



Fish Passage Center

Weekly Report #17-11

May 19, 2017

This Week's Highlights

River Conditions

Flows in the Snake River have remained steady over the past week at Lower Granite (on average), relative to the week prior. Hells Canyon Complex flows are decreasing, with outflows at Hells Canyon decreasing from 50.9 to 43.0 Kcfs over the last four days. Flows at Hells Canyon are expected to be around 40 Kcfs over the next 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 May 14th, 2017): Units 3, 7, 8, 16 Out of Service.
2. The Dalles Dam (as of May 14, 2017): Units 2, 12, 15, 16, 19, 21 Out of Service
3. John Day Dam (as of May 19, 2017): Units 2, 3, 5, 6, Out of Service.
4. McNary Dam (as of May 11, 2017): Units 2, 13 Out of Service.
5. Ice Harbor Dam (as of May 11, 2017): Units 2 and 4 Out of Service.
6. Lower Monumental Dam (as of May 11, 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 May 11, 2017): Units 1, 2, 3, 5 out of Service.

8. Lower Granite Dam (as of May 11, 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 19) in the Columbia River for basins above the Snake River confluence is 138% of average, for Snake River Basins the average snowpack is 191% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 314% of average.

Table 2 displays the May 18th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 18th ESP forecast at The Dalles between April and August is 112,636 Kaf (129% of average).

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

Location	May 18, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	129	112,636
Grand Coulee (Apr-Aug)	122	69,024
Libby Res. Inflow, MT (Apr-Aug)	126 139*	7,413 8,190*
Hungry Horse Res. Inflow, MT (Apr-Aug)	124	2,401
Lower Granite Res. Inflow (Apr- July)	146	29,016
Brownlee Res. Inflow (Apr-July)	199	10,871
Dworshak Res. Inflow (Apr-July)	120 121*	2,897 2,941*

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,241.1 feet (5-18-17) and has refilled 3.8 feet over the last week. Outflows at Grand Coulee have ranged between 177.6 Kcfs and 235.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,378.6 feet (5-18-17) and has refilled 7.6 feet over the past week. Daily average outflows at Libby Dam have been increased to 24.2 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,534.5 feet (5-18-17) and has filled 1.7 feet last week. Outflows at Hungry Horse have been 10.2 Kcfs over the last week.

Dworshak is currently at an elevation of 1,558.1 feet (5-18-17) and has refilled 9.3 feet over the last week. Dworshak outflows over the last week were 5.9 Kcfs to 6.4 Kcfs.

The Brownlee Reservoir was at an elevation of 2,040.2 feet on May 18, 2017, and refilled 10.9 feet last week. Outflows at Hells Canyon have ranged between 4.0 and 50.9 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 5th, 2017), the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 159.1 Kcfs last week and 139.6 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 428.0 Kcfs and 269.5 Kcfs at Priest Rapids. Over the spring season, flows at McNary Dam were 377.7 Kcfs and Priest Rapids Dam flows were 231.4 Kcfs.

Spill

Flows in the Snake River have decreased 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 6.3 Kcfs, with approximately 1.8 Kcfs spill. Hells Canyon Complex flows have decreased but still remain relatively high, with outflows at Hells Canyon ranging between 43.3 and 51.5 Kcfs over the last four days. Current outflow projections show flow decreasing for a few days, then increasing again in both the Snake River and Lower Columbia as seasonal runoff continues.

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 and turbine unit outages, 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 91 Kcfs. At Little Goose Dam four units were out of service this past week severely limiting the hydraulic capacity at the project. Two of the four units have been returned to service increasing the hydraulic capacity. The Biological Opinion spill is 30% of flow but, as a consequence of the increasing flow and the unit outages, spill ranged from 42% to 75% of average daily flow. Spill at Lower Monumental Dam exceeded the 120% gas cap level every day last week and ranged from 59 to 106 Kcfs. At Ice Harbor spill ranged from 80 Kcfs to 128 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 67% of daily average flow. At John Day Dam spill averaged between 38 and 44% of average daily flow. At The Dalles Dam spill ranged from 52 to 67% of average daily flow. Bonneville Dam spill was 229 to 253 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 been near 107%. TDG supersaturation at the Lower Granite Dam forebay monitor has ranged between 105% and 109% over the past week.

The present uncontrolled spill due to unit outages, flood control operations and snowmelt has remained high over the last week, with TDG supersaturation levels 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 118% to 130% at Lower Granite Dam; 121% to 130% at Little Goose Dam; 122% to 128% at Lower Monumental Dam; and, 120 to 131% at Ice Harbor Dam. TDG supersaturation levels have also been high at the Middle Columbia projects, ranging from 124% to 130% at the tailwater of McNary Dam; 130% to 134% below John Day Dam; 120% to 124% at The Dalles Dam; and, 125% to 127% 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 (122% in the forebay of Wells Dam). TDG downstream of Wells Dam also increased last week, near 126% in the tailraces of Rocky Reach and Rock Island dams. TDG was near 131% in the tailrace of Wanapum and 125% 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 the 5/18/17 sample showed 3% of fish with Rank 1 signs of GBT. At Little Goose Dam 5% of fish were detected with signs of GBT in the exam conducted on 5/15/17 (4% with Rank 1, 1% with Rank 2 signs. At Lower Monumental Dam, 10% of fish examined were detected with signs of GBT on 5/17/17. Most of the signs were Rank 1, but 2% of the fish examined displayed severe signs (Rank 3 or greater) of GBT.

At Bonneville Dam 6% of the sample on 5/13/17 was observed with Rank 1 levels of GBT in their fins; the sample on 5/16/17 at Bonneville showed 1% of sample at Rank 1. At McNary Dam 1% of fish showed signs of GBT on exams taken on 5/14/17 or 5/16/17. The observed signs of GBT are presently below the action criteria that would be in place during the voluntary spill for fish passage program. At Rock Island Dam, the GBT exams on 5/16/17 and 5/18/17 showed 21% and 30% of fish with signs of GBT (all at Rank 1 or Rank 2), respectively. 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 and Imnaha river traps continued this week. Due to high flows and debris loads, sampling at the Snake and Salmon river traps has ended for the

2017 season.

This week's samples at Bonneville Dam (BON) were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook at BON was nearly 40,000 per day, which is a decrease from last week's daily average passage index of about 78,000 per day. Subyearling Chinook passage decreased substantially this week, when compared to last week. This week's daily average passage index for subyearling Chinook was about 3,000 per day, whereas that for last week was 61,000 per day. This decrease is due to the fact that subyearling fall Chinook from Spring Creek NFH moved quickly through the system and were mostly past BON by May 12th. Coho and steelhead passage also decreased this week when compared to last week. This week's daily average passage indices were about 4,100 and 6,600 per day, respectively. Last week's daily average passage indices were 7,100 for coho and 8,600 for steelhead. Sockeye passage increased this week, when compared to the previous week. This week's daily average passage index was 6,000, whereas that for last week was about 3,000 per day. Finally, Pacific lamprey macrophthalmia were encountered in six of this week's samples while no Pacific lamprey ammocoetes were encountered in this week's collections. This week's daily average collection for lamprey macrophthalmia was 85 per day, which is an increase over the previous week's daily average collection of just 14 per day.

