



Fish Passage Center

Weekly Report #17-13

June 2, 2017

This Week's Highlights

River Conditions

Flows in the Snake River were decreasing early in the last week, but have begun increasing towards the latter portion the last week. Hells Canyon Complex flows are decreasing, with outflows at Hells Canyon from 37.5 to 39.0 Kcfs over the last four days. Flows at Hells Canyon are expected to be around 38 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 27, 2017): Units 3, 7, 8, 16 Out of Service.
2. The Dalles Dam (as of May 28, 2017): Units 2, 12, 15, 16 Out of Service.
3. John Day Dam (as of May 31, 2017): Units 3, 5, 6, Out of Service.
4. McNary Dam (as of May 25, 2017): Unit 13 Out of Service.
5. Ice Harbor Dam (as of May 25, 2017): Units 2 and 4 Out of Service.
6. Lower Monumental Dam (as of May 25, 2017): Units 1 and 5 Out of Service.

7. Little Goose Dam (as of May 18, 2017): Unit 5 Out of Service.

8. Lower Granite Dam (as of May 25, 2017): Units 1 Out of service.

Water Supply

Precipitation throughout the Columbia Basin has varied between 37% and 76% of average at individual sub-basins over May. Precipitation above The Dalles has been 66% of average over May. Over the 2017 water year, precipitation has ranged between 109% and 136% 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 1-30, 2017		Water Year 2017 October 1, 2016 to May 30, 2017	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.15	73	34.8	122
Snake River Above Ice Harbor	1.29	56	23.1	127
Columbia Above The Dalles	1.55	66	26.5	122
Kootenai	1.83	62	35.7	127
Clark Fork	2.11	73	22.3	109
Flathead	1.43	43	35.1	130
Pend Oreille River Basin above Waneta Dam	1.83	60	30.5	123
Salmon River Basin	2.18	76	30.6	133
Upper Snake Tributaries	1.06	37	26.7	129
Clearwater	2.19	59	38.6	117
Willamette River above Portland	3.04	76	80.6	136

Table 2 displays the June 2nd ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The June 2nd ESP forecast at The Dalles between April and August is 114,642 Kaf (131% of average).

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

Location	June 2, 2017 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	131	114,642
Grand Coulee (Apr-Aug)	124	70,287
Libby Res. Inflow, MT (Apr-Aug)	127 122*	7,501 7,654*
Hungry Horse Res. Inflow, MT (Apr-Aug)	119	2,313
Lower Granite Res. Inflow (Apr- July)	144	28,668
Brownlee Res. Inflow (Apr-July)	187	10,248
Dworshak Res. Inflow (Apr-July)	118 122*	2,847 2,984*

* Denotes COE April Forecast

Grand Coulee Reservoir is at 1,259.3 feet (6-1-17) and has refilled 10.0 feet over the last week. Outflows at Grand Coulee have ranged between 190.9 Kcfs and 204.8 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,400.3 feet (6-1-17) and has refilled 2.7 feet over the past week. Daily average outflows at Libby Dam have been 18.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,539.8 feet (6-1-17) and has refilled 3.1 feet last week. Outflows at Hungry Horse have been 9.7-10.5 Kcfs over the last week.

Dworshak is currently at an elevation of 1,578.5 feet (6-1-17) and has refilled 10.0 feet over the last week. Dworshak outflows over the last week ranged between 3.7-6.2 Kcfs.

The Brownlee Reservoir was at an elevation of 2,060.8 feet on June 2, 2017, and refilled 8.6 feet last

week. Outflows at Hells Canyon have ranged between 37.5 and 38.9 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 149.6 last week and 139 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 425.2 Kcfs and 276.9 Kcfs at Priest Rapids. Over the spring season, flows at McNary Dam have been 386.3 Kcfs and Priest Rapids Dam flows were 242.5 Kcfs.

Spill

Flows in the Snake River have increased over the past week at Lower Granite, relative to the week prior. Dworshak Dam continues its refill operation, with discharge over the week reducing from 6.2 Kcfs (with 1.8 Kcfs of that outflow as spill), to 3.7 Kcfs (and no spill by week's end). Hells Canyon Complex flows have decreased, with outflows at Hells Canyon ranging between 28.7 Kcfs and 35.9 Kcfs over the last four days. Current outflow projections show flow 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 49.9 Kcfs to 85.7 Kcfs. At Little Goose Dam the Biological Opinion spill is 30% of flow but, as a consequence of the flow, unit outages and screen cleaning, spill ranged from 38% to 52% of average daily flow. Spill at Lower Monumental Dam ranged from 58 to 103 Kcfs. At Ice Harbor spill ranged from 88 Kcfs to 118 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 60% to 62% of daily average flow. At John Day Dam spill averaged between 38% and 42% of average daily flow. At The Dalles Dam spill ranged from 49% to 56% of average daily flow. Bonneville Dam spill was 224 to 270 Kcfs.

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

At Dworshak Dam, tailrace TDG levels have been near 108%, but should decrease as spill

stops. TDG supersaturation at the Lower Granite Dam forebay monitor has ranged between 105% and 108% 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 often exceeding TDG criteria at projects in the Snake and Columbia rivers. However, because flows generally averaged less than the week before and some turbine units were returned to service, observed high gas supersaturation levels were lower than the week before. Over the past week the tailwater TDG supersaturation (average of 12 highest hourly levels in a calendar day) ranged from 120% to 129% at Lower Granite Dam; 120% to 127% at Little Goose Dam; 121% to 127% at Lower Monumental Dam; and, 121 to 125% at Ice Harbor Dam. TDG supersaturation levels have also remained high at the Middle Columbia projects, ranging from 124% to 125% at the tailwater of McNary Dam; 121% to 125% below John Day Dam; 122% to 124% at The Dalles Dam; and, 125% to 128% at the Cascade Island gage below Bonneville Dam. Similar to the federal hydrosystem, TDG supersaturation levels have been high prior at the Upper Columbia over the last week, but decreased a little due to Grand Coulee Reservoir beginning to refill (114% yesterday in the forebay of Wells Dam). TDG downstream remained near, or above, 125% in the tailraces of Rocky Reach and Rock Island 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 the 6/01/17 sample showed no fish with signs of GBT. At Little Goose Dam no fish were detected with signs of GBT in the exam conducted on 5/29/17. At Lower Monumental Dam, 1% of fish examined were detected with signs of GBT on 5/31/17.

