sample counts are provided in this report.

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

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

# Two Week Transportation Summary

Source: Fish Passage Center Updated: 5/12/17 1:10 PM

**04/28/17 TO 05/12/17**

| | | Species | | | | | |
|---|---|---|---|---|---|---|---|
| Site | Data | **CH0** | **CH1** | CO | ST | SO | **Grand Total** |
| **LGR** | Sum of NumberCollected | 2,000 | 1,269,339 | 31,600 | 905,161 | 10,000 | 2,218,100 |
| | Sum of NumberBarged | 1,591 | 809,141 | 25,520 | 643,216 | 7,962 | 1,487,430 |
| | Sum of NumberBypassed | 405 | 458,290 | 6,063 | 261,856 | 1,975 | 728,589 |
| | Sum of Numbertrucked | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | 0 | 47 | 2 | 15 | 0 | 64 |
| | Sum of FacilityMorts | 4 | 1,861 | 15 | 74 | 63 | 2,017 |
| | Sum of ResearchMorts | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | 4 | 1,908 | 17 | 89 | 63 | 2,081 |
| **LGS** | Sum of NumberCollected | | 562,494 | 4,715 | 325,568 | 817 | 893,594 |
| | Sum of NumberBarged | | 301,321 | 3,898 | 121,899 | 280 | 427,398 |
| | Sum of NumberBypassed | | 257,272 | 800 | 203,530 | 400 | 462,002 |
| | Sum of Numbertrucked | | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | | 13 | 0 | 3 | 0 | 16 |
| | Sum of FacilityMorts | | 3,888 | 17 | 136 | 137 | 4,178 |
| | Sum of ResearchMorts | | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | | 3,901 | 17 | 139 | 137 | 4,194 |
| **LMN** | Sum of NumberCollected | 1,600 | 640,500 | 3,400 | 473,300 | 3,200 | 1,122,000 |
| | Sum of NumberBarged | 1,600 | 466,026 | 3,000 | 309,315 | 2,346 | 782,287 |
| | Sum of NumberBypassed | 0 | 136,848 | 400 | 139,646 | 800 | 277,694 |
| | Sum of Numbertrucked | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | 0 | 16 | 0 | 7 | 0 | 23 |
| | Sum of FacilityMorts | 0 | 543 | 0 | 154 | 54 | 751 |
| | Sum of ResearchMorts | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | 0 | 559 | 0 | 161 | 54 | 774 |
| Total Sum of NumberCollected | | 3,600 | 2,472,333 | 39,715 | 1,704,029 | 14,017 | 4,233,694 |
| Total Sum of NumberBarged | | 3,191 | 1,576,488 | 32,418 | 1,074,430 | 10,588 | 2,697,115 |
| Total Sum of NumberBypassed | | 405 | 852,410 | 7,263 | 605,032 | 3,175 | 1,468,285 |
| Total Sum of Numbertrucked | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Sum of SampleMorts | | 0 | 76 | 2 | 25 | 0 | 103 |
| Total Sum of FacilityMorts | | 4 | 6,292 | 32 | 364 | 254 | 6,946 |
| Total Sum of ResearchMorts | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Sum of TotalProjectMorts | | 4 | 6,368 | 34 | 389 | 254 | 7,049 |