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. This week's daily average passage index for yearling Chinook was nearly 124,000 per day. This is an increase over last week's daily average passage index of about 115,000 per day. Subyearling Chinook, coho, and sockeye passage also increased this week, when compared to last week. This week's daily average passage indices for these three species were 3,500, 5,850, and 12,300 per day, respectively. Last week's daily average passage indices were 1,000 for subyearling Chinook, 4,000 for coho, and 5,500 for sockeye. Unlike previous weeks, a portion (~17%) of the subyearling Chinook that were collected at JDA this week were not fry. Steelhead passage decreased this week, when compared to last week. This week's daily average passage index for steelhead was about 62,000 per day, whereas that for last week was nearly 73,000

per day. Finally, both Pacific lamprey ammocoetes and macrophthalmia were encountered in all four of this week's samples. This week's daily average collection for Pacific ammocoetes was about 360 per day, while that for macrophthalmia was about 4,600 per day.

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 88,000, which is a decrease from last week's daily average passage index of about 110,000 per day. Steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage index for steelhead at MCN was 11,100 per day, whereas that for last week was 22,600 per day. Passage of subyearling Chinook, coho, and sockeye all increased this week, when compared to the previous week. This week's daily average passage indices for these three species were 8,700, 6,750, and 15,300 per day, respectively. Last week's daily average passage indices were about 3,400 for subyearling Chinook, 3,250 for coho, and 7,600 for sockeye. The majority (95%) of the subyearling Chinook that were collected this week at MCN were fry. Finally, no Pacific lamprey ammocoetes were encountered this week but Pacific macrophthalmia were collected in all three of this week's samples. This week's daily average collection for Pacific macrophthalmia was just over 3,000 fish per day, which is an increase over last week's daily average of only 150 per day.

This week's samples at Lower Granite Dam (LGR) were dominated by steelhead. This week's daily average passage index for steelhead was about 41,500 per day, which is a decrease from last week's daily average passage index of about 135,000 per day. Yearling Chinook passage also decreased this week, when compared to the previous week. This week's daily average passage index for yearling Chinook was about 33,700 per day, whereas that for last week was 131,600 per day. Passage of subyearling Chinook, coho, and sockeye all increased this week, when compared to the previous week. This week's daily average passage indices for these three species were 465, 5,300, and 2,100 per day, respectively. Last week's daily average passage indices were 240 for subyearling Chinook, 4,400 for coho, and 1,400 for sockeye. Nearly all (99.5%) of the sockeye smolts in this week's collections were of hatchery origin (i.e., clipped). Unlike previous

weeks, approximately 37% of the subyearling Chinook juveniles that were collected in this week's samples were not fry. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples (May 15th and May 16th) while Pacific macrophthalmia were encountered in six of this week's samples. The daily sample counts for lamprey ammocoetes and macrophthalmia were generally low.

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. Yearling Chinook dominated the samples at LGS this week. This week's daily average passage index for yearling Chinook was about 43,000 per day, which is a decrease from last week's daily average passage index of about 56,000 per day. Steelhead passage decreased slightly this week, when compared to the previous week. This week's daily average passage index for steelhead was about 28,000 per day, whereas that for last week was about 32,500 per day. Sockeye and coho passage increased this week. This week's daily average passage indices for these two species were 720 and 4,500 per day, respectively. Last week's daily average passage indices were 265 for sockeye and 1,550 for coho. Of the sockeye smolts that were collected this week, approximately 89% were of known hatchery origin (i.e., clipped). Subyearling Chinook were only encountered in three of this week's samples and in relatively low numbers. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples (May 14th and May 18th) and macrophthalmia were encountered in five of this week's samples. This week's daily average collection for Pacific macrophthalmia was 120 per day.

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. Yearling Chinook dominated this week's samples at LMN. This week's daily average passage index for yearling Chinook at LMN was about 101,000, which is a decrease over last week's daily average passage index of about 128,000 per day. Steelhead passage also decreased this week, when compared to last week. This week's daily average passage index for steelhead was about 59,000 per day, whereas that for last week was about 100,000 per day. Passage of sockeye and coho both increased this

week, when compared to last week. The daily average passage indices for these two species were 1,600 and 5,000 per day, respectively. Last week's daily average passage indices were 340 for sockeye and 1,200 for coho. Of the sockeye smolts that were collected this week, approximately 92% were of known hatchery origin (i.e., clipped). Subyearling Chinook were encountered in four of this week's samples. Finally, Pacific lamprey macrophthalmia were encountered in five of this week's samples. This week is the first time that lamprey juveniles have been encountered at LMN this year. This week's daily average collection for lamprey macrophthalmia at LMN was nearly 300 per day.

This week's collections at Rock Island Dam (RIS) were dominated by coho. This week's daily average passage index for coho was about 1,400 per day, which is an increase over last week's daily average passage index of about 600 per day. Passage of yearling Chinook and steelhead decreased this week, when compared to last week. This week's daily average passage indices for these two species were 1,000 and 1,150 per day, respectively. Last week's daily average passage indices were 1,800 for yearling Chinook and 1,700 for steelhead. Sockeye passage this week was similar to last week. This week's daily average passage index for sockeye was about 465 per day. Subyearling Chinook were also encountered in this week's samples, but in relatively low numbers. Unlike previous weeks, some (~11%) of the subyearling Chinook that were collected this week were not fry. Finally, no lamprey juveniles were encountered in this week's samples at RIS.

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 140 fish per day for each species. Both of these daily average collections represented an increase from the previous week. Last week's daily average collections were about 115 for yearling Chinook and 90 for steelhead. Coho collections increased slightly this week, when compared to the previous week. This week's daily average collection for coho was about 70 per day, whereas that for last week was 55 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. Subyearling Chinook were encountered in five of this week's samples, but in low numbers. Finally, 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. Similar to the last two years, sampling at WTB in 2017 was 5-days per week. Due to high flows and debris loads, sampling at WTB was suspended after the sample on May 5th. The current 120-day forecast predicts that flows in the Salmon River are not expected to fall below 30 Kcfs until late June. Therefore, it is unlikely that sampling at WTB will resume this year.

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. The FPC currently has data from IMN through May 16th. However, sampling at IMN was suspended for the period of May 6th through May 14th due to high flows. Over the most recent 2-days of samples (May 15th and 16th), collections at IMN were dominated by steelhead. The daily average collection for steelhead over this period was about 170 per day. Of the steelhead smolts that were collected on these two days, approximately 58% were clipped. The daily average collection for yearling Chinook over these two days was about 15 per day. Of the yearling Chinook smolts that were collected over these two days, approximately 19% were clipped. No lamprey juveniles were collected at IMN over these last two days of collections.