At Bonneville Dam 3% of the sample on 5/27/17 was observed with Rank 1 levels of GBT in their fins. At McNary Dam no fish showed signs of GBT on exams taken on 5/30/17. 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 5/30/17 and 6/01/17 showed 14% and 19% 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 River Trap ended this week while sampling at the Imnaha River Trap continued.

This week's samples at Bonneville Dam (BON) were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook at BON was about 7,400 per day, which is an increase over last week's daily average passage index of about 5,000. Passage of spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) all decreased this week, when compared to the previous week. This week's daily

average passage indices for these four species were 6,500, 2,200, 1,100, and 1,900 per day, respectively. Last week's daily average passage indices were 23,700 for yearling Chinook, 5,400 for coho, 4,900 for sockeye, and 1,700 for steelhead. Finally, Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of about 60 per day. This is a decrease over last week's daily average collection of just over 400 per day. No ammocoetes were encountered at BON this week.

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 yearling Chinook and steelhead were 11,400 and 10,700 per day, respectively. However, both of these were decreases from the previous week. Last week's daily average passage indices for yearling Chinook and steelhead were 34,300 and 20,400 per day, respectively. Sockeye and coho passage also decreased this week, when compared to last week. This week's daily average passage indices for these two species were 3,400 and 1,600 per day, respectively. Last week's daily average passage indices were about 7,000 for coho and 5,300 for sockeye. Passage of subyearling Chinook increased this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at JDA was about 6,700 per day, whereas that for last week was about 3,400 per day. Finally, both Pacific lamprey ammocoetes and macrophthalmia were encountered in this week's samples. Pacific ammocoetes were encountered in three of this week's samples while macrophthalmia were encountered in all four of this week's samples. This week's daily average collection for Pacific ammocoetes was about 50 per day, while that for macrophthalmia was about 530 per day.

Sampling at McNary Dam (MCN) is also every-other-day. This week's samples at MCN were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 20,200 per day, which is a substantial increase over last week's daily average passage index of about 5,800 per day. Passage of spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) all decreased this week, when compared to the previous week. This week's daily average passage indices were about 10,000, 3,600, 2,600, and 4,100 per day, respectively.

Last week's daily average passage indices were 36,800 for yearling Chinook, 7,050 for coho, 7,900 for sockeye, and 5,600 for steelhead. 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 about 440 fish per day, which is an increase over last week's daily average of 270 per day.

This week's samples at Lower Granite Dam (LGR) were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was nearly 52,000 per day, which is a substantial increase over last week's daily average passage index of about 1,300 per day. Yearling Chinook and sockeye passage decreased this week, when compared to the previous week. This week's passage indices for these two species were 4,100 and 300 per day, respectively. Last week's daily average passage indices were 7,000 for yearling Chinook and 720 for sockeye. Coho and steelhead passage this week was similar to last week, with daily average passage indices of 2,200 for coho and 14,500 for steelhead. Finally, both Pacific lamprey ammocoetes and macrophthalmia were collected at LGR this week. In all, five ammocoetes and two macrophthalmia were collected 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. This week's samples at LGS were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was 28,600 per day, which was a substantial increase over last week's daily average passage index of only 230 per day. Passage of spring migrants (i.e., yearling Chinook, coho, sockeye, and steelhead) all decreased this week when compared to the previous week. This week's daily average passage indices for these four species were 4,700, 1,750, 540, and 7,450 per day, respectively. Last week's daily average passage indices were 12,900 for yearling Chinook, 2,850 for coho, 1,030 for sockeye, and 13,400 for steelhead. Finally, Pacific lamprey ammocoetes were encountered in four of this week's samples while macrophthalmia were encountered in only one of this week's samples.

Similar to recent years, sampling at Lower Monumental Dam (LMN) was every-third-day from April 1st to April 16th, every-other-day from April 16th

until transportation began, at which time sampling switched to every day. This week's samples at LMN were again dominated by steelhead. This week's daily average passage index for steelhead was about 11,000 per day, which is a slight increase over last week's daily average passage index of about 10,100 per day. Passage of all other spring migrants (i.e., yearling Chinook, coho, and sockeye) decreased this week, when compared to last week. This week's daily average passage indices for these three species were about 3,900, 1,000, and 400 per day, respectively. Last week's daily average passage indices were 7,250 for yearling Chinook, 1,800 for coho, and 750 for sockeye. Passage of subyearling Chinook increased substantially this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at LMN was nearly 8,600 per day, whereas that for last week was only 60 per day. Finally, Pacific lamprey ammocoetes were encountered in two (May 27th and May 31st) of this week's samples while no macrophthalmia were encountered at LGS this week.

This week's collections at Rock Island Dam (RIS) were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 835 per day, which is an increase over last week's daily average passage index of about 400 per day. Passage of most spring migrants (i.e., yearling Chinook, coho, and steelhead) all decreased this week, when compared to last week. This week's daily average passage indices for these three species were 80, 660, and 240 per day, respectively. Last week's daily average passage indices were 400 for yearling Chinook, 1,725 for coho, and 760 for steelhead. Sockeye passage this week was similar to last week, with a daily average passage index of about 120 smolts per day. Finally, two total Pacific lamprey ammocoetes and four total macrophthalmia were collected 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. Sampling at GRN for the 2017 season was terminated after the sample on May 27th. The last two samples at GRN (May 26th and 27th) were dominated by yearling Chinook, with a daily average collection of 35 fish. The daily average collection for steelhead over the last two days was nearly 20 fish, while that for coho was just over 10 per day. Subyearling Chinook were encountered in each of the last two samples but in

very low numbers. Finally, no lamprey juveniles were encountered at GRN over these last two days.

