



Fish Passage Center

Weekly Report #17-09

May 5, 2017

This Week's Highlights

River Conditions

Flows in the Snake River remain high, but have decreased approximately 9 Kcfs on average 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 51.0 and 65.4 Kcfs over the last four days. Current outflow projections show flow increases of around 50 Kcfs forecasted in the next week in both the Snake River and Lower Columbia. Flow increases in the mid-Columbia are not as drastic as Grand Coulee is expected to begin refill in the next several 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 12% and 40% of average at individual sub-basins over early May. Precipitation above The Dalles has been 27% of average over May. Over the 2017 water year, precipitation has ranged between 113% and 142% 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 1-3, 2017		Water Year 2017 October 1, 2016 to May 3, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.12	40	32.7	127
Sneke River Above Ice Harbor	0.03	14	21.8	136
Columbia Above The Dalles	0.06	27	25.0	127
Kootenai	0.07	23	33.9	134
Clark Fork	0.05	16	20.2	113
Flathead	0.13	38	33.8	141
Pend Oreille River Basin above Waneta Dam	0.08	26	28.8	130
Salmon River Basin	0.03	12	28.5	140
Upper Snake Tributaries	0.05	19	25.7	142
Clearwater	0.09	24	36.5	123
Willamette River above Portland	0.08	19	77.7	140

Snowpack within the Columbia Basin has been above average. Average snowpack in the Columbia River for basins above the Snake River confluence is 123% of average, for Snake River Basins the average snowpack is 161% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 164% of average.

Table 2 displays the May 4th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 4th ESP forecast at The Dalles between April and August is 110,767 Kaf (127% of average).

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

Location	May 4, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	127	110,767
Grand Coulee (Apr-Aug)	119	67,717
Libby Res. Inflow, MT (Apr-Aug)	123 139*	7,242 8,190*
Hungry Horse Res. Inflow, MT (Apr-Aug)	124	2,405
Lower Granite Res. Inflow (Apr- July)	146	28,987
Brownlee Res. Inflow (Apr-July)	207	11,349
Dworshak Res. Inflow (Apr-July)	115 121*	2,777 2,941*

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,232.4 feet (5-4-17) and has held steady over the last week. Outflows at Grand Coulee have ranged between 164.6 Kcfs and 180.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,359.4 feet (5-4-17) and has drafted 3.6 feet over the past week. Daily average outflows at Libby Dam have been 22.5 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,528.0 feet (5-4-17) and has drafted 1.3 feet last week. Outflows at Hungry Horse have been 8.6-9.5 Kcfs over the last week.

Dworshak is currently at an elevation of 1,530.7 feet (5-4-17) and has refilled 8.3 feet over the last week. Dworshak began to refill on April 15th, 2017. Dworshak outflows over the last week were reduced from 7.2 Kcfs to 4.7 Kcfs.

The Brownlee Reservoir was at an elevation of 2,015.2 feet on May 4, 2017, and refilled 8.3 feet last week. Outflows at Hells Canyon have ranged between 51.1 and 65.4 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 120.4 last week and 131.5 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 337.2 Kcfs and 206.2 Kcfs at Priest Rapids. Over the spring season, flows at McNary Dam were 353.4 Kcfs and Priest Rapids Dam flows were 214.9 Kcfs.

Spill

Flows in the Snake River remain high, but have decreased approximately 9 Kcfs on average 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. Hells Canyon Complex flows remain quite high, with outflows at Hells Canyon ranging between 51.0 and 65.4 Kcfs over the last four days. Current outflow projections show flow increases of around 50 Kcfs forecasted in the next week in both the Snake River and Lower Columbia. Flow increases in the mid-Columbia are not a drastic as Grand Coulee is expected to begin refill in the next several days.

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	45 Kcfs/Gas Cap

Even with flow decreases last week, with limited hydraulic capacity, Snake River projects continue to spill above the levels targeted for fish spill. Spill at Lower Granite Dam exceeded the Biological Opinion level of 20 Kcfs, and ranged from 22 to 48 Kcfs. At Little Goose Dam Biological Opinion spill is 30% of flow and ranged from 31% to 53% of average daily flow over the past week. At Little Goose Dam, the forebay TDG waiver was exceeded over six of seven days last week; whereas, the tailrace exceeded TDG waivers over three days last week. Spill at Lower Monumental Dam exceeded the 120% gas cap level one day last week; the forebay TDG waiver was exceeded six days last week. At Ice Harbor spill ranged from 66 Kcfs to 93 Kcfs, only forebay TDG waivers were exceeded over last two days of last week.

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 2016 Fish Operations Plan.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	30%/30%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

Spill that has occurred in the middle Columbia River over the past several weeks has exceeded the planned spill for fish passage levels due to “involuntary” spill. At McNary Dam spill averaged 58-63% of daily average flow, with the tailrace TDG waivers being exceeded every day of last week and forebay TDG waivers being exceeded during all but one day last week. At John Day Dam spill averaged between 32 and 36% of average

daily flow, with the tailrace and forebay TDG waivers being exceeded over six and two days last week, respectively. At The Dalles Dam spill ranged from 41 to 53% of average daily flow, with all tailrace and forebay waivers exceeded most of the last week. Bonneville Dam spill was 134 to 170 Kcfs, with tailrace TDG waivers being exceeded every day of last week. 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 4.7 Kcfs (no spill). With flood control operations continuing at the Hells Canyon Complex, the TDG supersaturation levels continue to be well in excess of 100% when the river water enters the mainstem Snake River hydrosystem. TDG supersaturation at the Lower Granite Dam forebay monitor has averaged about 106% over the beginning of May.