Hatchery Release

Effective 2017, the FPC has reorganized our hatchery release zones in an effort to more closely match the geographical regions used by NOAA in their ESU designations. The new river zones are: 1) Lower

Columbia, 2) Middle Columbia, 3) Upper Columbia, and 4) Snake River. In addition, the FPC now provides a summary of hatchery releases below Bonneville Dam (i.e., Lower Columbia River Zone) in the weekly report.

Snake River Zone: The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Approximately 1.0 million subyearling fall Chinook smolts were scheduled into the Snake River, below Hells Canyon Dam, this week. This was the only release that was scheduled for this zone this week.

Just over 2.0 million subyearling fall Chinook smolts are scheduled to be released to this zone over the next two weeks. Of these, 220,500 are scheduled to be released directly from Lyons Ferry Hatchery, which is located below Little Goose Dam. The remaining 1.8 million are scheduled to be released from several locations above Lower Granite Dam, including: 1) the Big Canyon Creek Acclimation Facility on the Clearwater River (500,000), 2) the Grande Ronde River (400,000), 3) the Captain John Rapids Acclimation Facility on the Snake River (500,000), and 4) the Pittsburg Landing Acclimation Facility on the Snake River (400,000). Of the 2.0 million fall Chinook smolts that are scheduled to be released into this zone over the next two weeks, nearly 50% are unmarked, which means that distinguishing them from wild smolts will be 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. Two releases of subyearling summer Chinook were scheduled to begin in this zone this week. In all, these two releases are estimated to total about 650,000 subyearling summer Chinook smolts. Of these, about 500,000 (77%) were scheduled to be released from Wells Hatchery and 150,000 (23%) were scheduled to be released from Chief Joseph Hatchery.

Several volitional releases of coho and summer steelhead are scheduled to end over the next two weeks. In addition, approximately 175,000 subyearling summer Chinook smolts are scheduled to be released into the Okanogan River, on or around May 20th. This is the only new release that is scheduled for this zone over the next two weeks.

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). Several volitional releases of spring Chinook, summer steelhead, and winter steelhead that began several weeks ago were planned to end this week. In addition, approximately 657,500 subyearling fall Chinook smolts were released into the Umatilla River on May 16th. This was the only new release for this zone this week. Furthermore, there is only one new release scheduled for this zone over the next two weeks. This single release is a release of approximately 4.0 million subyearling fall Chinook smolts to the Klickitat River, which is scheduled to begin on or around June 1st.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Several volitional releases of sea-run cutthroat trout, summer steelhead, and winter steelhead were scheduled to end this week. In addition, approximately 800,000 coho smolts were scheduled to be released into the North Fork of the Klaskanine River, on or around May 16th. This was the only new release scheduled for this zone this week.

Nearly 14.6 million subyearling fall Chinook smolts are scheduled to be released into this zone over the next two weeks. These fall Chinook releases are scheduled to occur throughout this river zone, including releases to the Kalama (48%), Cowlitz (32%), Washougal (13%), and Grays (7%) rivers. A very small portion (<0.5%) of these fall Chinook smolts are scheduled to be released at or near the Columbia River estuary. Finally, about 6,000 coho smolts are scheduled to be released into this zone over the next two weeks. These coho releases are part of the WDFW Cooperative Program on the Cowlitz River (1,000 smolts) or the ODFW Enhancement Program on the Skipanon River (5,000 smolts).

Adult Passage

Adult Passage Adult counts at Bonneville Dam have been updated through 5/18/17. The 2017 adult spring Chinook count at Bonneville Dam of 39,141 is about 33.3% of the 2016 count of 117,634 and 29.7% of the 10-year average count of 131,718. The 2017 spring Chinook jack count of 3,406 is about 39.4% of the 2016 count of 8,637 and 17.6% of the 10-year average count of 19,349. At Willamette Falls, 4,174 adult spring Chinook have been counted so far this year. The Willamette Falls 2017 adult spring Chinook count is about 33.4% of the 2016 count of 12,485 and

about 24.2% of the 10 year average count of 16,854. As of May 18th, a total of 19,894 adult spring Chinook have been counted at The Dalles Dam and 8,398 have been counted at McNary Dam. The Dalles Dam 2017 adult spring Chinook count is about 24.2% of the 2016 count and 20.5% of the 10-year average count. The 2017 McNary Dam adult spring Chinook count is about 13.9% of the 2016 count and 12.4% of the 10-year average count. The daily counts at Little Goose Dam increased over the past couple of days. This week several units at Little Goose began operating. A total of 1,512 spring chinook have been counted at Little Goose Dam as of May 18th.

The 2017 Bonneville Dam adult steelhead count of 2,818 is about 63.1% of the 2016 count of 4,467 and 61.4% of the 10-year average count of 4,587. The 2017 Bonneville Dam adult unclipped steelhead count of 948 is about 54.2% of the 2016 count of 1,748 and 64.4% of the 10-year average count of 1,473. 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 May. Daily adult steelhead counts at Lower Granite Dam ranged from 1 to 6 adults per day last week. This year's Lower Granite steelhead count of 7,269 is 1.3 times greater than the 2016 count of 5,461, while being about 80.9% of the 10-year average count of 8,989. The 2017 Lower Granite Dam adult unclipped steelhead count of 3,028 has 79 fewer fish than the 2016 count of 3,107 and 530 fewer fish than the 10-year average count of 3,558. At Willamette Falls, the 2017 count for steelhead was 865 as of May 17th. This year's steelhead count is about 8.6% of the 2016 count of 10,036 and 8.8% the 10-year average count of 9,810.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: **5/6/2017** to **05/19/17**

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 Total					150,000					
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	Enhancement Program	CO	UN	2018	4,000	05-12-17	05-12-17	Youngs Bay	Youngs River	LCOL
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					4,904,000					
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					
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2017	657,530	05-16-17	05-16-17	Reith Bridge	Umatilla River	MCOL
Umatilla Tribe Total					657,530					
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2017	4,100	05-08-17	05-11-17	Hood River	Hood River	MCOL
Warm Springs Tribe Total					4,100					
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	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	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	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					1,932,500					
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 Jack Creek Acclim Pond	Yakima River	MCOL
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2017	228,881	03-15-17	05-15-17		Yakima River	MCOL
Yakama Tribe Total					655,832					
Grand Total					12,803,962					

Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From:	5/20/2017		to		6/2/2017					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2017	175,000	05-20-17	05-20-17	Omak Pond	Okanogan River	UCOL
Colville Tribe Total					175,000					
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 Big Canyon	Snake River	SNAK
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2017	500,000	05-26-17	05-26-17	(Clearwater River)	Clearwater River M F	SNAK
Nez Perce Tribe Total					1,400,000					
Oregon Dept. of Fish and Wildlife	Enhancement Program	CH0	FA	2017	16,500	06-01-17	06-01-17	Skipanon River	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	CH0	FA	2017	25,000	06-01-17	06-01-17	Youngs Bay	Youngs River	LCOL
Oregon Dept. of Fish and Wildlife	Enhancement Program	CO	UN	2018	5,000	06-01-17	06-01-17	Skipanon River	Col R Bel. Bon Dam	LCOL
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2017	400,000	05-30-17	05-30-17	Grande Ronde River	Grande Ronde River	SNAK
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2017	240,000	04-14-17	05-31-17	Deschutes River	Deschutes River	MCOL
Oregon Dept. of Fish and Wildlife Total					686,500					
Washington Dept. of Fish and Wildlife	COOP	CO	NO	2018	1,000	06-01-17	06-01-17	Campbell Creek	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CH0	FA	2017	168,340	06-01-17	06-01-17	Cowlitz Hatchery	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Cowlitz Salmon	CH0	FA	2017	3,079,580	06-01-17	06-01-17	Cowlitz Hatchery Blackbird Island Acc Pond	Cowlitz River	UCOL
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2017	24,500	04-20-17	05-31-17		Wenatchee 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	Kalama Falls Hatchery	CH0	FA	2017	3,422,352	06-01-17	06-01-17	Kalama Falls Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2017	220,500	05-31-17	05-31-17	Lyons Ferry Hatchery	Snake River	SNAK
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	CH0	FA	2017	1,400,000	06-01-17	07-01-17	Green River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CH0	FA	2017	990,000	06-01-17	06-01-17	Deep River Net Pens	Grays River	LCOL
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CH0	FA	2017	1,900,000	06-01-17	06-01-17	Washougal Hatchery	Washougal River	LCOL
Washington Dept. of Fish and Wildlife Total					14,840,572					
Yakama Tribe	Cascade Hatchery	CO	UN	2017	69,703	04-27-17	06-01-17	Wenatchee River	Wenatchee River	UCOL
Yakama Tribe	Eagle Creek NFH	CO	UN	2017	141,000	04-15-17	06-01-17	Holmes Pond	Yakima River	MCOL
Yakama Tribe	Eagle Creek NFH	CO	UN	2017	141,000	04-15-17	06-01-17	Stiles Pond	Yakima River	MCOL
Yakama Tribe	Klickitat Hatchery	CH0	FA	2017	4,000,000	06-01-17	06-01-17	Klickitat Hatchery	Klickitat River	MCOL
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2017	250,000	04-15-17	06-01-17	Prosser Acclim Pond	Yakima River	MCOL
Yakama Tribe	Willard Hatchery	CO	UN	2017	32,195	04-27-17	06-01-17	Wenatchee River	Wenatchee River	UCOL
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					4,777,359					
Grand Total					21,879,431					

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
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
05/12/2017	177.6	0.0	178.8	60.5	217.1	39.0	221.4	74.8	225.8	81.4	242.4	109.7	244.3	133.7
05/13/2017	185.0	3.3	182.8	73.3	216.1	42.3	221.9	77.1	229.0	86.6	249.5	131.7	249.7	125.0
05/14/2017	198.3	14.5	203.6	100.2	236.4	64.2	239.9	85.8	238.2	92.9	257.8	146.5	259.3	133.9
05/15/2017	218.2	48.7	216.9	122.2	238.6	59.2	244.9	87.4	242.1	97.8	259.9	127.8	260.1	166.8
05/16/2017	230.2	61.0	232.1	142.8	260.1	82.6	260.9	104.4	257.8	113.5	280.0	151.2	281.8	194.4
05/17/2017	235.7	64.7	245.9	147.5	269.0	92.6	270.8	114.2	261.7	122.1	295.0	175.2	300.0	204.3
05/18/2017	230.7	51.6	231.9	127.7	257.2	80.1	263.5	106.3	254.9	115.2	279.1	140.4	291.5	186.6

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

Date	Dworshak		Brownlee Inflow	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
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
05/12/2017	4.6	0.3	---	51.5	179.0	87.7	178.3	133.9	177.3	99.4	177.5	126.5
05/13/2017	6.0	1.5	---	50.9	182.6	91.2	181.0	120.1	184.0	106.3	182.8	127.8
05/14/2017	5.9	1.6	---	50.6	172.7	81.8	174.1	105.1	174.3	96.5	180.1	125.0
05/15/2017	6.0	1.5	---	50.8	158.7	68.3	154.0	84.0	153.4	75.7	155.3	100.8
05/16/2017	6.4	1.9	---	50.6	149.4	59.2	146.8	81.8	147.2	81.5	150.5	102.1
05/17/2017	6.4	1.9	---	44.5	141.1	50.9	137.2	64.4	137.6	75.3	144.8	95.8
05/18/2017	6.3	1.8	---	43.3	130.4	41.5	126.2	53.0	126.7	58.7	127.4	80.0

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
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
05/12/2017	432.1	285.2	439.1	176.1	425.7	220.4	450.4	253.0	73.8	111.3
05/13/2017	435.2	287.7	444.8	180.4	423.5	235.7	441.5	246.3	69.0	113.9
05/14/2017	422.8	275.7	434.1	169.3	419.4	250.5	438.5	239.1	72.3	114.7
05/15/2017	433.8	292.5	433.9	169.0	421.1	270.7	438.4	235.0	76.8	114.2
05/16/2017	423.8	278.3	423.5	159.3	408.7	270.5	435.7	234.4	76.4	112.5
05/17/2017	427.3	280.7	424.6	164.0	409.8	273.1	429.5	229.4	75.9	111.8
05/18/2017	420.8	273.9	435.8	190.7	426.5	280.7	434.2	231.5	75.6	114.7