Sampling from the Snake River Trap at Lewiston (LEW) and the Salmon River Trap at Whitebird (WTB) has already been terminated for the 2017 SMP season. Sampling at both of these traps was terminated due to high flows and high debris loads. Sampling at LEW was terminated in March while sampling at WTB was terminated after the sample on May 5th.

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 June 1st. However, due to high flows in the Imnaha River over the last several weeks, sampling at IMN has been intermittent. The most recent days where sampling has been possible were May 27th through May 29th. Although sampling was possible during this time, it was limited to about 10 hours per day. Over these three days, samples at IMN were dominated by steelhead, with a daily average collection of about 70 fish per day. Yearling and subyearling Chinook were also collected during this three day period but in very low numbers. Finally, no Pacific lamprey juveniles were collected over these three days.

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 620,500 subyearling fall Chinook smolts were scheduled for release to this zone this week. Of these, approximately 400,000 (64%) were scheduled to be released into the Grande Ronde River while the remaining 220,500 (36%) were scheduled to be released directly from Lyons Ferry Hatchery, which is located on the Snake River below Little Goose Dam. Of the 400,000 subyearling fall Chinook smolts that were scheduled to be released into the Grande Ronde River,

approximately 50% were unmarked, which means that distinguishing them from wild smolts will be difficult.

Nearly 1.4 million subyearling fall Chinook smolts are scheduled to be released to this zone over the next two weeks. Of these, nearly 1.19 million (86%) are scheduled to be released into the Clearwater River and its tributaries. The remaining 200,000 (14%) are scheduled to be released from the Captain John Rapids Acclimation Facility on the Snake River. All of these releases are scheduled to occur from June 6th through June 10th. Of the 1.4 million smolts, approximately 26% are expected to be 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. Several volitional releases of coho and steelhead juveniles to the Wenatchee River were scheduled to end this week. All of these releases began in late April. Other than these volitional releases, there were no new releases scheduled for this zone this week. No new releases are scheduled for this zone over the next two weeks. However, there is one volitional release of coho to the Wenatchee River that is scheduled to end on or around June 10th. This coho release began in late April.

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 yearling spring Chinook and coho were scheduled to end this week. All of these releases began in mid-April. The only new release that was scheduled for this zone this week was a release of approximately 4.0 million subyearling fall Chinook smolts to the Klickitat River, which was scheduled to begin on or around June 1st. Nearly 10.3 million subyearling fall Chinook smolts are scheduled to be released to this zone over the next two weeks. Of these, about 3.7 million (33%) will be released from Ringold Springs Hatchery and 6.9 million (67%) will be released from Priest Rapids Hatchery. Both of these hatcheries are located on the Columbia River, between McNary Dam and Priest Rapids Dam.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries below Bonneville Dam. Approximately 11.0 million subyearling fall Chinook smolts were scheduled to be released into this zone this week. These fall Chinook

releases were scheduled to occur throughout this river zone, including releases to the Cowlitz (42%), Kalama (31%), Washougal (17%), and Grays (9%) rivers. A very small portion (<0.5%) of these fall Chinook smolts are scheduled to be released at or near the Columbia River estuary. In addition, about 6,000 coho smolts were scheduled to be released into this zone this week. These coho releases were 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). No new releases are scheduled for this zone over the next two weeks.

Adult Passage

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 1,702 and 3,034 adult Chinook in the last week. The 2017 summer Chinook count of 1,702 is about 81.5% of the 2016 count, while having 60 more fish than the 10-year average count. The 2017 Bonneville Dam summer Chinook jack count of 298 has 90 more fish than the 2016 count and 14 more fish than the 10-year average count. A total of 83,624 adult spring Chinook have been counted at Bonneville Dam this year. In 2016, 137,215 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2017 adult spring Chinook count at Bonneville Dam is about 60.9% of the 2016 count and 55.5% of the 10-year average count of 150,783. The 2017 spring Chinook jack count of 18,110 is about 1.6 times greater than the 2016 count of 11,145, while being about 70.4% of the 10-year average count of 25,708. At Willamette Falls, 15,186 adult spring Chinook have been counted so far this year. In 2016, 15,652 adult spring Chinook were counted at Willamette Falls. This year's count has 466 fewer fish than the 2016 count and 5,546 fewer fish than the 10-year average count of 20,732. As of June 1st, a total of 55,439 adult spring Chinook have been counted at The Dalles Dam and 35,025 have been counted at McNary Dam. The Dalles Dam 2017 adult spring Chinook count is about 54.3% of the 2016 count and 48% of the 10-year average count. The 2017 McNary Dam adult spring Chinook count is about 45% of the 2016 count and 41.2% of the 10-year average count. A total of 10,847 spring chinook have been counted at Lower Granite Dam as of June 1st. The 2017 Lower Granite Dam adult spring Chinook count is about 21% of the 2016 count and 21.8% of the 10-year average count.