The present uncontrolled spill due to unit outages and flood control operations has declined slightly over the last week, but elevated TDG supersaturation levels generally continue throughout the hydrosystem (The present TDG criteria are noted below). Over the past week the tailwater TDG supersaturation (average of 12 highest hourly levels in a calendar day) ranged from 117% to 121% at Lower Granite Dam; 116% to 121% at Little Goose Dam; 119% to 120% at Lower Monumental Dam; and, 119-120% at Ice Harbor Dam. TDG supersaturation levels have also been high at the Middle Columbia projects, ranging from 120% to 121% at the tailwater of McNary Dam; 119% to 122% at The Dalles Dam; 120% to 124% below John Day Dam; and, 122% to 124% at the Cascade Island gage below Bonneville Dam. Similar to the federal hydrosystem, TDG supersaturation levels have declined prior to Wells Dam on the Upper Columbia over the last week (reduced from 108% to 114% in the forebay of Wells Dam). TDG downstream of Wells Dam also decreased last week, near 120-122% (on average) in the tailraces of Rocky Reach and Rock Island dams. TDG was 117% (on average) in the tailraces of Wanapum and 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 5/4/17 sample, 2% of fish showed Rank 1 signs of GBT. Little Goose Dam no fish were detected with signs of GBT in the exam conducted on 5/1/17. At Lower Monumental Dam, no fish were detected with signs of GBT on 5/3/17. At Bonneville Dam 2% of the sample on 4/29/17 were observed with Rank 1 levels of GBT in their fins; the sample on 5/2/17 at Bonneville showed 1% of sample at Rank 1 and 1% of sample at Rank 4. At McNary Dam no fish showed signs of GBT on exams taken on 04/30/17 or 5/2/17. The observed signs of GBT are well below the action criteria that would be in place during the voluntary spill for fish passage program. At Rock Island Dam, the GBT exam on 5/2/17 showed 20% of signs of GBT (all at or below level 2, most Rank 1), the exam on 5/4/17 showed 17% signs of GBT with all of those at equal or less than level 3. 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, Salmon, and Imnaha river traps continued this week. Due to high flows and debris loads, sampling at the Snake River Trap has been terminated for the 2017 season.

This week's samples at Bonneville Dam (BON) were again dominated by yearling Chinook. This week's daily average passage index for yearling Chinook at BON was about 52,400 per day, which is an increase from last week's daily average passage index of about 32,700 per day. Sockeye and steelhead passage also increase this week, when compared to the previous week. This week's daily average passage indices for these two species were 2,300 and 10,000 per day, respectively. Last week's daily average passage indices were 900 for sockeye and about 3,700 for steelhead. Subyearling Chinook and coho passage decreased this week. This week's daily average passage indices for these two species were nearly 500 and just over 7,050 fish per day, respectively. Last week's daily average passage indices were nearly 1,000 for subyearling Chinook and 7,350 for coho. Finally, Pacific lamprey macrophthalmia were encountered in only three of this week's samples (April 28th, April 29th, and May 2nd). 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 106,000 and 110,000, respectively. Both of these represent increases over last week's daily average passage indices which were nearly 56,000 for yearling Chinook and 45,000 for steelhead. Coho and sockeye passage also increased this week, when compared to last week. This week's daily average passage indices for these two species were 4,100 and 5,050, respectively. Last week's daily average passage indices were 400 for coho and 1,400 for sockeye. Subyearling Chinook were also

encountered in this week's samples but in relatively low numbers. All of the subyearling Chinook that were collected at JDA this week were fry. Finally, Pacific lamprey ammocoetes were encountered in all four of this week's samples and Pacific macrophthalmia were encountered in three of this week's samples. This week's daily average collections for Pacific ammocoetes was about 300 per day, while that for macrophthalmia was about 400 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 113,600, which is a large increase over last week's daily average passage index of about 58,600 per day. Passage of coho, sockeye, and steelhead also increased this week, when compared to the previous week. This week's daily average passage indices for these three species were nearly 1,500, 6,450, and 32,500 per day, respectively. Last week's daily average passage indices were about 1,000 for coho, 3,700 for sockeye, and 30,750 for steelhead. No subyearling Chinook were collected in this week's samples at MCN. 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 nearly 1,500 fish per day, which is an increase over last week's daily average of about 950 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. This week's daily average passage index for yearling Chinook was nearly 150,700 per day, which is an increase over last week's daily average passage index of about 125,000 per day. Passage of steelhead decreased this week, when compared to last week. This week's daily average passage index for steelhead was about 75,000, whereas that for last week was 132,000 per day. Subyearling Chinook and sockeye passage also decreased this week. This week's daily average passage indices for these two species were 160 and about 600 per day, respectively. Last week's daily average passage indices were 300 for subyearling Chinook and nearly 1,100 for sockeye. All of the subyearling Chinook that have been collected so far this year have been fry. Although hatchery sockeye have not been collected in the SMP sample

at LGR so far this year, three PIT-tagged sockeye from Springfield Hatchery were detected at the LGR juvenile detection system this week (one on April 30th and two on May 2nd). This indicates that at the sockeye from the Springfield Hatchery releases are beginning to arrive at LGR. Coho passage increased this week, when compared to last week. This week's daily average passage index for coho was 2,100 per day, whereas that for last week was about 700 per day. Finally, no 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 145,000 per day, which is an increase over last week's daily average passage index of about 135,000 per day. Steelhead passage decreased this week, when compared to the previous week. This week's daily average passage index for steelhead was about 87,000 per day, whereas that for last week was about 125,000 per day. Sockeye/kokanee passage also decreased this week. This week's daily average passage index was about 125 per day, whereas that for last week was 1,000 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, Pacific lamprey macrophthalmia were encountered in only one (May 4th) of this week's samples while no ammocoetes were encountered this week.

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. Yearling Chinook dominated this week's samples at LMN. This week's daily average passage index for yearling Chinook at LMN was nearly 94,000, which is a slight decrease over last week's daily average passage index of about 98,000 per day. Steelhead passage also decreased this week, when compared to last week. This week's daily average passage index

for steelhead was about 83,000 per day, whereas that for last week was about 156,000 per day. Passage of sockeye/kokanee also decreased this week. This week's daily average passage index for sockeye/kokanee at LMN was about 750 per day, whereas that for last week was about 1,075 per day. Finally, passage of subyearling Chinook and coho both increased this week. This week's daily average passage indices for these two species were 125 and 750 per day, respectively. No subyearling Chinook or coho were observed at LMN the previous week. 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 2,100 per day, which is an increase over last week's daily average passage index of just over 1,100 per day. Steelhead passage also increased this week, when compared to last week. This week's daily average passage index for steelhead was about 225 per day, whereas that for last week was 50 per day. This week's passage numbers for subyearling Chinook, coho, and sockeye were very similar to those observed last week. This week's daily average passage indices for these three species were 30, 70, and 50 per day, respectively. As with previous weeks, all of the subyearling Chinook that were collected this week were fry. One Pacific lamprey ammocoete was collected in each of the samples on April 30th and May 2nd. No Pacific lamprey macropthalmia were encountered 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 150 fish per day for each species. However, both of these daily average collections represented a decrease from the previous week. Last week's daily average collections were about 300 for yearling Chinook and 250 for steelhead. The only other salmonids that were encountered in this week's collections were coho, at approximately 40 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. Similar to the last two years, sampling at WTB in 2017 is 5-days per week. This week's collections at WTB have been dominated by steelhead. This week's daily average collection for steelhead at WTB was about 240 fish per day, which is similar to last week's daily average collection of about 270 per day. Approximately 95% of the steelhead smolts collected this week were of known hatchery origin. Yearling Chinook collections also decreased this week. This week's daily average collection for yearling Chinook was about 115 per day, whereas that for last week was about 850 per day. Of the yearling Chinook collected at WTB this week, approximately 84% were of known hatchery origin. No sockeye smolts were encountered in this week's samples. The current 10-day flow forecast for the Salmon River, at Whitebird, is predicting flows to increase to above 30 Kcfs by the afternoon of May 5th. Flows of 30 Kcfs are generally the threshold for safe operation of this trap. Therefore, sampling at WTB is likely to be terminated after the sample on May 5th. The current 120-day forecast indicates that flows are not expected to fall below 30 Kcfs until mid- to 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 2nd. Over the most recent 1-week period of data (April 26th-May 2nd), collections at IMN were dominated by steelhead. The daily average collection for steelhead over this period was nearly 400 per day. This is an increase over the daily average collection from the previous week, which was about 150 per day. Of the steelhead smolts that were collected over this period, approximately 78% were clipped. The daily average collection for yearling Chinook over this same period