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

Site	Date	Species	Number of Fish	Number w/ GBT signs	Number w/ Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Lower Granite Dam											
	05/11/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/18/17	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
Little Goose Dam											
	05/08/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/15/17	Chinook + Steelhead	100	5	5	5.00%	0.00%	4	1	0	0
Lower Monumental Dam											
	05/10/17	Chinook + Steelhead	100	22	22	22.00%	1.00%	18	3	1	0
	05/17/17	Chinook + Steelhead	100	10	10	10.00%	2.00%	8	0	2	0
McNary Dam											
	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
	05/14/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	0	1	0	0
	05/16/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	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
	05/13/17	Chinook + Steelhead	100	6	6	6.00%	0.00%	6	0	0	0
	05/16/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	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 Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
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	112.8	113.4	113.8	24	129.0	132.8	134.1	24	121.7	122.2	123.3	24
5/10	---	---	---	0	---	---	---	0	113.6	114.0	115.7	24	126.4	131.4	132.6	24	123.2	125.0	128.9	24
5/11	---	---	---	0	---	---	---	0	113.6	114.1	114.4	24	115.6	118.0	118.8	24	130.0	130.3	130.4	24
5/12	---	---	---	0	---	---	---	0	113.0	113.3	113.8	24	111.5	111.8	112.2	24	119.6	122.5	128.9	24
5/13	---	---	---	0	---	---	---	0	113.1	113.3	113.8	24	115.4	118.3	118.6	24	113.0	114.7	116.2	24
5/14	---	---	---	0	---	---	---	0	112.9	113.1	113.2	24	120.4	120.9	121.1	24	110.9	111.2	112.7	24
5/15	---	---	---	0	---	---	---	0	112.6	113.4	113.6	24	130.5	133.2	134.3	24	117.1	119.0	120.1	24
5/16	---	---	---	0	---	---	---	0	113.6	113.8	114.0	24	136.4	137.9	141.0	24	124.2	127.7	129.5	24
5/17	---	---	---	0	---	---	---	0	112.6	112.7	112.9	24	136.7	138.4	138.8	24	131.7	133.0	134.1	24
5/18	---	---	---	0	---	---	---	0	112.4	112.6	112.9	23	133.5	137.1	138.0	23	132.6	133.5	135.3	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
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	24	118.5	118.6	118.7	20	123.1	123.8	124.8	20	120.2	121.0	121.5	24	127.4	127.8	128.1	18
5/10	117.1	117.3	118.1	24	118.2	118.7	119.0	24	123.7	125.3	129.5	24	123.6	123.9	124.5	23	128.4	128.9	129.6	23
5/11	116.3	117.1	118.1	24	119.5	119.9	120.1	24	124.4	125.7	128.6	24	122.9	124.1	126.3	24	127.6	128.9	130.1	22
5/12	115.3	115.6	115.9	24	118.8	119.8	120.1	24	122.1	122.7	122.9	24	121.5	123.1	123.6	24	126.0	126.7	127.2	22
5/13	115.7	116.3	116.6	24	113.4	113.9	114.9	24	117.2	118.3	120.0	24	119.7	120.0	120.3	24	126.2	126.9	127.4	23
5/14	116.6	116.8	117.0	24	112.0	112.5	112.7	24	118.4	119.5	121.6	24	116.4	117.0	118.4	23	125.9	126.3	126.9	19
5/15	117.1	117.6	117.9	24	114.1	115.7	116.6	24	119.4	121.6	122.6	24	117.9	118.4	118.9	23	126.8	127.5	128.3	21
5/16	118.1	118.6	119.1	24	117.0	117.3	117.6	24	123.7	124.7	125.2	24	120.0	121.6	121.9	24	128.5	129.1	130.2	22
5/17	118.3	118.6	118.8	24	120.1	121.4	121.9	24	126.3	127.4	128.8	24	121.7	122.9	123.5	24	129.2	129.7	130.1	24
5/18	117.7	118.2	118.8	23	121.8	122.3	122.7	22	126.4	127.4	128.9	22	125.1	126.1	127.3	23	129.3	129.7	130.5	22

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
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	120.8	121.9	122.8	20	125.4	127.5	128.2	17	123.5	125.1	125.3	24	125.8	126.7	127.5	24	123.2	124.6	125.3	24
5/10	122.9	123.9	124.4	23	128.3	129.2	129.7	21	125.5	126.3	126.7	24	125.4	126.1	127.5	24	123.7	124.3	124.5	24
5/11	122.5	123.4	124.5	24	128.4	128.9	129.6	21	125.2	125.6	126.1	24	125.3	127.4	128.3	24	124.3	125.4	125.9	24
5/12	120.4	121.1	121.5	24	126.0	126.6	127.2	22	124.0	124.4	124.6	24	123.4	123.8	124.8	24	121.3	122.1	123.3	24
5/13	119.8	120.1	120.4	24	125.1	125.3	125.8	21	123.4	123.9	124.0	24	125.5	126.5	127.8	24	123.4	124.9	125.5	24
5/14	118.8	119.2	119.7	23	124.6	124.9	125.5	19	121.4	121.9	122.2	24	126.3	128.0	130.0	24	123.5	124.5	126.4	24
5/15	119.3	120.1	120.6	22	125.0	125.8	126.3	20	121.6	122.1	122.4	24	124.3	126.2	131.2	24	122.7	123.7	125.5	24
5/16	120.4	121.0	121.5	23	125.6	127.5	128.3	22	121.3	122.1	122.3	24	127.4	128.6	131.1	24	123.2	124.7	126.9	24
5/17	122.1	122.5	122.8	24	128.3	128.6	129.0	24	119.3	119.6	119.7	24	129.5	131.4	135.4	24	125.0	126.5	129.4	24
5/18	123.5	124.6	125.2	23	128.6	128.9	129.3	21	122.7	124.4	124.8	24	126.3	127.6	128.3	24	124.3	125.5	126.5	24

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

Date	<u>Priest R. Dnst</u>			#	<u>Pasco</u>			#	<u>Dworshak</u>			#	<u>Clrwtr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
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	24	102.7	103.7	104.4	24	109.9	110.5	110.9	24
5/10	123.1	123.6	123.8	24	---	---	---	0	101.8	102.4	103.0	24	102.7	103.7	104.3	24	109.8	110.4	110.9	24
5/11	122.4	122.7	122.9	24	---	---	---	0	102.1	102.7	103.3	24	102.6	103.3	103.9	24	109.5	109.9	110.2	24
5/12	121.3	121.5	121.7	24	---	---	---	0	102.6	103.8	106.2	24	102.0	102.3	102.5	24	109.0	109.3	109.5	24
5/13	121.8	122.2	122.7	24	---	---	---	0	104.9	105.8	108.5	24	103.0	103.8	104.2	24	110.0	110.4	110.8	24
5/14	122.1	122.8	123.4	24	---	---	---	0	106.0	107.0	108.3	24	103.2	103.9	104.4	24	110.1	110.7	111.1	24
5/15	122.7	123.0	123.6	24	---	---	---	0	105.4	106.1	106.6	24	103.2	104.1	104.8	24	109.6	110.2	110.6	24
5/16	123.7	124.0	124.3	24	---	---	---	0	107.5	107.8	108.7	24	102.7	103.0	103.5	24	108.4	108.9	109.4	24
5/17	124.1	124.4	124.8	24	---	---	---	0	106.5	106.8	107.0	24	101.6	101.8	102.0	24	107.1	107.2	107.4	24
5/18	124.0	124.9	125.4	24	---	---	---	0	106.2	106.6	107.0	23	102.9	104.0	104.6	23	107.5	108.4	109.0	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-Lewiston</u>			#	<u>Lower Granite</u>			#	<u>L. Granite Tlwr</u>			#	<u>Little Goose</u>			#	<u>L. Goose Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
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	102.6	103.6	104.5	24	107.9	109.0	109.3	24	125.9	126.5	127.2	24	120.1	120.6	121.1	24	127.9	128.1	128.3	24
5/10	102.6	103.6	104.5	24	108.9	109.3	109.7	24	126.0	126.6	127.1	24	120.9	121.4	121.8	24	128.0	128.3	128.8	24
5/11	102.2	102.9	103.5	24	108.4	108.7	108.9	24	126.8	127.1	129.4	24	120.8	121.1	121.5	24	128.1	128.3	128.8	24
5/12	101.2	101.4	101.6	24	106.7	106.9	107.3	24	128.7	129.3	131.3	24	119.0	119.3	119.6	24	128.7	129.0	129.9	24
5/13	101.8	102.6	103.1	24	106.4	106.5	106.6	24	129.6	129.7	129.9	24	119.4	120.0	120.2	24	128.9	129.5	129.9	24
5/14	102.7	103.6	104.7	23	107.2	107.8	108.0	24	127.9	128.8	129.2	24	120.4	120.9	121.0	24	127.6	128.0	128.2	24
5/15	110.5	118.9	124.1	24	108.6	109.3	109.6	24	125.7	126.3	129.3	24	121.7	122.2	122.5	24	125.0	125.4	125.8	24
5/16	99.5	100.3	101.2	24	108.8	109.0	109.3	24	123.4	123.9	125.3	24	121.9	122.3	122.4	24	124.6	124.8	125.0	24
5/17	98.6	101.4	105.6	24	106.0	106.7	107.8	24	120.0	121.1	122.5	24	117.7	118.7	120.2	24	121.6	123.2	124.2	24
5/18	98.3	100.8	102.2	23	104.5	104.8	105.3	23	117.6	117.7	118.4	23	115.5	115.7	116.0	22	118.8	120.6	122.8	23