The 2017 Bonneville Dam adult steelhead count of 3,265 is about 60.8% of the 2016 count of 5,372 and 58.6% of the 10-year average count of 5,571. The 2017 Bonneville Dam adult wild steelhead count of 1,049 has 965 fewer fish than the 2016 count of 2,014 and 630 fewer fish than the 10-year average count of 1,679. 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 0 to 4 adults per day last week. This year's Lower Granite steelhead count of 7,303 is about 1.3 times greater than the 2016 count of 5,473, while being 80.8% of the 10-year average count of 9,039. The 2017 Lower Granite Dam adult wild steelhead count of 3,047 has 69 fewer fish than the 2016 count of 3,116 and has 546 fewer fish than the 10-year average count of 3,593. At Willamette Falls, the 2017 count for steelhead was 1,305 as of May 27th. This year's steelhead count is about 9.9% of the 2016 count of 13,204 and 11% of the 10-year average count of 11,832.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 2 and 41 last week. The 2017 adult sockeye count at Bonneville Dam of 109 is 14.9% of the 2016 count and 54.5% of the 10-year average count. A total of 5,104 lampreys have been counted at Bonneville Dam so far this year. The Bonneville 2017 lamprey count is about 1.4 times greater than the 2016 count of 3,688 and 4.2 times greater than the 10-year average count of 1,227.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: **5/20/2017** to **06/02/17**

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 (Clearwater River)	Snake River	SNAK
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2017	500,000	05-26-17	05-26-17	Cedar Flats Acclim.	Clearwater River M F	SNAK
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2017	225,000	05-20-17	05-20-17		Selway River	SNAK
Nez Perce Tribe Total					1,625,000					
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	Cowlitz River	LCOL
Washington Dept. of Fish and Wildlife	Fallert Creek Hatchery	CH0	FA	2017	3,583,300	05-20-17	05-31-17	Fallert Creek Hatchery	Kalama River	LCOL
Washington Dept. of Fish and Wildlife	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					14,816,072					
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 Total					4,532,000					
Grand Total					21,834,572					

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: 6/3/2017 to 6/16/2017

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	Zone
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2017	200,000	06-10-17	06-10-17	Cpt John Acclim Pond	Snake River	SNAK
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2017	225,000	06-06-17	06-06-17	Lukes Gulch Acclim. Nez Perce Tribal Hatchery	S Fk Clearwater River	SNAK
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2017	322,000	06-08-17	06-08-17	Nez Perce Tribal Hatchery	Clearwater River M F	SNAK
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2017	640,000	06-07-17	06-07-17	Nez Perce Tribal Hatchery	Clearwater River M F	SNAK
Nez Perce Tribe Total					1,387,000					
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2017	6,900,000	06-15-17	07-01-17	Priest Rapids Hatchery	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2017	3,368,500	06-14-17	06-27-17	Ringold Springs Hatchery	McNary Pool	MCOL
Washington Dept. of Fish and Wildlife Total					10,268,500					
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					106,937					
Grand Total					11,762,437					

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
05/19/2017	224.2	24.2	233.1	128.7	257.5	79.5	260.3	108.3	247.7	106.7	279.5	153.6	273.8	154.9
05/20/2017	226.2	28.9	229.6	103.1	254.2	75.6	259.6	103.9	255.8	119.2	281.8	147.6	276.7	171.8
05/21/2017	226.3	26.7	228.9	105.3	254.5	75.9	258.0	103.1	252.9	111.3	276.5	150.1	277.6	157.1
05/22/2017	204.2	29.8	209.5	104.0	241.0	61.8	250.0	94.1	249.9	109.0	271.0	140.6	277.8	169.5
05/23/2017	192.7	19.8	191.3	90.7	224.9	45.1	239.1	85.4	243.9	109.8	271.0	174.3	276.7	162.4
05/24/2017	186.1	11.5	192.0	96.7	229.5	51.2	240.7	92.8	247.8	110.0	255.9	155.1	264.3	162.8
05/25/2017	193.6	8.3	194.7	93.6	236.1	56.1	240.5	83.7	242.7	101.7	260.1	131.7	263.7	158.4
05/26/2017	197.4	6.4	201.2	106.1	239.2	59.1	246.2	92.6	247.4	108.8	267.0	135.0	273.5	152.9
05/27/2017	200.7	16.6	198.1	105.1	235.2	54.9	246.2	100.0	244.1	106.8	266.0	142.8	272.1	155.1
05/28/2017	204.8	1.5	205.9	99.6	243.4	63.4	250.1	104.9	248.1	117.0	272.4	150.5	279.7	164.8
05/29/2017	200.7	0.0	204.6	99.2	242.2	61.8	252.6	97.4	250.9	121.1	271.3	138.2	277.5	173.8
05/30/2017	200.0	1.8	203.5	110.4	242.4	62.7	252.2	111.3	257.8	121.4	279.5	146.7	286.5	177.4
05/31/2017	190.9	27.5	191.2	104.1	233.3	55.6	252.5	101.5	258.1	123.3	279.5	150.1	285.0	172.1
06/01/2017	186.4	12.5	189.1	86.3	227.2	47.0	239.3	88.6	246.8	112.9	269.9	169.9	276.6	140.4

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		
05/19/2017	6.3	1.8	---	41.7	123.3	36.6	120.0	38.1	122.6	53.7	126.8	84.2
05/20/2017	6.3	1.9	---	39.8	116.4	33.3	113.0	35.2	113.7	53.7	117.6	71.2
05/21/2017	6.3	1.8	---	38.2	115.6	42.0	112.9	33.9	113.0	53.1	115.1	60.5
05/22/2017	6.2	1.7	---	35.5	114.8	44.4	109.8	43.0	110.3	54.9	114.3	67.0
05/23/2017	6.2	1.9	---	33.2	123.6	43.7	119.3	43.2	119.6	60.8	121.3	78.3
05/24/2017	6.0	1.7	---	33.3	141.5	52.2	138.8	62.8	138.0	79.0	141.8	92.1
05/25/2017	6.2	1.8	---	31.8	158.6	68.3	155.8	74.6	157.0	88.1	156.6	101.2
05/26/2017	6.2	1.8	---	30.9	153.1	63.1	149.9	65.5	151.6	74.0	156.7	101.8
05/27/2017	6.2	1.8	---	29.2	146.7	56.7	141.9	57.3	141.5	64.1	148.5	93.5
05/28/2017	6.2	1.8	---	28.6	136.5	49.9	132.7	52.0	130.9	57.5	136.5	89.8
05/29/2017	6.1	1.8	---	28.7	141.0	51.4	135.9	51.8	137.0	58.9	141.2	88.2
05/30/2017	6.1	1.9	---	31.7	148.4	58.4	143.9	59.2	143.5	65.4	145.9	91.7
05/31/2017	5.4	1.8	---	37.0	163.6	73.4	160.2	80.7	161.1	82.8	166.1	110.9
06/01/2017	3.7	0.0	---	35.9	176.7	85.7	175.1	90.5	174.2	103.4	172.7	117.6