was about 40 day. This is also a decrease from the previous week's daily average collection of about 80 fish per day. Of the yearling Chinook smolts that were collected over the last week, approximately 43% were clipped. No lamprey juveniles were collected at IMN over the last week.

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. Three volitional releases of steelhead were scheduled to end this week. These three releases were occurring on the Imnaha, Salmon, and Grande Ronde rivers. No new releases were scheduled to begin in this zone this week. Only two new releases are scheduled for this zone over the next two weeks. The first is a release of approximately 1.0 million subyearling fall Chinook smolts to the Snake River, below Hells Canyon Dam. This release is scheduled to begin on or around May 15th. The second is a release of about 400,000 subyearling fall Chinook smolts to the Grande Ronde River, on or around May 19th. Of these 400,000 smolts, approximately 50% are scheduled to be released unmarked, which means that distinguishing them from wild smolts will not be possible.

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. Several volitional releases of summer Chinook, coho, and steelhead were scheduled to end this week. In addition to these volitional releases, there were a few new releases scheduled for this zone this week. Approximately 125,000 summer steelhead smolts were scheduled to be released into the Wenatchee River, on or around May 1st. About 400 subyearling fall Chinook and 450 subyearling summer Chinook smolts were scheduled to be released throughout this river zone on or around May 1st. These subyearling releases were to

be conducted by several different groups that are part of the WDFW Cooperative Program.

Two volitional releases of steelhead are scheduled to end over the next two weeks. In addition to these volitional releases, there are two new releases of subyearling summer Chinook that are scheduled to begin over the next two weeks. In all, these two releases are estimated to total about 650,000 subyearling summer Chinook smolts. Of these, about 500,000 (77%) are scheduled to be released from Wells Hatchery and 150,000 (23%) 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). Approximately 20,375 subyearling fall Chinook smolts were planned for release to the upper portion of this zone this week. These subyearling fall Chinook releases were part of the WDFW Cooperative Program and were scheduled to take place either into the Yakima River or into the Columbia River above McNary Dam. In addition, about 1.0 million coho smolts were scheduled to be released into the Klickitat River this week. Finally, about 25,000 summer steelhead smolts were scheduled to be released into tributaries of the Deschutes River, above Round Butte Dam, this week.

Several volitional releases of yearling spring Chinook, 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, Spring Creek NFH is scheduled to release approximately 4.5 million subyearling fall Chinook tules on or around May 8th. The second is a release of about 600,000 subyearling fall Chinook juveniles into the Umatilla River. This release is scheduled to occur on or around May 17th.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Approximately 2.1 million subyearling fall Chinook smolts were scheduled to be released into the South Fork of the Klaskanine River this week. In addition, nearly 30,000 yearling spring Chinook smolts were scheduled to be released into the Lewis River this week. These spring Chinook smolts were scheduled to be released from acclimation facilities located above Swift Creek Reservoir and are 100% unmarked. Nearly 7.0 million coho smolts were scheduled to be

released throughout this river zone this week. Finally, approximately 186,000 winter steelhead smolts were scheduled to be released into this zone this week. Of these, approximately 135,000 (73%) were scheduled to be released into the Clackamas River while 51,000 (27%) were scheduled to be released into the North Fork Lewis River.

Several volitional releases of cutthroat trout, summer steelhead, and winter steelhead are scheduled to end over the next two weeks. In addition, three new releases are scheduled to occur in this zone over the next two weeks. First, approximately 3.1 million fall Chinook smolts are scheduled to be released into Big Creek on or around May 11th. Second, about 800,000 coho smolts are scheduled to be released into the North Fork of the Klaskanine River on or around May 16th. Finally, approximately 4,000 coho pre-smolts are scheduled to be released into Young's Bay on or around May 12th. This release is a part of the ODFW Enhancement Program and is being conducted by students from Astoria High School.

Adult Passage

Adult Passage Adult counts at Bonneville Dam have been updated through 5/4/17. The 2017 adult spring Chinook count at Bonneville Dam of 9,249 is about 12% of the 2016 count of 76,923 and 11.5% of the 10-year average count of 80,295. The 2017 spring Chinook jack count of 219 is about 11.3% of the 2016 count of 1,942 and 7.8% of the 10-year average count of 2,815. At Willamette Falls, 51 adult spring Chinook have been counted so far this year. In 2016, 5,917 adult spring Chinook were counted at Willamette Falls. As of May 4th, a total of 1,420 adult spring Chinook have been counted at The Dalles Dam and 314 have been counted at McNary Dam. The Dalles Dam 2017 adult spring Chinook count is about 3.5% of the 2016 count and 2.8% of the 10-year average count. The 2017 McNary Dam adult spring Chinook count is about 4% of the 2016 count and 1.5% of the 10-year average count. A total of 68 spring chinook have been counted at Lower Granite Dam as of May 4th.