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

Date	<u>Lower Mon.</u>			#	<u>L. Mon. Tlwr</u>			#	<u>Ice Harbor</u>			#	<u>Ice Harbor Tlwr</u>			#	<u>McNary-Oregon</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
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	131.9	132.1	132.3	24	125.6	126.5	127.7	24	124.5	125.1	125.3	24	124.5	126.2	127.0	24	---	---	---	0
5/10	132.0	132.2	132.3	24	125.1	126.0	126.8	24	125.3	125.4	125.6	24	124.0	125.3	126.3	24	---	---	---	0
5/11	131.2	131.8	131.9	24	125.3	126.0	127.9	24	124.4	124.9	125.1	24	123.7	125.3	127.6	24	---	---	---	0
5/12	129.5	129.9	130.4	24	126.9	127.6	128.8	24	122.5	122.7	123.1	24	127.4	130.1	131.4	24	---	---	---	0
5/13	130.4	130.6	130.9	24	127.0	127.6	128.6	24	122.8	123.1	123.3	24	127.6	130.5	131.6	24	---	---	---	0
5/14	129.3	129.7	130.2	24	125.7	126.6	128.4	24	122.9	123.3	123.6	24	126.9	128.3	132.1	24	---	---	---	0
5/15	129.6	129.8	130.0	24	123.5	124.5	125.4	24	123.8	124.1	124.3	24	122.6	123.6	124.8	24	---	---	---	0
5/16	127.4	128.4	129.0	24	123.5	124.6	125.2	24	123.1	124.1	124.3	24	122.4	123.3	123.7	24	---	---	---	0
5/17	124.2	124.6	125.5	24	122.3	123.7	125.0	24	119.6	119.8	120.5	24	120.9	121.5	122.8	24	---	---	---	0
5/18	123.8	124.2	124.6	23	120.8	121.8	123.8	23	120.1	120.9	121.3	23	119.2	119.8	120.2	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
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	119.2	120.5	120.9	24	130.1	130.5	130.7	24	121.4	123.5	125.1	24	133.5	134.7	136.3	24	122.7	124.1	125.7	24
5/10	120.4	120.7	121.0	24	128.5	130.3	130.6	24	126.5	127.4	127.9	24	136.0	136.3	136.5	24	125.7	126.6	127.0	24
5/11	119.4	120.1	120.2	24	126.6	128.1	129.7	24	125.5	125.9	126.9	24	134.2	135.8	136.3	24	124.3	125.4	126.0	24
5/12	116.1	116.5	117.1	24	127.5	129.0	129.2	24	123.6	123.8	124.5	24	131.8	132.7	133.0	24	122.0	122.6	123.3	24
5/13	116.5	117.0	117.2	24	127.0	129.0	129.3	24	120.8	121.6	122.8	24	132.5	134.0	134.4	24	120.6	120.9	121.6	24
5/14	116.3	116.6	116.8	24	124.2	124.4	124.5	24	117.9	118.2	118.7	24	131.0	131.1	131.4	24	119.2	119.7	120.6	24
5/15	117.6	118.2	118.5	24	127.9	129.7	130.4	24	117.3	117.6	117.9	24	131.0	131.2	131.5	24	118.8	119.6	120.3	24
5/16	117.6	118.3	118.5	24	125.5	126.2	128.0	24	117.7	118.2	118.3	24	129.0	130.0	130.5	24	118.2	119.4	119.8	24
5/17	113.4	113.8	114.4	24	124.3	124.5	124.8	24	115.7	116.1	116.4	24	129.0	130.3	133.9	24	115.0	115.3	115.7	24
5/18	115.1	116.5	117.7	23	124.1	124.4	124.8	23	114.9	115.0	115.3	23	133.1	133.7	134.0	23	118.0	120.0	121.0	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>Camas\Washougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
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	124.8	125.4	24	125.5	126.4	126.9	24	128.8	129.4	130.4	24	127.1	128.2	128.7	24	127.7	128.1	128.6	24
5/10	125.1	125.5	125.9	24	125.6	125.9	126.7	24	128.7	129.0	129.2	24	127.6	128.2	128.8	24	126.8	127.0	127.2	24
5/11	124.4	124.9	125.9	24	124.0	125.1	125.6	24	127.4	128.0	128.4	24	125.5	126.1	126.7	24	126.0	126.8	127.3	24
5/12	123.5	124.0	124.4	24	123.4	123.9	124.3	24	127.1	127.3	127.6	24	124.8	125.2	125.6	24	126.8	127.2	127.4	24
5/13	123.0	123.3	123.7	24	123.0	123.2	123.6	24	126.9	127.2	127.8	24	124.1	124.3	124.8	24	126.3	126.8	127.6	24
5/14	122.5	122.9	123.2	24	122.7	123.2	123.4	24	126.4	126.7	126.9	24	124.7	124.9	125.0	24	125.6	125.9	126.8	24
5/15	121.6	121.9	122.3	24	122.5	122.9	123.1	24	126.1	126.3	126.5	24	124.9	125.4	125.8	24	125.4	125.6	125.7	24
5/16	121.4	122.1	122.8	23	121.1	121.8	122.2	24	125.1	125.6	126.0	24	122.6	123.4	124.6	24	125.4	125.6	125.8	24
5/17	119.8	120.1	120.5	24	117.0	117.4	118.4	24	122.6	123.0	123.8	24	120.9	121.2	121.4	24	124.4	124.8	125.1	24
5/18	121.1	122.1	123.2	23	119.4	121.1	121.9	23	124.0	125.4	125.8	23	121.9	122.8	123.8	23	124.7	125.4	125.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/19/2017 11:34