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2		
05/19/2017	409.3	260.4	415.1	168.3	403.1	240.7	423.2	223.4	70.3	117.1
05/20/2017	394.3	243.3	406.0	150.2	389.7	229.4	410.0	209.6	70.3	117.8
05/21/2017	385.5	230.4	388.7	145.8	371.1	216.1	402.4	205.3	65.5	119.2
05/22/2017	393.5	235.9	389.1	162.7	371.1	220.9	391.7	200.3	59.0	120.0
05/23/2017	394.8	235.6	400.6	166.0	378.2	219.3	395.3	201.9	61.7	119.3
05/24/2017	404.4	244.2	402.5	167.8	392.3	222.5	405.7	213.1	63.3	117.0
05/25/2017	429.6	263.4	437.1	196.4	419.0	212.3	435.7	242.0	65.4	115.9
05/26/2017	431.1	261.3	443.2	178.8	422.9	207.2	440.3	247.1	66.4	114.4
05/27/2017	418.7	250.2	426.7	163.3	412.5	218.5	432.1	239.9	64.1	115.8
05/28/2017	413.1	244.3	413.3	158.0	390.0	219.7	420.9	230.5	64.0	114.0
05/29/2017	418.3	249.7	418.9	160.8	400.0	217.8	414.5	224.1	66.6	111.5
05/30/2017	427.2	258.2	428.7	169.2	410.8	227.9	426.4	238.4	66.3	109.3
05/31/2017	438.1	268.7	439.9	184.1	426.9	228.7	446.9	265.4	65.7	103.4
06/01/2017	445.2	276.9	449.3	190.0	431.2	230.0	452.7	269.7	65.5	105.0

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											
	05/25/17	Chinook + Steelhead	101	3	3	2.97%	0.00%	3	0	0	0
	06/01/17	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/22/17	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	05/29/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental											
	05/24/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/31/17	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
McNary											
	05/22/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/24/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/30/17	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville											
	05/20/17	Chinook + Steelhead	100	4	4	4.00%	0.00%	4	0	0	0
	05/23/17	Chinook + Steelhead	100	5	5	5.00%	0.00%	2	3	0	0
	05/27/17	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	05/30/17	Chinook + Steelhead	91*	2	2			2	0	0	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/19	118.3	119.2	120.0	24	123.7	124.3	125.1	24	114.9	115.9	116.6	24	130.1	132.0	133.9	24	118.5	119.2	120.1	24
5/20	119.3	119.6	119.6	24	123.2	123.7	124.4	24	118.3	119.3	120.4	24	127.6	127.7	127.9	24	117.4	118.2	118.9	24
5/21	119.1	119.6	119.9	24	122.1	122.3	122.5	24	121.6	122.3	122.7	24	126.7	127.7	128.3	24	119.8	120.7	121.2	24
5/22	119.4	120.0	120.7	24	122.3	122.9	123.4	24	122.5	123.0	123.6	24	126.0	129.2	131.4	24	121.5	122.7	123.7	24
5/23	120.8	121.3	121.6	24	123.1	123.4	123.6	24	123.8	124.0	124.4	24	122.0	122.9	123.1	24	120.9	121.6	122.9	24
5/24	118.4	119.1	120.7	24	123.3	123.6	123.8	24	119.3	120.6	122.5	24	122.1	122.8	123.6	22	116.3	116.8	118.7	24
5/25	117.4	117.6	118.1	24	124.3	125.1	128.9	24	116.7	117.0	117.2	24	124.9	125.9	126.5	24	119.1	119.1	122.1	5
5/26	116.7	117.3	117.9	24	124.1	124.4	124.8	24	115.9	116.5	117.2	24	123.6	124.2	124.8	24	118.7	118.7	119.2	9
5/27	118.1	119.0	119.4	24	123.5	123.6	123.9	24	118.5	119.8	120.8	24	122.0	122.4	123.2	24	118.2	119.0	119.7	24
5/28	119.2	120.1	120.6	24	123.6	123.7	124.0	24	121.8	122.8	123.5	24	121.1	121.3	121.6	24	119.7	120.9	121.5	24
5/29	120.3	120.9	121.8	24	123.9	124.2	124.5	24	123.3	123.9	124.2	24	121.6	122.1	122.4	24	120.5	121.4	122.1	24
5/30	120.3	120.9	121.7	24	124.2	124.4	124.8	24	122.9	123.5	124.0	24	122.3	122.4	122.6	24	119.3	120.1	120.8	24
5/31	117.7	118.5	119.1	24	124.6	125.0	125.2	24	119.9	120.4	121.2	24	123.7	125.0	125.4	24	118.2	119.2	119.9	24
6/1	117.0	117.6	118.0	23	124.8	124.9	125.0	23	117.6	118.1	119.1	23	124.8	124.9	125.1	23	118.3	118.7	119.5	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		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/19	122.7	123.0	123.8	24	123.1	123.5	123.7	24	125.8	126.3	126.6	24	124.6	125.4	126.2	24	124.6	125.0	125.3	24
5/20	122.0	122.4	122.8	24	121.4	122.0	123.4	24	124.2	124.8	125.9	24	123.5	123.9	124.6	24	123.7	124.3	125.0	24
5/21	123.2	123.7	124.0	24	122.7	123.9	124.8	24	124.8	125.2	125.3	24	122.8	123.8	124.3	24	123.4	123.6	123.7	24
5/22	124.1	124.6	125.3	24	124.8	125.3	125.9	24	125.7	125.8	125.9	24	124.1	125.0	125.5	24	123.1	123.2	123.3	24
5/23	123.9	124.3	125.1	24	125.1	125.9	126.1	24	126.0	126.5	127.3	24	124.3	125.1	126.1	24	123.5	123.8	125.4	24
5/24	121.2	121.8	123.3	24	118.1	118.8	120.9	24	123.1	123.4	124.0	24	120.9	121.3	121.7	24	123.2	123.4	123.7	24
5/25	121.2	122.8	123.7	24	119.5	120.5	121.0	24	125.7	126.6	126.9	24	122.4	124.1	124.7	24	125.7	126.2	126.5	24
5/26	122.0	122.3	123.0	24	122.9	124.1	124.5	24	127.5	128.4	128.6	24	124.9	125.8	126.2	24	126.3	127.2	127.4	24
5/27	121.8	122.2	122.6	24	123.2	123.7	124.1	24	127.3	127.6	128.3	24	126.3	126.9	127.3	24	125.4	125.8	127.3	24
5/28	123.0	123.8	124.3	24	123.6	123.9	124.2	24	126.7	126.9	127.0	24	125.4	126.3	127.1	24	124.6	124.7	125.0	24
5/29	123.6	124.1	125.0	24	123.1	123.3	124.0	24	125.8	126.2	126.5	24	124.0	124.5	125.1	24	124.3	124.4	124.7	24
5/30	122.7	123.2	123.7	24	120.0	121.4	122.9	24	125.6	126.1	126.5	24	123.2	123.8	124.5	24	124.9	125.6	126.1	24
5/31	121.3	121.9	122.8	24	119.3	120.1	120.5	24	126.6	127.6	127.9	24	124.5	125.7	126.3	24	126.6	127.8	128.9	24
6/1	121.5	121.9	122.4	23	120.7	120.9	121.1	23	127.3	127.5	127.6	23	125.6	125.8	126.0	23	125.6	126.0	126.2	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 6/2/2017 13:02