The 2017 Bonneville Dam adult steelhead count of 2,497 is about 64.8% of the 2016 count of 3,853 and 64.5% of the 10-year average count of 3,870. The 2017 Bonneville Dam adult unclipped steelhead count of 875 is about 54.5% of the 2016 count of 1,605 and 65.1% of the 10-year average count of 1,344. 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 9 to 19 adults per day last week. This year's Lower Granite steelhead count of 7,188 is 1.3 times greater than the 2016 count of 5,343, while being about 82.3% of the 10-year average count of 8,738. The 2017 Lower Granite Dam adult unclipped steelhead count of 2,979 has 44 fewer fish than the 2016 count of 3,023 and 402 fewer fish than the 10-year average count of 3,381. At Willamette Falls, the 2017 count for steelhead was 612 as of May 3rd. This year's steelhead count is about 8.6% of the 2016 count of 7,143 and 8.4% the 10-year average count of 7,262.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: **4/22/2017** to **05/05/17**

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)	STNAK
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2017	295,790	04-20-17	04-28-17	Hells Canyon Dam	Snake River	STNAK
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2017	67,359	04-16-17	04-24-17	Pahsimeroi Hatchery	Pahsimeroi River	STNAK
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2017	1,053,760	04-16-17	04-24-17	Pahsimeroi Hatchery	Pahsimeroi River	STNAK
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2017	3,020,000	03-13-17	04-28-17	Rapid River Hatchery	Little Salmon River	STNAK
Idaho Dept. of Fish and Game	Springfield Hatchery	SO	UN	2017	735,200	04-18-17	04-28-17	Redfish Lake Creek	Salmon River (ID)	STNAK
Idaho Dept. of Fish and Game Total					5,797,799					
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	ST	WI	2017	25,000	05-01-17	05-01-17	Clackamas River	Clackamas River	LCOL
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery	ST	SU	2017	160,000	04-18-17	05-02-17	Wallowa Acclim Pond	Wallowa River	STNAK
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery	ST	SU	2017	215,000	04-01-17	04-30-17	Little Sheep Creek	Imnaha River	STNAK
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	04-25-17	04-25-17	Wychus Creek	Deschutes River	MCOL
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	04-25-17	04-25-17	Crooked River (OR)	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					6,035,000					
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2017	60,000	04-28-17	04-28-17	East Fk Salmon River	Salmon River (ID)	STNAK
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2017	1,200,000	04-25-17	04-26-17	Leavenworth Hatchery	Wenatchee River	UCOL
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					1,475,000					
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2017	50,000	04-28-17	04-28-17	E Fk Irrig Dist Sand Trap	Hood River	MCOL
Warm Springs Tribe Total					50,000					
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	ST	SU	2017	117,000	04-24-17	05-01-17	Chiwawa Hatchery	Wenatchee River	UCOL
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	Methow Hatchery	ST	SU	2017	112,000	04-25-17	05-07-17	Methow Hatchery	Methow River	UCOL
Washington Dept. of Fish and Wildlife	North Tootle Hatchery	CO	SO	2017	150,000	05-01-17	05-01-17	Green River	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2017	180,000	04-12-17	04-24-17	Ringold Springs Hatchery	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2017	39,000	04-16-17	04-22-17	Salmon Creek (WA)	Col R Bel. Bon Dam	LCOL
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					4,337,064					
Yakama Tribe	Cascade Hatchery	CO	UN	2017	46,218	04-24-17	04-25-17	Twisp Acclim Pond	Methow River	UCOL
Yakama Tribe	Cascade Hatchery	CO	UN	2017	69,703	04-27-17	06-01-17	Wenatchee River	Wenatchee River	UCOL
Yakama Tribe	Cascade Hatchery	CO	UN	2017	195,154	04-25-17	04-25-17	Leavenworth Hatchery	Wenatchee River	UCOL
Yakama Tribe	Klickitat Hatchery	CO	NO	2017	1,000,000	05-01-17	05-01-17	Klickitat Hatchery	Klickitat 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	Willard Hatchery	CO	UN	2017	106,937	04-26-17	06-10-17	Butcher Creek Acclim. Pond	Wenatchee River	UCOL
Yakama Tribe Total					1,593,668					
Grand Total					19,288,531					

Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From:			5/6/2017	to	5/19/2017					
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 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	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					5,304,000					
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	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					4,715,000					
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	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	Methow Hatchery	ST	SU	2017	112,000	04-25-17	05-07-17	Methow Hatchery	Methow River	UCOL
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					2,044,500					
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	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 Total					655,832					
Grand Total					13,469,332					

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/21/2017	183.2	9.0	183.4	90.5	191.1	11.7	197.8	70.1	196.5	64.6	209.4	81.7	206.6	96.3
04/22/2017	177.2	0.8	184.5	81.1	196.8	17.5	201.9	70.6	200.2	67.8	216.2	86.2	215.0	114.6
04/23/2017	177.1	0.0	176.4	71.5	190.6	10.9	197.8	60.7	195.5	64.8	213.1	82.4	213.3	118.4
04/24/2017	178.1	3.1	174.6	68.3	182.8	10.0	188.5	51.5	189.2	56.9	203.9	80.3	204.6	115.9
04/25/2017	182.6	5.5	188.1	81.2	198.2	19.2	199.6	74.1	195.1	62.1	216.3	102.6	216.3	126.8
04/26/2017	180.2	2.5	183.9	53.5	190.0	10.0	197.1	74.6	195.0	59.4	212.3	102.5	214.0	126.0
04/27/2017	175.8	0.7	173.4	52.6	186.4	10.0	194.1	78.6	195.9	61.1	215.3	108.1	214.0	122.2
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	172.2	55.2	186.7	10.9	191.5	40.9	197.2	46.7	210.2	74.9	209.3	107.2

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

Date	Dworshak		Brownlee		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/21/2017	7.5	2.5	---	71.7	134.0	61.4	129.4	48.0	133.1	55.9	137.3	87.4	137.3	87.4
04/22/2017	7.4	2.5	---	64.4	126.5	54.3	122.4	37.1	124.7	54.9	130.7	85.0	130.7	85.0
04/23/2017	7.4	2.5	---	61.0	120.5	54.0	118.6	35.6	120.5	54.8	122.5	81.2	122.5	81.2
04/24/2017	7.3	2.5	---	62.4	123.8	57.5	119.3	41.5	121.6	54.8	124.8	82.4	124.8	82.4
04/25/2017	7.3	2.5	---	62.3	130.9	58.6	127.0	38.3	128.2	54.9	133.0	86.2	133.0	86.2
04/26/2017	7.3	2.5	---	62.8	132.2	56.7	129.5	44.5	131.3	58.2	135.7	88.8	135.7	88.8
04/27/2017	7.2	2.3	---	63.2	136.7	52.1	133.1	44.6	133.3	56.9	136.9	91.5	136.9	91.5
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	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	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	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	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	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	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	111.2	66.3