# YTD Transportation Summary

Source: Fish Passage Center Updated: 5/12/17 1:10 PM

**TO: 05/12/17**

| | | Species | | | | | |
|---|---|---|---|---|---|---|---|
| Site | Data | **CH0** | **CH1** | CO | SO | ST | **Grand Total** |
| **LGR** | Sum of NumberCollected | 5,258 | 2,229,763 | 36,400 | 24,094 | 2,036,294 | 4,331,809 |
| | Sum of NumberBarged | 1,718 | 850,810 | 25,650 | 8,432 | 677,315 | 1,563,925 |
| | Sum of NumberBypassed | 3,529 | 1,376,872 | 10,731 | 15,566 | 1,358,855 | 2,765,553 |
| | Sum of NumberTrucked | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | 5 | 82 | 2 | 7 | 45 | 141 |
| | Sum of FacilityMorts | 6 | 1,999 | 17 | 89 | 79 | 2,190 |
| | Sum of ResearchMorts | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | 11 | 2,081 | 19 | 96 | 124 | 2,331 |
| **LGS** | Sum of NumberCollected | 507 | 1,142,938 | 7,116 | 3,753 | 873,611 | 2,027,925 |
| | Sum of NumberBarged | 0 | 301,321 | 3,898 | 280 | 121,899 | 427,398 |
| | Sum of NumberBypassed | 500 | 837,161 | 3,200 | 3,296 | 751,526 | 1,595,683 |
| | Sum of NumberTrucked | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | 0 | 20 | 0 | 3 | 6 | 29 |
| | Sum of FacilityMorts | 7 | 4,436 | 18 | 174 | 180 | 4,815 |
| | Sum of ResearchMorts | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | 7 | 4,456 | 18 | 177 | 186 | 4,844 |
| **LMN** | Sum of NumberCollected | 2,200 | 993,155 | 3,800 | 7,000 | 893,745 | 1,899,900 |
| | Sum of NumberBarged | 1,600 | 466,026 | 3,000 | 2,346 | 309,315 | 782,287 |
| | Sum of NumberBypassed | 600 | 489,493 | 800 | 4,597 | 560,084 | 1,055,574 |
| | Sum of NumberTrucked | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of SampleMorts | 0 | 26 | 0 | 3 | 14 | 43 |
| | Sum of FacilityMorts | 0 | 543 | 0 | 54 | 154 | 751 |
| | Sum of ResearchMorts | 0 | 0 | 0 | 0 | 0 | 0 |
| | Sum of TotalProjectMorts | 0 | 569 | 0 | 57 | 168 | 794 |
| Total Sum of NumberCollected | | 7,965 | 4,365,856 | 47,316 | 34,847 | 3,803,650 | 8,259,634 |
| Total Sum of NumberBarged | | 3,318 | 1,618,157 | 32,548 | 11,058 | 1,108,529 | 2,773,610 |
| Total Sum of NumberBypassed | | 4,629 | 2,703,526 | 14,731 | 23,459 | 2,670,465 | 5,416,810 |
| Total Sum of NumberTrucked | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Sum of SampleMorts | | 5 | 128 | 2 | 13 | 65 | 213 |
| Total Sum of FacilityMorts | | 13 | 6,978 | 35 | 317 | 413 | 7,756 |
| Total Sum of ResearchMorts | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Sum of TotalProjectMorts | | 18 | 7,106 | 37 | 330 | 478 | 7,969 |

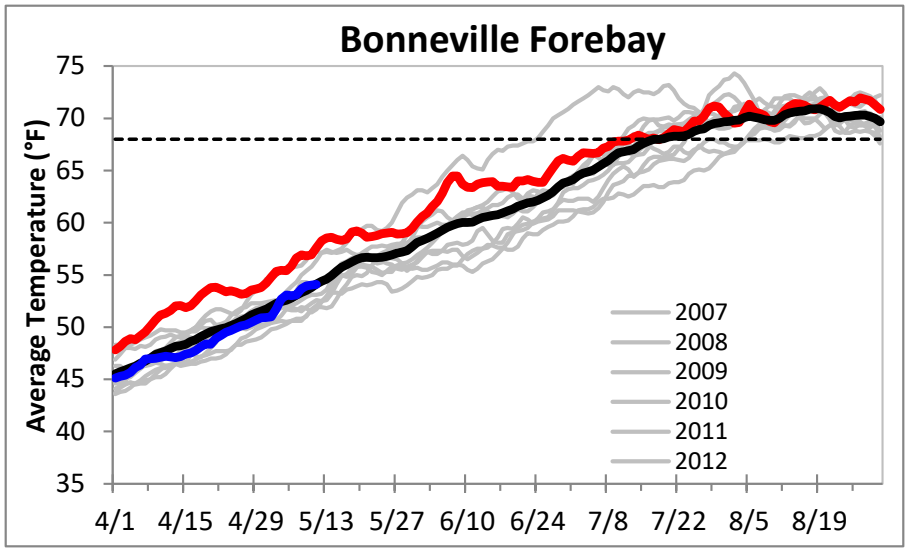
## Cumulative Adult Passage at Mainstem Dams Through: 05/11