Two-Week Summary of Passage Indices

* One or more of the sites on this date had an incomplete or biased sample.

See Sampling Comments: <http://www.fpc.org/currentDaily/smpcomments.htm>For clip information see: <http://www.fpc.org/CurrentDaily/catch.htm>For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmpsubmitdata.asp>

COMBINED YEARLING CHINOOK											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/19/2017	---	16	69	---	10,215	18,346	12,515	720	62,621	---	31,657
05/20/2017 *	---	10	68	---	6,371	21,331	16,195	578	---	46,377	24,596
05/21/2017 *	---	1	79	---	5,968	14,990	6,155	473	33,483	---	24,566
05/22/2017	---	---	73	---	4,550	11,370	6,155	308	---	37,507	28,707
05/23/2017 *	---	---	79	---	4,909	10,835	2,802	325	30,758	---	23,956
05/24/2017	---	---	82	---	6,595	7,655	3,780	295	---	19,134	20,207
05/25/2017	---	---	79	---	10,171	5,702	3,138	216	20,201	---	12,489
05/26/2017	---	---	42	---	9,949	4,452	5,831	150	---	12,411	9,327
05/27/2017 *	---	2	28	---	8,225	4,615	5,272	121	14,677	---	9,748
05/28/2017 *	---	1	---	---	3,273	6,427	4,351	103	---	15,586	9,196
05/29/2017 *	---	0	---	---	2,473	4,579	4,513	63	8,365	---	7,668
05/30/2017	---	---	---	---	1,433	7,346	2,328	34	---	9,752	4,942
05/31/2017	---	---	---	---	1,532	3,524	3,185	65	6,575	---	1,795
06/01/2017	---	---	---	---	1,856	1,867	1,683	26	---	7,789	2,716
06/02/2017	---	---	---	---	1,374	734	---	29	6,465	---	1,737
Total:	0	30	599	0	78,894	123,773	77,903	3,506	183,145	148,556	213,307
# Days:	0	6	9	0	15	15	14	15	8	7	15
Average:	0	5	67	0	5,260	8,252	5,565	234	22,893	21,222	14,220
YTD	33,704	22,191	21,106	8	3,987,181	2,393,509	2,869,012	50,507	1,573,299	1,709,068	1,937,632

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)
05/19/2017	---	0	2	---	73	346	176	54	5,170	---	4,113
05/20/2017 *	---	0	4	---	217	0	0	135	---	3,246	4,040
05/21/2017 *	---	0	3	---	402	0	0	67	6,545	---	3,058
05/22/2017	---	---	2	---	343	0	0	196	---	4,626	4,113
05/23/2017 *	---	---	1	---	1,267	830	0	95	2,812	---	5,243
05/24/2017	---	---	1	---	1,841	326	0	974	---	2,273	8,402
05/25/2017	---	---	1	---	4,835	97	251	1,239	8,580	---	6,071
05/26/2017	---	---	2	---	39,492	949	202	1,169	---	3,839	7,878
05/27/2017 *	---	0	1	---	40,790	3,477	439	936	11,409	---	7,844
05/28/2017 *	---	0	---	---	51,056	17,152	781	532	---	3,581	5,305
05/29/2017 *	---	1	---	---	60,430	23,947	3,211	646	14,467	---	6,193
05/30/2017	---	---	---	---	50,963	51,553	6,267	640	---	7,511	6,858
05/31/2017	---	---	---	---	47,676	30,369	12,995	1,135	34,789	---	8,216
06/01/2017	---	---	---	---	72,392	72,956	36,176	783	---	11,753	9,565
06/02/2017	---	---	---	---	31,897	85,106	---	547	50,915	---	9,107
Total:	0	1	17	0	403,674	287,108	60,498	9,148	134,687	36,829	96,006
# Days:	0	6	9	0	15	15	14	15	8	7	15
Average:	0	0	2	0	26,912	19,141	4,321	610	16,836	5,261	6,400
YTD	0	3	40	0	415,588	288,477	66,335	12,139	205,620	60,962	1,512,156