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/21/2017	364.9	215.9	380.6	147.7	363.6	200.6	375.3	173.9	66.2	122.8
04/22/2017	354.9	205.0	366.9	119.8	355.4	204.6	380.4	171.7	77.8	118.5
04/23/2017	351.1	201.0	354.7	106.8	347.9	198.9	376.4	164.1	84.5	115.3
04/24/2017	348.4	198.0	352.4	106.6	335.4	188.2	361.1	156.9	73.0	118.8
04/25/2017	342.8	192.9	344.8	113.5	335.2	180.3	365.2	161.4	68.7	122.7
04/26/2017	362.6	213.3	369.1	130.9	358.1	176.3	377.3	165.6	74.3	125.0
04/27/2017	357.7	208.3	368.7	120.3	354.9	172.4	380.2	166.0	75.7	126.1
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

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank				
								Rank 1	Rank 2	Rank 3	Rank 4	
Lower Granite Dam												
	04/27/17	Chinook + Steelhead	100	4	4	4.00%	0.00%	4	0	0	0	
	05/04/17	Chinook + Steelhead	100	3	2	2.00%	0.00%	2	0	0	0	
Little Goose Dam												
	04/23/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
	05/01/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
Lower Monumental Dam												
	04/27/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
	05/03/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
McNary Dam												
	04/24/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
	04/26/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0	
	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	
Bonneville Dam												
	04/22/17	Chinook + Steelhead	100	4	4	4.00%	1.00%	3	0	0	1	
	04/25/17	Chinook + Steelhead	100	6	6	6.00%	0.00%	6	0	0	0	
	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%	1.00%	1	0	0	1	
Rock Island Dam												
	04/25/17	Chinook + Steelhead	100	53	53	53.00%	2.00%	45	6	2	0	
	04/27/17	Chinook + Steelhead	100	41	41	41.00%	0.00%	35	6	0	0	
	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	

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>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>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>				
4/21	---	---	---	0	---	---	---	0	110.6	111.5	112.4	24	116.8	118.0	118.3	24	115.1	115.5	115.9	24
4/22	---	---	---	0	---	---	---	0	111.1	111.4	111.7	24	111.2	112.9	115.6	24	118.2	119.1	119.3	24
4/23	---	---	---	0	---	---	---	0	111.6	112.0	112.7	24	109.7	110.0	110.2	24	116.9	118.0	119.1	24
4/24	---	---	---	0	---	---	---	0	111.8	112.1	112.4	24	113.7	116.7	116.9	24	110.6	111.3	112.8	24
4/25	---	---	---	0	---	---	---	0	111.5	112.0	112.3	24	116.6	118.6	119.6	24	109.7	110.0	111.1	24
4/26	---	---	---	0	---	---	---	0	112.0	112.3	112.7	24	113.8	117.0	117.5	24	115.1	116.1	116.3	24
4/27	---	---	---	0	---	---	---	0	111.2	111.4	111.8	24	111.1	112.3	116.4	24	113.7	116.4	117.3	24
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	112.9	113.7	115.1	23	119.8	120.3	120.7	23	117.1	119.5	120.5	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>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>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>				
4/21	118.9	119.6	119.8	24	114.9	115.6	116.4	24	115.9	116.3	117.6	24	116.8	117.4	117.8	24	124.2	124.6	125.5	21
4/22	118.6	119.0	119.8	24	116.9	117.2	117.6	24	118.2	118.6	119.0	24	116.8	117.0	117.3	24	124.8	125.3	125.7	20
4/23	117.3	118.4	118.7	24	116.7	116.9	117.2	24	117.6	117.9	118.9	24	117.8	118.0	118.1	24	124.8	125.1	125.7	22
4/24	115.8	116.1	116.4	24	114.0	115.3	116.2	24	115.3	116.4	117.2	24	117.3	117.4	117.5	23	123.6	124.3	124.8	21
4/25	115.5	115.7	116.5	24	112.0	112.9	113.4	24	113.9	114.7	115.3	24	114.9	115.6	116.3	24	124.5	125.1	126.0	21
4/26	114.9	115.2	115.3	24	112.1	112.8	113.4	24	113.7	114.2	115.2	24	113.6	114.0	114.5	23	124.5	124.8	125.2	21
4/27	114.8	115.1	115.3	24	113.4	113.8	114.2	24	114.4	114.7	115.2	24	111.8	112.3	113.3	24	123.9	124.4	124.8	22
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	23	112.6	114.1	116.3	23	113.6	114.6	116.2	23	113.0	114.1	115.1	23	120.5	121.5	123.4	23

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>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>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>				
4/21	118.1	119.2	120.2	23	123.3	123.9	124.6	19	119.0	120.1	120.8	24	118.6	120.0	122.2	24	119.2	120.3	121.4	24
4/22	118.9	119.4	120.5	21	124.1	124.5	125.4	19	121.0	121.4	121.9	24	120.5	121.2	121.5	24	118.9	120.0	120.3	24
4/23	118.2	119.0	119.3	24	124.2	124.6	124.8	22	120.9	121.0	121.1	24	120.0	121.2	122.4	24	119.3	120.4	121.4	24
4/24	117.9	118.2	118.6	21	123.5	123.9	124.3	18	121.1	121.2	121.4	21	120.0	120.5	121.8	21	118.6	118.9	119.1	21
4/25	117.8	118.8	119.7	24	123.9	124.6	125.5	21	119.6	119.8	120.3	24	122.0	123.5	125.8	24	118.5	120.2	122.8	24
4/26	116.5	116.9	117.3	23	123.1	123.4	123.8	21	119.2	119.4	119.6	24	122.5	122.7	123.1	24	120.2	120.7	122.6	24
4/27	116.2	116.6	116.9	23	122.6	123.0	123.5	22	116.8	117.7	118.2	24	122.3	122.6	122.9	24	119.1	119.8	119.9	24
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	114.2	114.8	115.8	23	118.3	118.5	119.9	15	117.3	118.6	119.3	24	116.9	117.8	118.7	24	117.6	118.2	120.6	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>#</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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
4/21	120.2	120.5	121.0	24	---	---	---	0	107.8	108.1	108.7	24	102.8	103.2	103.4	24	109.3	110.2	110.8	23
4/22	120.8	121.5	121.9	24	---	---	---	0	108.6	109.2	110.0	24	104.2	104.7	104.9	24	109.4	109.8	110.1	24
4/23	120.7	121.0	121.1	24	---	---	---	0	108.9	109.5	110.0	24	104.7	105.0	105.2	24	108.3	108.7	109.0	24
4/24	120.5	120.7	121.1	21	---	---	---	0	109.6	110.0	110.3	24	105.4	105.6	105.7	24	108.0	108.4	108.7	24
4/25	120.2	120.8	121.4	24	---	---	---	0	108.5	108.8	109.4	24	104.7	104.8	105.0	24	107.7	108.2	108.4	24
4/26	120.6	120.8	121.0	24	---	---	---	0	108.8	109.1	109.4	24	104.9	105.0	105.1	24	107.7	107.9	108.3	24
4/27	120.2	120.8	121.0	24	---	---	---	0	108.3	108.7	109.3	24	104.2	104.4	104.7	24	107.1	107.6	107.8	24
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	23	102.7	103.9	104.8	23	106.7	108.7	109.3	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>#</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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
4/21	101.9	103.3	104.1	24	106.8	107.1	107.3	24	121.7	122.2	123.2	24	114.9	115.2	115.5	24	119.6	121.1	122.5	24
4/22	102.9	103.9	104.8	24	108.4	109.0	109.5	24	120.3	121.1	121.5	24	117.0	117.4	118.2	24	117.4	117.9	118.2	24
4/23	102.2	102.8	103.7	24	109.5	109.7	109.8	24	120.6	122.0	123.3	24	119.6	120.1	120.3	24	117.4	117.7	117.9	24
4/24	102.3	103.0	103.7	24	108.6	108.9	109.3	24	121.5	122.5	123.5	24	118.8	119.1	119.5	24	118.1	119.0	119.3	24
4/25	101.7	102.3	103.0	24	107.0	107.3	107.7	24	121.7	122.2	123.0	24	117.1	117.4	117.5	24	117.1	118.0	118.8	24
4/26	101.7	102.1	102.6	24	106.7	106.8	107.1	24	121.3	122.2	123.3	24	116.8	117.1	117.4	24	117.8	118.5	118.7	24
4/27	101.2	101.9	102.6	24	105.7	105.9	106.3	24	119.4	119.9	120.0	24	115.2	115.4	116.0	24	117.5	118.0	118.3	24
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	23	107.5	107.9	108.6	22	111.6	112.7	115.4	23	114.6	116.5	120.0	22	119.3	119.7	120.0	22