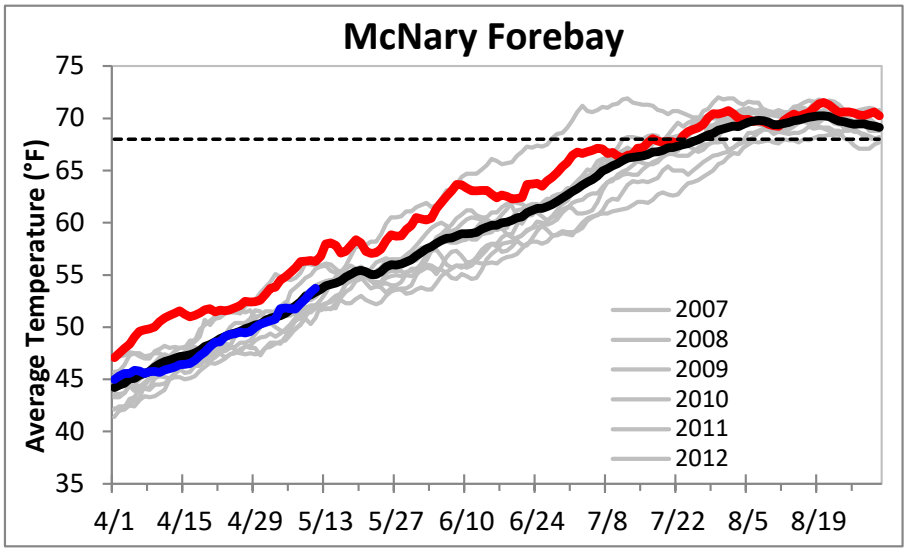
| | | Spring Chinook | | | | | | Summer Chinook | | | | | | Fall Chinook | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2017 | | 2016 | | 10-Yr Avg. | | 2017 | | 2016 | | 10-Yr Avg. | | 2017 | | 2016 | | 10-Yr Avg. | |
| dam | enddate | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack | Adult | Jack |
| BON | 05/11 | 27489 | 1289 | 99493 | 4976 | 111644 | 10275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TDA | 05/11 | 12427 | 707 | 67968 | 3978 | 78541 | 7035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| JDA | 05/11 | 7542 | 493 | 59301 | 2686 | 63107 | 5346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MCN | 05/10 | 1844 | 69 | 42728 | 1651 | 44750 | 2125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| IHR | 05/11 | 1134 | 31 | 32585 | 1027 | 32972 | 1457 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LMN | 05/11 | 607 | 19 | 29500 | 1110 | 27805 | 1139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LGS | 05/11 | 181 | 9 | 22426 | 1046 | 21141 | 901 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LGR | 05/11 | 118 | 2 | 16916 | 440 | 17184 | 505 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRD | 05/10 | 74 | 0 | 4688 | 32 | 5634 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WAN | 05/10 | 47 | 0 | 3402 | 12 | 4499 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RIS | 05/10 | 23 | 0 | 1735 | 0 | 3527 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RRH | 05/10 | 9 | 0 | 429 | 1 | 1028 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WEL | 05/10 | 3 | 0 | 101 | 0 | 507 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WFA | 05/10 | 3168 | 142 | 9455 | 255 | 11838 | 248 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

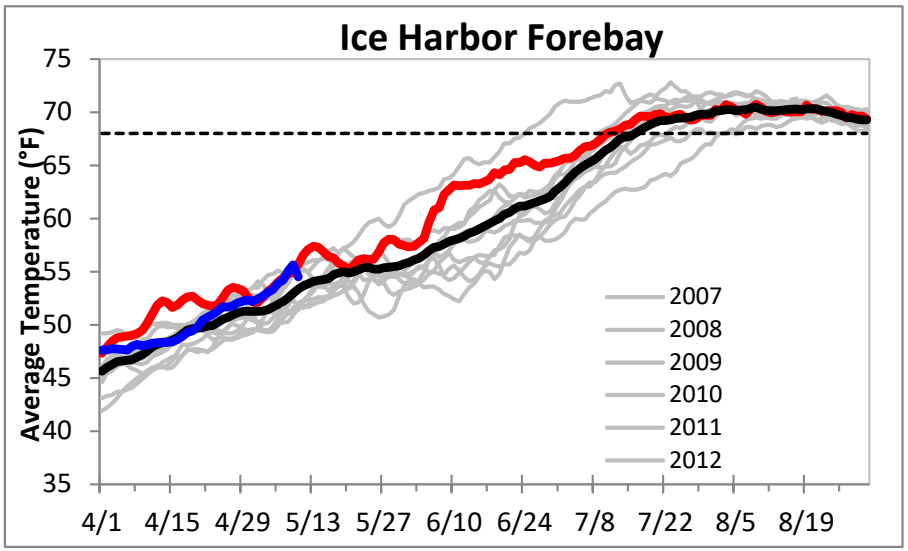
| | | Coho | | | | | | Sockeye | | | Steelhead | | | | | | Lamprey | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2017 | | 2016 | | 10-Yr Avg. | | | | 10-Yr | | | 10-Yr | Unclipped | Unclipped | 10-Yr | | | 10-Yr |
| DAM | ENDDATE | Adult | Jack | Adult | Jack | Adult | Jack | 2017 | 2016 | Avg. | 2017 | 2016 | Avg. | 2017 | 2016 | Avg. | 2017 | 2016 | Avg. |
| BON | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2653 | 4114 | 4189 | 910 | 1660 | 1401 | 54 | 547 | 67 |
| TDA | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1236 | 306 | 2507 | 424 | 170 | 1049 | 0 | 0 | 0 |
| JDA | 05/11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 511 | 358 | 4966 | 332 | 246 | 2012 | 3 | 268 | 23 |
| MCN | 05/10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2533 | 474 | 6342 | 758 | 309 | 2103 | 2 | 4 | 2 |
| IHR | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1045 | 1324 | 5492 | 494 | 699 | 1545 | -1 | 1 | 0 |
| LMN | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1395 | 1404 | 8123 | 676 | 976 | 2763 | 0 | 0 | 0 |
| LGS | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1410 | 3379 | 4951 | 641 | 1951 | 2482 | 0 | 0 | 0 |
| LGR | 05/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7244 | 5437 | 8908 | 3004 | 3090 | 3498 | 0 | -1 | 0 |
| PRD | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 13 | 35 | 0 | 0 | 0 | 0 | 46 | 2 |
| WAN | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 16 | 78 | 0 | 0 | 0 | 1 | 12 | 0 |
| RIS | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 41 | 31 | 97 | 12 | 15 | 51 | 0 | 0 | 0 |
| RRH | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 70 | 269 | 22 | 21 | 183 | 0 | 0 | 0 |
| WEL | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 36 | 37 | 13 | 12 | 24 | 0 | 1 | 0 |
| WFA | 05/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 769 | 8244 | 8361 | 0 | 0 | 0 | 0 | 0 | 0 |