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)
05/19/2017	---	0	22	---	2,399	3,803	4,407	2,017	10,052	---	6,233
05/20/2017 *	---	0	16	---	1,665	3,971	3,313	2,138	---	8,116	5,027
05/21/2017 *	---	0	8	---	939	3,171	993	1,950	6,278	---	4,670
05/22/2017	---	---	12	---	1,460	1,749	1,154	1,817	---	7,270	5,676
05/23/2017 *	---	---	9	---	1,504	2,160	801	1,476	4,840	---	6,211
05/24/2017	---	---	40	---	2,761	2,607	1,437	1,457	---	5,621	5,598
05/25/2017	---	---	63	---	6,336	2,513	251	1,219	7,020	---	4,317
05/26/2017	---	---	11	---	3,430	1,801	1,093	551	---	3,214	2,620
05/27/2017 *	---	0	10	---	3,693	1,824	1,721	432	5,256	---	2,513
05/28/2017 *	---	0	---	---	1,964	3,126	1,525	830	---	2,889	2,710
05/29/2017 *	---	0	---	---	1,391	1,687	955	806	3,702	---	4,129
05/30/2017	---	---	---	---	956	1,481	1,074	762	---	3,624	1,402
05/31/2017	---	---	---	---	1,362	880	397	662	1,930	---	998
06/01/2017	---	---	---	---	2,413	1,452	481	595	---	4,034	898
06/02/2017	---	---	---	---	978	1,251	---	397	1,616	---	508
Total:	0	0	191	0	33,251	33,476	19,602	17,109	40,694	34,768	53,510
# Days:	0	6	9	0	15	15	14	15	8	7	15
Average:	0	0	21	0	2,217	2,232	1,400	1,141	5,087	4,967	3,567
YTD	0	0	2,232	0	124,051	81,340	66,050	32,250	82,514	88,502	351,280

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)
05/19/2017	---	245	35	---	20,822	11,750	13,749	705	6,327	---	2,741
05/20/2017 *	---	229	26	---	20,705	15,288	13,619	853	---	23,420	3,591
05/21/2017 *	---	56	35	---	14,619	11,100	10,721	1,018	5,496	---	3,848
05/22/2017	---	---	29	---	10,475	17,198	7,886	819	---	24,784	2,632
05/23/2017 *	---	---	26	---	11,796	17,230	9,008	656	3,877	---	1,533
05/24/2017	---	---	29	---	15,798	12,703	8,267	582	---	12,973	2,373
05/25/2017	---	---	57	---	22,092	8,698	7,281	669	6,580	---	2,451
05/26/2017	---	---	27	---	20,924	5,397	15,145	331	---	10,982	1,839
05/27/2017 *	---	62	11	---	25,683	9,906	14,388	247	5,127	---	1,371
05/28/2017 *	---	52	---	---	24,546	15,793	15,321	298	---	12,574	2,018
05/29/2017 *	---	92	---	---	6,491	8,678	12,410	226	4,134	---	1,917
05/30/2017	---	---	---	---	7,485	5,802	7,879	171	---	9,290	2,338
05/31/2017	---	---	---	---	6,981	3,696	5,776	216	3,093	---	1,834
06/01/2017	---	---	---	---	9,652	2,904	6,370	201	---	10,014	2,245
06/02/2017	---	---	---	---	7,826	5,419	---	221	2,424	---	1,186
Total:	0	736	275	0	225,895	151,562	147,820	7,213	37,058	104,037	33,917
# Days:	0	6	9	0	15	15	14	15	8	7	15
Average:	0	123	31	0	15,060	10,104	10,559	481	4,632	14,862	2,261
YTD	7,117	15,702	7,614	1	4,012,949	1,810,834	2,489,856	29,208	433,672	1,295,036	256,685

Two-Week Summary of Passage Indices

Date	COMBINED SOCKEYE											
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/19/2017	---	0	0	---	1,018	871	1,234	213	14,073	---	4,985	
05/20/2017	*	---	0	0	---	869	1,479	2,208	244	---	7,189	4,488
05/21/2017	*	---	0	0	---	805	1,441	397	154	8,635	---	6,281
05/22/2017	*	---	---	0	---	859	1,166	577	129	---	4,296	5,017
05/23/2017	*	---	---	0	---	238	996	400	95	4,585	---	5,485
05/24/2017	*	---	---	0	---	690	655	332	84	---	4,324	4,255
05/25/2017	*	---	---	0	---	584	580	126	146	4,162	---	3,851
05/26/2017	*	---	---	0	---	616	570	567	155	---	1,518	1,616
05/27/2017	*	---	0	0	---	671	785	549	200	3,846	---	1,523
05/28/2017	*	---	0	---	---	0	762	372	95	---	1,465	1,254
05/29/2017	*	---	0	---	---	309	485	347	114	3,024	---	1,475
05/30/2017	*	---	---	---	---	0	579	179	83	---	1,515	747
05/31/2017	*	---	---	---	---	341	269	99	114	1,034	---	703
06/01/2017	*	---	---	---	---	0	315	481	93	---	2,017	600
06/02/2017	*	---	---	---	---	0	521	---	58	1,616	---	381
Total:		0	0	0	0	7,000	11,474	7,868	1,977	40,975	22,324	42,661
# Days:		0	6	9	0	15	15	14	15	8	7	15
Average:		0	0	0	0	467	765	562	132	5,122	3,189	2,844
YTD		6	0	0	0	59,830	23,286	32,559	10,762	153,003	113,462	140,904