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>#</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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
4/21	117.5	120.0	122.3	24	119.9	120.1	120.2	24	114.5	115.4	116.5	24	119.6	120.2	120.4	24	---	---	---	0
4/22	122.1	122.8	123.6	24	120.0	120.4	120.6	24	118.1	118.7	118.8	24	119.6	120.1	120.4	24	---	---	---	0
4/23	118.9	119.4	120.2	24	119.9	120.1	120.3	24	119.0	119.2	119.4	24	119.0	119.8	120.0	24	---	---	---	0
4/24	117.8	118.2	118.5	24	120.0	120.2	120.5	24	117.9	118.2	118.8	24	119.4	119.9	120.1	24	---	---	---	0
4/25	117.2	117.7	118.2	24	120.1	120.3	120.7	24	116.0	116.3	116.6	24	119.6	120.1	120.3	24	---	---	---	0
4/26	117.6	118.2	118.3	24	120.3	120.6	120.9	24	116.2	116.4	116.5	24	119.8	120.0	120.4	24	---	---	---	0
4/27	115.9	116.3	116.6	24	120.3	120.6	121.2	24	115.2	115.3	115.5	24	120.0	120.3	120.7	24	---	---	---	0
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	23	119.8	120.1	121.4	23	119.9	120.6	121.3	23	118.4	118.9	119.4	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>24 h</u>	<u>12 h</u>	#	<u>24h</u>	<u>12h</u>	#	<u>24h</u>	<u>12h</u>	#	<u>24h</u>	<u>12h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	AVG	High
4/21	112.3	112.9	113.6	24	120.9	122.0	122.7	24	116.6	117.3	117.6	24	126.7	127.5	128.1	24	117.3	119.0	119.6	24
4/22	114.1	114.8	115.8	24	120.6	120.7	120.8	24	117.0	117.4	117.6	24	122.1	122.4	122.7	24	117.6	118.7	119.5	24
4/23	116.7	117.0	117.3	24	120.5	120.6	120.8	24	115.3	115.6	115.7	24	119.0	119.5	121.2	24	115.2	115.4	115.6	24
4/24	115.8	116.1	116.4	24	120.5	120.7	120.8	24	117.0	117.6	117.9	24	119.0	119.3	119.8	24	115.2	115.7	116.0	24
4/25	113.8	114.0	114.3	24	120.0	120.3	121.2	24	115.6	115.9	116.8	24	120.4	121.2	126.8	24	114.3	115.1	115.7	24
4/26	113.0	113.3	113.5	24	121.1	121.5	121.9	24	115.1	115.5	115.6	24	124.1	126.4	127.7	24	115.3	115.9	116.7	24
4/27	110.8	111.1	111.5	24	120.3	120.5	120.8	24	111.6	112.4	113.3	24	121.8	122.0	122.3	24	111.8	112.2	112.7	24
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	118.3	118.8	119.4	23	120.6	121.0	121.4	23	117.1	118.5	119.5	23	120.3	120.5	120.7	23	116.6	117.4	118.2	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>24 h</u>	<u>12 h</u>	#	<u>24h</u>	<u>12h</u>	#	<u>24h</u>	<u>12h</u>	#	<u>24h</u>	<u>12h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	AVG	High
4/21	121.4	122.4	123.0	24	119.3	120.4	123.4	24	121.7	122.9	123.6	24	118.9	119.6	120.3	24	122.7	123.1	123.4	24
4/22	122.1	122.6	122.9	24	123.8	124.4	124.7	24	123.7	123.9	124.1	24	119.4	120.4	120.9	24	123.3	124.1	124.6	24
4/23	121.1	121.5	121.9	24	123.7	124.2	124.8	24	123.5	124.0	124.3	24	122.1	122.5	122.7	24	122.2	122.5	122.8	24
4/24	120.8	121.2	122.3	24	122.3	123.0	123.1	24	122.5	122.9	123.5	24	120.2	121.0	121.3	24	123.5	124.3	125.3	24
4/25	120.3	120.8	121.5	24	120.5	121.1	122.2	24	121.6	121.9	122.1	24	119.9	120.4	120.7	24	122.7	123.3	123.5	24
4/26	120.6	120.9	121.2	24	120.5	121.5	122.3	24	121.5	122.2	123.0	24	119.4	119.8	120.1	24	122.0	122.3	122.7	24
4/27	118.6	119.3	119.9	24	117.1	117.5	118.1	24	119.4	119.7	119.9	24	117.4	117.7	118.3	24	121.9	122.3	122.6	24
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	120.3	23	122.0	122.6	123.4	23	121.8	122.1	122.5	23	121.6	122.3	122.8	23	123.4	123.7	123.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/5/2017 11:58