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/smolqueries/currentsmppsubmitdata.asp>

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
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	66,864	1,219	---	101,558	62,020
05/11/2017		---	---	83	---	100,597	30,075	142,547	1,599	94,010	---	63,517
05/12/2017		---	---	120	---	93,468	30,262	200,942	1,359	---	129,693	51,917
05/13/2017		---	---	282	---	61,735	53,733	206,887	1,210	88,546	---	39,541
05/14/2017		---	---	152	---	27,826	61,718	146,479	950	---	144,266	38,181
05/15/2017	*	---	13	136	---	12,340	60,177	89,546	1,051	101,954	---	41,082
05/16/2017	*	---	18	86	---	18,712	30,284	32,991	875	---	122,993	33,753
05/17/2017		---	---	83	---	8,022	30,791	17,106	711	73,555	---	38,697
05/18/2017		---	---	114	---	13,920	32,882	15,285	1,003	---	98,695	29,458
05/19/2017		---	---	69	---	---	18,346	---	---	62,621	---	31,657
Total:		337	40	1,846	0	1,156,908	713,877	1,605,635	19,558	767,795	841,450	848,211
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		337	13	123	0	82,636	47,592	114,688	1,397	95,974	120,207	56,547
YTD		33,704	22,121	20,576	8	3,908,287	2,288,082	2,791,109	47,001	1,452,775	1,560,512	1,755,982

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
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	0	44	---	2,116	60,848
05/11/2017		---	---	0	---	364	10	0	61	1,875	---	8,841
05/12/2017		---	---	2	---	375	0	0	32	---	3,472	6,632
05/13/2017		---	---	0	---	396	0	467	31	5,348	---	2,066
05/14/2017		---	---	0	---	1,193	137	0	46	---	5,049	1,386
05/15/2017	*	---	0	1	---	748	0	415	66	15,464	---	618
05/16/2017	*	---	0	9	---	0	220	440	38	---	3,028	3,778
05/17/2017		---	---	5	---	164	224	0	25	5,367	---	3,266
05/18/2017		---	---	4	---	382	0	332	90	---	2,617	2,942
05/19/2017		---	---	2	---	---	346	---	---	5,170	---	4,113
Total:		0	0	23	0	4,925	941	3,939	1,279	44,839	17,269	451,830
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		0	0	2	0	352	63	281	91	5,605	2,467	30,122
YTD		0	1	25	0	11,914	1,715	5,837	2,991	76,103	24,133	1,420,263

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)	
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	1,268	563	---	3,173	5,096
05/11/2017		---	---	70	---	9,112	2,488	2,523	1,046	4,374	---	4,871
05/12/2017		---	---	61	---	9,750	912	4,923	1,192	---	4,465	5,870
05/13/2017		---	---	107	---	10,289	4,959	12,609	1,391	5,942	---	3,749
05/14/2017		---	---	104	---	4,373	4,513	6,007	954	---	5,771	2,052
05/15/2017	*	---	0	64	---	3,739	5,339	5,804	1,322	4,163	---	3,969
05/16/2017	*	---	0	49	---	3,090	4,391	2,639	1,696	---	6,756	4,911
05/17/2017		---	---	39	---	1,965	5,833	1,894	952	10,132	---	4,005
05/18/2017		---	---	46	---	3,748	5,477	1,329	2,489	---	6,421	3,929
05/19/2017		---	---	22	---	---	3,803	---	---	10,052	---	6,233
Total:		0	0	873	0	67,590	46,075	43,496	14,149	43,292	35,511	84,222
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		0	0	58	0	4,828	3,072	3,107	1,011	5,412	5,073	5,615
YTD		0	0	2,063	0	90,800	51,667	46,448	15,141	51,872	53,734	304,003

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)	
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	139,589	1,253	---	65,853	5,272
05/11/2017		---	---	76	---	94,765	29,866	125,727	1,116	17,536	---	2,733
05/12/2017		---	---	76	---	71,346	28,064	115,911	1,171	---	61,748	7,401
05/13/2017		---	---	329	---	43,135	26,980	98,073	1,369	10,102	---	5,559
05/14/2017		---	---	282	---	58,037	23,659	55,449	1,240	---	82,232	5,479
05/15/2017	*	---	160	146	---	34,403	32,990	51,821	1,191	14,923	---	6,829
05/16/2017	*	---	179	42	---	35,535	30,190	47,947	1,227	---	61,263	8,818
05/17/2017		---	---	47	---	19,646	26,481	27,174	806	8,398	---	7,083
05/18/2017		---	---	71	---	28,528	26,017	15,949	998	---	43,997	5,034
05/19/2017		---	---	35	---	---	11,750	---	---	6,327	---	2,741
Total:		394	1,015	1,666	0	1,234,983	433,232	1,104,962	19,800	130,148	467,254	109,398
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		394	338	111	0	88,213	28,882	78,926	1,414	16,269	66,751	7,293
YTD		7,117	14,450	7,374	1	3,787,054	1,671,022	2,342,036	21,995	402,941	1,190,999	225,509

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)	
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	423	1,040	---	3,703	3,632
05/11/2017		---	---	0	---	4,374	597	420	628	14,371	---	2,436
05/12/2017		---	---	0	---	3,375	23	448	570	---	8,928	4,336
05/13/2017		---	---	0	---	2,770	222	467	470	21,393	---	4,392
05/14/2017		---	---	0	---	1,193	1,009	5,545	568	---	16,590	3,184
05/15/2017	*	---	0	0	---	3,739	978	1,244	568	17,843	---	7,075
05/16/2017	*	---	0	0	---	1,030	902	1,320	476	---	11,647	7,054
05/17/2017		---	---	0	---	819	702	1,894	375	6,556	---	6,788
05/18/2017		---	---	0	---	1,530	1,208	332	228	---	11,891	9,206
05/19/2017		---	---	0	---	---	871	---	---	14,073	---	4,985
<hr/>												
Total:		0	0	0	0	24,535	7,768	13,653	6,833	90,356	65,627	68,005
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		0	0	0	0	1,753	518	975	488	11,295	9,375	4,534
YTD		6	0	0	0	52,830	12,683	24,691	8,785	126,101	91,138	103,228

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)	
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	0	1	---	715	0
05/11/2017		---	---	0	---	7	0	0	1	200	---	0
05/12/2017		---	---	0	---	1	150	0	0	---	858	67
05/13/2017		---	---	0	---	1	300	400	0	800	---	33
05/14/2017		---	---	0	---	1	150	200	0	---	715	73
05/15/2017	*	---	0	0	---	2	200	200	0	6,800	---	0
05/16/2017	*	---	0	0	---	4	0	1,000	0	---	3,143	133
05/17/2017		---	---	0	---	1	0	200	0	1,600	---	20
05/18/2017		---	---	0	---	1	200	0	0	---	15,143	267
05/19/2017		---	---	0	---	---	0	---	---	400	---	400
<hr/>												
Total:		0	1	0	0	31	1,000	2,000	10	10,200	21,289	1,093
# Days:		1	3	15	0	14	15	14	14	8	7	15
Average:		0	0	0	0	2	67	143	1	1,275	3,041	73
YTD		0	2	4	0	44	2,600	2,000	24	16,680	36,057	34,910