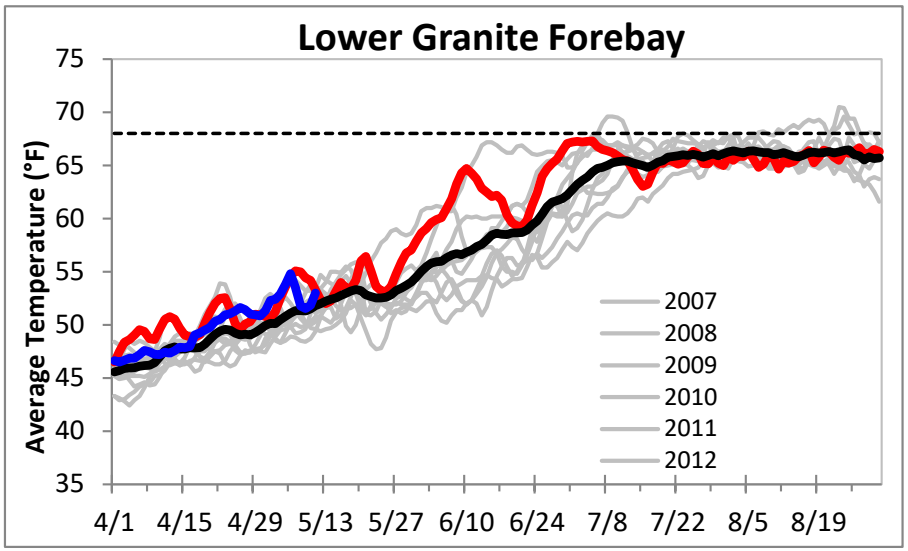
PRD does not post wild steelhead numbers.
These numbers were collected from USACE, Grant PUD, Douglas PUD, Chelan PUD, ODFW and DART.
Wild steelhead numbers are included in the total. Wild Steelhead are defined as unclipped fish.
Historic counts (pre-1996) were obtained from CRITFC and compiled by the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

Page last updated on: 05/12/17


Bonneville Forebay
Average Temperature (°F)
75
70
65
60
55
50
45
40
35
4/1 4/15 4/29 5/13 5/27 6/10 6/24 7/8 7/22 8/5 8/19
2007
2008
2009
2010
2011
2012


McNary Forebay
Average Temperature (°F)
75
70
65
60
55
50
45
40
35
4/1 4/15 4/29 5/13 5/27 6/10 6/24 7/8 7/22 8/5 8/19
2007
2008
2009
2010
2011
2012


Ice Harbor Forebay
Average Temperature (°F)
75
70
65
60
55
50
45
40
35
4/1 4/15 4/29 5/13 5/27 6/10 6/24 7/8 7/22 8/5 8/19
2007
2008
2009
2010
2011
2012


Lower Granite Forebay
Average Temperature (°F)
75
70
65
60
55
50
45
40
35
4/1 4/15 4/29 5/13 5/27 6/10 6/24 7/8 7/22 8/5 8/19
2007
2008
2009
2010
2011
2012