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/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)	
04/21/2017	*	1,439	63	---	---	130,388	---	---	848	41,687	---	25,683
04/22/2017	*	---	70	---	---	116,468	114,427	98,068	916	---	36,150	43,486
04/23/2017	*	---	64	---	---	86,580	---	---	799	49,366	---	28,970
04/24/2017	*	1,240	104	201	---	94,155	125,080	78,189	1,353	---	58,178	27,221
04/25/2017	*	684	82	302	---	139,627	---	---	1,325	61,431	---	35,848
04/26/2017	*	798	44	283	---	189,995	165,602	117,225	1,375	---	72,816	36,722
04/27/2017	*	967	59	385	---	118,656	---	---	1,337	81,651	---	31,010
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	---	183	---	95,525	99,481	111,670	1,950	136,957	---	46,044
05/04/2017	*	157	---	92	---	77,865	115,873	80,943	2,240	---	83,027	92,604
05/05/2017	*	---	---	50	---	---	---	---	---	114,753	---	111,436
Total:		6,149	644	2,245	0	1,930,584	1,129,206	856,549	22,379	689,635	589,677	706,933
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		615	54	187	0	137,899	141,151	95,172	1,599	86,204	84,240	47,129
YTD		33,367	22,007	18,780	8	2,753,285	1,574,205	1,185,474	27,443	799,733	719,062	1,019,207

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/21/2017	*	0	0	---	---	358	---	---	100	2,338	---	1,698
04/22/2017	*	---	0	---	---	370	608	0	22	---	158	1,454
04/23/2017	*	---	0	---	---	0	---	---	32	4,816	---	1,704
04/24/2017	*	0	0	0	---	0	0	0	19	---	0	1,089
04/25/2017	*	0	0	0	---	765	---	---	30	2,340	---	148
04/26/2017	*	0	0	0	---	363	0	0	19	---	461	533
04/27/2017	*	0	0	1	---	338	---	---	29	1,940	---	293
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	2	0	36	1,661	---	870
05/04/2017	*	0	---	0	---	268	2	375	22	---	668	0
05/05/2017	*	---	---	0	---	---	---	---	---	554	---	267
Total:		0	0	1	0	3,316	613	749	467	20,996	2,783	10,418
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		0	0	0	0	237	77	83	33	2,625	398	695
YTD		0	1	2	0	6,989	774	1,898	1,712	31,818	6,864	968,700

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)	
04/21/2017	*	0	0	---	---	0	---	---	75	390	---	8,118
04/22/2017	*	---	0	---	---	370	0	0	47	---	79	10,017
04/23/2017	*	---	0	---	---	0	---	---	39	482	---	8,204
04/24/2017	*	0	0	26	---	362	1,148	0	65	---	269	5,911
04/25/2017	*	0	0	43	---	0	---	---	32	936	---	6,196
04/26/2017	*	0	0	53	---	1,816	574	0	54	---	922	6,661
04/27/2017	*	0	0	45	---	2,366	---	---	74	1,940	---	6,290
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	---	---	64	2,444	---	5,294
05/02/2017	*	0	0	22	---	2,675	0	402	42	---	4,242	8,891
05/03/2017		0	---	37	---	2,171	888	845	103	554	---	5,246
05/04/2017		0	---	28	---	268	0	375	114	---	6,010	7,416
05/05/2017	*	---	---	17	---	---	---	---	---	2,772	---	13,284
<hr/>												
Total:		0	0	471	0	19,712	3,802	2,330	895	10,989	17,714	114,155
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		0	0	39	0	1,408	475	259	64	1,374	2,531	7,610
YTD		0	0	1,207	0	23,253	5,592	2,952	992	11,352	18,223	233,065

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)	
04/21/2017	*	312	142	---	---	269,245	---	---	25	15,974	---	2,523
04/22/2017	*	---	107	---	---	126,821	109,488	194,744	54	---	20,241	3,163
04/23/2017	*	---	129	---	---	103,204	---	---	45	22,636	---	2,169
04/24/2017	*	302	189	14	---	113,710	147,410	109,464	45	---	37,177	2,800
04/25/2017	*	158	226	748	---	87,218	---	---	57	32,386	---	3,983
04/26/2017	*	186	301	140	---	120,972	117,744	163,111	66	---	77,117	4,159
04/27/2017	*	344	320	93	---	103,782	---	---	58	51,984	---	7,021
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	---	202	---	34,736	41,532	81,243	270	28,845	---	9,918
05/04/2017		251	---	288	---	50,572	34,170	63,705	489	---	84,364	10,077
05/05/2017	*	---	---	70	---	---	---	---	---	37,144	---	11,324
<hr/>												
Total:		2,601	3,524	2,022	0	1,449,117	808,104	966,170	1,911	257,577	571,976	107,159
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		260	294	169	0	103,508	101,013	107,352	137	32,197	81,711	7,144
YTD		6,723	12,649	5,778	1	2,552,764	1,237,790	1,237,074	2,195	309,937	723,745	127,435

Two-Week Summary of Passage Indices

COMBINED SOCKEYE												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/21/2017	*	0	0	---	---	1,432	---	---	33	1,299	---	1,238
04/22/2017	*	---	0	---	---	1,849	619	1,391	43	---	473	676
04/23/2017	*	---	0	---	---	0	---	---	76	5,779	---	477
04/24/2017	*	0	0	0	---	362	582	1,117	69	---	1,520	622
04/25/2017	*	0	0	0	---	1,913	---	---	67	2,342	---	590
04/26/2017	*	0	0	0	---	1,090	1,736	717	58	---	2,304	1,539
04/27/2017	*	1	0	0	---	1,014	---	---	60	5,336	---	1,170
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	---	724	22	423	41	6,643	---	2,042
05/04/2017		0	---	0	---	0	19	1,874	53	---	3,562	5,325
05/05/2017	*	---	---	0	---	---	---	---	---	4,435	---	4,279
<hr/>												
Total:		6	0	0	0	11,681	3,574	7,740	768	38,557	24,496	26,719
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		1	0	0	0	834	447	860	55	4,820	3,499	1,781
YTD		6	0	0	0	28,310	4,915	11,038	1,952	40,180	25,511	39,502