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 macrophthalmia, 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:

5/19/17 10:41 AM

		05/05/17	TO	05/19/17			
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	2,750	635,996	36,650	676,654	13,500	1,365,550
	Sum of NumberBarged	2,725	630,087	36,448	661,406	13,324	1,343,990
	Sum of NumberBypassed	13	4,481	169	15,163	78	19,904
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	18	3	11	0	32
	Sum of FacilityMorts	12	1,392	30	72	98	1,604
	Sum of ResearchMorts	0	18	0	2	0	20
	Sum of TotalProjectMorts	12	1,428	33	85	98	1,656
LGS	Sum of NumberCollected	253	251,281	16,613	133,839	2,650	404,636
	Sum of NumberBarged	247	249,903	16,597	133,799	2,462	403,008
	Sum of NumberBypassed	2	0	0	0	0	2
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	13	0	4	3	20
	Sum of FacilityMorts	4	1,365	16	36	185	1,606
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	4	1,378	16	40	188	1,626
LMN	Sum of NumberCollected	2,000	758,266	19,800	518,134	6,200	1,304,400
	Sum of NumberBarged	1,999	720,552	19,800	493,730	6,139	1,242,220
	Sum of NumberBypassed	0	0	0	1	0	1
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	17	0	12	1	30
	Sum of FacilityMorts	1	630	0	213	60	904
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	647	0	225	61	934
Total Sum of NumberCollected		5,003	1,645,543	73,063	1,328,627	22,350	3,074,586
Total Sum of NumberBarged		4,971	1,600,542	72,845	1,288,935	21,925	2,989,218
Total Sum of NumberBypassed		15	4,481	169	15,164	78	19,907
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		0	48	3	27	4	82
Total Sum of FacilityMorts		17	3,387	46	321	343	4,114
Total Sum of ResearchMorts		0	18	0	2	0	20
Total Sum of TotalProjectMorts		17	3,453	49	350	347	4,216

YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/19/17 10:41 AM

TO: 05/19/17

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	6,808	2,306,463	51,250	30,194	2,157,044	4,551,759
	Sum of NumberBarged	3,249	924,953	40,312	14,400	790,562	1,773,476
	Sum of NumberBypassed	3,538	1,379,146	10,900	15,644	1,366,338	2,775,566
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	5	85	3	7	46	146
	Sum of FacilityMorts	16	2,261	35	143	96	2,551
	Sum of ResearchMorts	0	18	0	0	2	20
	Sum of TotalProjectMorts	21	2,364	38	150	144	2,717
LGS	Sum of NumberCollected	757	1,257,218	20,217	6,016	949,568	2,233,776
	Sum of NumberBarged	247	415,101	16,997	2,462	197,834	632,641
	Sum of NumberBypassed	502	837,161	3,200	3,296	751,526	1,595,685
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	27	0	6	9	42
	Sum of FacilityMorts	8	4,929	20	252	199	5,408
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	8	4,956	20	258	208	5,450
LMN	Sum of NumberCollected	3,000	1,409,021	21,400	12,400	1,205,279	2,651,100
	Sum of NumberBarged	2,399	881,615	20,600	7,735	620,701	1,533,050
	Sum of NumberBypassed	600	489,493	800	4,597	560,085	1,055,575
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	32	0	4	24	60
	Sum of FacilityMorts	1	814	0	64	291	1,170
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	846	0	68	315	1,230
Total Sum of NumberCollected		10,565	4,972,702	92,867	48,610	4,311,891	9,436,635
Total Sum of NumberBarged		5,895	2,221,669	77,909	24,597	1,609,097	3,939,167
Total Sum of NumberBypassed		4,640	2,705,800	14,900	23,537	2,677,949	5,426,826
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		5	144	3	17	79	248
Total Sum of FacilityMorts		25	8,004	55	459	586	9,129
Total Sum of ResearchMorts		0	18	0	0	2	20
Total Sum of TotalProjectMorts		30	8,166	58	476	667	9,397

Cumulative Adult Passage at Mainstem Dams Through: 05/18

dam	enddate	Spring Chinook						Summer Chinook						Fall Chinook					
		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.		2017		2016		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	05/18	39141	3406	117634	8637	131718	19349	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/18	19894	1809	82178	6844	97248	14788	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/18	13440	1318	70936	5151	81852	12540	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/18	8398	537	60352	4069	67920	8105	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/18	4934	297	44549	2368	47613	4864	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/18	3440	231	42227	2673	43886	3888	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/18	1512	99	37414	2477	36087	3403	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/18	472	32	33174	1537	30764	2633	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/17	344	0	8779	179	9303	295	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/17	202	0	9409	170	8519	265	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/17	108	0	7234	77	7133	184	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/17	35	0	2624	31	2417	56	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/17	18	0	1581	19	1457	46	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/17	4174	208	12485	431	16854	414	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2017		2016		10-Yr Avg.		2017	2016	10-Yr Avg.	10-Yr Unclipped		Unclipped		10-Yr Avg.	2017	2016	10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack				2017	2016	Avg.	2017					2016
BON	05/18	0	0	0	0	0	0	1	1	0	2818	4467	4587	948	1748	1473	129	1029	182
TDA	05/18	0	0	0	0	0	0	0	0	0	1248	318	2571	428	174	1060	0	3	0
JDA	05/18	0	0	0	0	0	1	0	0	0	516	366	5062	333	251	2041	7	298	36
MCN	05/18	0	0	0	0	1	0	0	1	0	2529	463	6395	756	296	2115	2	8	2
IHR	05/18	0	0	0	0	0	0	0	0	0	1060	1331	5533	499	698	1557	-2	1	0
LMN	05/18	0	0	0	0	0	0	0	0	0	1406	1414	8187	679	982	2796	0	1	0
LGS	05/18	0	0	0	0	0	0	0	0	0	1440	3396	5025	643	1965	2527	0	0	0
LGR	05/18	0	0	0	0	0	0	0	0	0	7269	5461	8989	3028	3107	3558	0	-1	0
PRD	05/17	0	0	0	0	0	0	0	0	0	26	16	42	0	0	0	0	75	3
WAN	05/17	0	0	0	0	0	0	0	0	0	24	26	87	0	0	0	1	40	1
RIS	05/17	0	0	0	0	0	0	0	1	0	49	34	104	14	17	55	0	0	0
RRH	05/17	0	0	0	0	0	0	0	1	0	112	80	292	25	24	197	0	0	0
WEL	05/17	0	0	0	0	0	0	0	0	0	26	48	56	17	16	37	0	1	0
WFA	05/17	0	0	0	0	0	0	0	0	0	865	10036	9810	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.