COMBINED LAMPREY JUVENILES												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
04/21/2017	*	0	1	---	---	0	---	---	0	250	---	67
04/22/2017	*	---	0	---	---	0	0	0	---	200	---	83
04/23/2017	*	---	0	---	---	0	---	---	0	800	---	0
04/24/2017	*	0	0	0	---	0	400	0	0	---	126	50
04/25/2017	*	0	0	0	---	0	---	---	1	300	---	0
04/26/2017	*	0	0	0	---	0	0	0	0	---	300	55
04/27/2017	*	0	0	0	---	0	---	---	0	800	---	50
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	600	---	0
05/02/2017	*	0	0	0	---	0	0	0	1	---	715	100
05/03/2017		0	---	0	---	0	0	0	0	1,200	---	0
05/04/2017		0	---	0	---	0	400	0	0	---	143	0
05/05/2017	*	---	---	0	---	---	---	---	0	---	---	0
<hr/>												
Total:		0	1	0	0	0	800	0	3	5,350	3,483	555
# Days:		10	12	12	0	14	8	9	14	8	7	15
Average:		0	0	0	0	0	100	0	0	669	498	37
YTD		0	1	4	0	13	1,600	0	14	6,480	14,768	33,817

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:

5/5/17 11:59 AM

04/21/17 TO 05/05/17

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	2,000	1,195,700	12,600	864,301	6,800	2,081,401
	Sum of NumberBarged	463	271,918	3,834	106,876	780	383,871
	Sum of NumberBypassed	1,531	922,921	8,762	757,391	5,990	1,696,595
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	43	0	12	1	58
	Sum of FacilityMorts	4	818	4	22	29	877
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	6	861	4	34	30	935
LGS	Sum of NumberCollected	403	703,378	2,404	524,549	2,452	1,233,186
	Sum of NumberBarged	0	165,198	400	64,035	0	229,633
	Sum of NumberBypassed	400	534,920	2,000	460,379	2,399	1,000,098
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	9	0	3	1	13
	Sum of FacilityMorts	3	3,251	4	132	52	3,442
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3	3,260	4	135	53	3,455
LMN	Sum of NumberCollected	400	461,900	1,200	528,500	4,200	996,200
	Sum of NumberBarged	400	161,063	800	126,971	1,596	290,830
	Sum of NumberBypassed	0	300,646	400	401,440	2,597	705,083
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	7	0	11	3	21
	Sum of FacilityMorts	0	184	0	78	4	266
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	191	0	89	7	287
Total Sum of NumberCollected		2,803	2,360,978	16,204	1,917,350	13,452	4,310,787
Total Sum of NumberBarged		863	598,179	5,034	297,882	2,376	904,334
Total Sum of NumberBypassed		1,931	1,758,487	11,162	1,619,210	10,986	3,401,776
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		2	59	0	26	5	92
Total Sum of FacilityMorts		7	4,253	8	232	85	4,585
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		9	4,312	8	258	90	4,677

YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/5/17 11:59 AM

TO: 05/05/17

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	4,058	1,670,467	14,600	16,694	1,480,390	3,186,209
	Sum of NumberBarged	524	294,866	3,864	1,076	129,156	429,486
	Sum of NumberBypassed	3,525	1,374,665	10,731	15,566	1,351,175	2,755,662
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	5	67	0	7	35	114
	Sum of FacilityMorts	4	869	5	45	24	947
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	9	936	5	52	59	1,061
LGS	Sum of NumberCollected	504	1,005,937	3,604	3,366	815,729	1,829,140
	Sum of NumberBarged	0	165,198	400	0	64,035	229,633
	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	14	0	3	5	22
	Sum of FacilityMorts	4	3,564	4	67	163	3,802
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	4	3,578	4	70	168	3,824
LMN	Sum of NumberCollected	1,000	650,755	1,600	6,200	687,145	1,346,700
	Sum of NumberBarged	400	161,063	800	1,596	126,971	290,830
	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	15	0	3	12	30
	Sum of FacilityMorts	0	184	0	4	78	266
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	199	0	7	90	296
Total Sum of NumberCollected		5,562	3,327,159	19,804	26,260	2,983,264	6,362,049
Total Sum of NumberBarged		924	621,127	5,064	2,672	320,162	949,949
Total Sum of NumberBypassed		4,625	2,701,319	14,731	23,459	2,662,785	5,406,919
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		5	96	0	13	52	166
Total Sum of FacilityMorts		8	4,617	9	116	265	5,015
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		13	4,713	9	129	317	5,181

Cumulative Adult Passage at Mainstem Dams Through: 05/04

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	05/04	9249	219	76923	1942	80295	2815	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/04	1420	32	40003	1259	50644	1558	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/04	800	26	27057	460	38108	1129	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/03	314	8	7865	126	20759	395	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/04	184	2	4916	68	14605	208	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/04	184	4	3679	66	10901	153	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/04	80	5	2526	51	7930	156	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/04	68	0	1426	26	5700	72	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/03	20	0	759	2	2248	5	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/03	13	0	406	2	1961	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/03	1	0	235	0	1296	2	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/03	0	0	58	1	322	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/03	0	0	5	0	94	1	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/03	51	0	5917	99	7557	125	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey				
		2017		2016		10-Yr Avg.		10-Yr		10-Yr			Unclipped		Unclipped		10-Yr		10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016	Avg.	2017	2016
BON	05/04	0	0	0	0	0	0	0	1	0	2497	3853	3870	875	1605	1344	2	34	4		
TDA	05/04	0	0	0	0	0	0	0	0	0	1222	298	2446	418	165	1035	0	0	0		
JDA	05/04	0	0	0	0	0	1	0	0	0	496	344	4885	318	239	1975	0	91	5		
MCN	05/03	0	0	0	0	1	0	0	1	0	2526	479	6283	748	316	2077	2	2	2		
IHR	05/04	0	0	0	0	0	0	0	0	0	1012	1281	5418	470	675	1511	0	1	0		
LMN	05/04	0	0	0	0	0	0	0	0	0	1357	1358	7996	648	940	2687	0	0	0		
LGS	05/04	0	0	0	0	0	0	0	0	0	1374	3270	4807	616	1891	2384	0	0	0		
LGR	05/04	0	0	0	0	0	0	0	0	0	7188	5343	8738	2979	3023	3381	0	0	0		
PRD	05/03	0	0	0	0	0	0	5	0	0	15	12	29	0	0	0	5	13	0		
WAN	05/03	0	0	0	0	0	0	0	0	0	17	16	69	0	0	0	6	5	0		
RIS	05/03	0	0	0	0	0	0	0	1	0	40	26	84	12	12	44	0	0	0		
RRH	05/03	0	0	0	0	0	0	0	0	0	93	66	232	16	19	157	0	0	0		
WEL	05/03	0	0	0	0	0	0	0	0	0	9	13	14	5	4	9	0	0	0		
WFA	05/03	0	0	0	0	0	0	0	0	0	612	7143	7262	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.