Date	COMBINED LAMPREY JUVENILES											
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR† (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
05/19/2017	---	0	0	---	1	0	100	1	400	---	400	
05/20/2017	*	---	0	0	---	0	100	0	---	1,286	1,025	
05/21/2017	*	---	0	0	---	0	0	0	300	---	640	
05/22/2017	*	---	---	0	---	0	0	0	---	500	375	
05/23/2017	*	---	---	0	---	0	100	0	400	---	225	
05/24/2017	*	---	---	0	---	1	200	0	---	1,313	238	
05/25/2017	*	---	---	0	---	0	50	0	1	0	33	
05/26/2017	*	---	---	0	---	1	150	0	2	---	250	100
05/27/2017	*	---	0	0	---	0	50	40	1	150	---	40
05/28/2017	*	---	0	---	---	1	50	0	0	---	275	16
05/29/2017	*	---	0	---	---	4	0	0	0	225	---	40
05/30/2017	*	---	---	---	---	0	0	0	1	---	320	57
05/31/2017	*	---	---	---	---	1	50	100	1	950	---	55
06/01/2017	*	---	---	---	---	0	1	0	1	---	1,480	99
06/02/2017	*	---	---	---	---	2	0	---	2	2,100	---	210
Total:		0	0	0	0	11	751	240	10	4,525	5,424	3,553
# Days:		0	6	9	0	15	15	14	15	8	7	15
Average:		0	0	0	0	1	50	17	1	566	775	237
YTD		0	3	4	0	55	3,351	2,240	34	20,805	41,481	38,063

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:

6/2/17 1:03 PM

05/19/17 TO 06/02/17

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	237,950	49,685	20,350	141,017	4,500	453,502
	Sum of NumberBarged	220,018	46,573	19,813	126,999	4,459	417,862
	Sum of NumberBypassed	20	2,126	0	10,525	0	12,671
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	43	5	1	6	4	59
	Sum of FacilityMorts	1,797	337	36	73	37	2,280
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,840	342	37	79	41	2,339
LGS	Sum of NumberCollected	153,090	76,889	20,106	92,311	7,025	349,421
	Sum of NumberBarged	111,572	76,420	19,486	89,681	6,722	303,881
	Sum of NumberBypassed	11	0	0	0	0	11
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	18	2	1	1	1	23
	Sum of FacilityMorts	823	117	19	29	60	1,048
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	841	119	20	30	61	1,071
LMN	Sum of NumberCollected	27,900	40,863	10,400	76,527	4,130	159,820
	Sum of NumberBarged	27,880	40,627	10,360	76,436	4,079	159,382
	Sum of NumberBypassed	0	0	0	0	0	0
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	5	2	6	1	14
	Sum of FacilityMorts	20	231	38	85	50	424
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	20	236	40	91	51	438
Total Sum of NumberCollected		418,940	167,437	50,856	309,855	15,655	962,743
Total Sum of NumberBarged		359,470	163,620	49,659	293,116	15,260	881,125
Total Sum of NumberBypassed		31	2,126	0	10,525	0	12,682
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		61	12	4	13	6	96
Total Sum of FacilityMorts		2,640	685	93	187	147	3,752
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		2,701	697	97	200	153	3,848

YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/2/17 1:03 PM

TO: 06/02/17

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	244,758	2,356,148	71,600	34,694	2,298,061	5,005,261
	Sum of NumberBarged	223,267	971,526	60,125	18,859	917,561	2,191,338
	Sum of NumberBypassed	3,558	1,381,272	10,900	15,644	1,376,863	2,788,237
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	48	90	4	11	52	205
	Sum of FacilityMorts	1,813	2,598	71	180	169	4,831
	Sum of ResearchMorts	0	18	0	0	2	20
	Sum of TotalProjectMorts	1,861	2,706	75	191	223	5,056
LGS	Sum of NumberCollected	153,847	1,334,107	40,323	13,041	1,041,879	2,583,197
	Sum of NumberBarged	111,819	491,521	36,483	9,184	287,515	936,522
	Sum of NumberBypassed	513	837,161	3,200	3,296	751,526	1,595,696
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	18	29	1	7	10	65
	Sum of FacilityMorts	831	5,046	39	312	228	6,456
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	849	5,075	40	319	238	6,521
LMN	Sum of NumberCollected	30,900	1,449,884	31,800	16,530	1,281,806	2,810,920
	Sum of NumberBarged	30,279	922,242	30,960	11,814	697,137	1,692,432
	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	37	2	5	30	74
	Sum of FacilityMorts	21	1,045	38	114	376	1,594
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	21	1,082	40	119	406	1,668
Total Sum of NumberCollected		429,505	5,140,139	143,723	64,265	4,621,746	10,399,378
Total Sum of NumberBarged		365,365	2,385,289	127,568	39,857	1,902,213	4,820,292
Total Sum of NumberBypassed		4,671	2,707,926	14,900	23,537	2,688,474	5,439,508
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		66	156	7	23	92	344
Total Sum of FacilityMorts		2,665	8,689	148	606	773	12,881
Total Sum of ResearchMorts		0	18	0	0	2	20
Total Sum of TotalProjectMorts		2,731	8,863	155	629	867	13,245

Cumulative Adult Passage at Mainstem Dams Through: 06/01

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	06/01	83624	18110	137215	11145	150783	25708	1702	298	2089	208	1642	284	0	0	0	0	0	0
TDA	06/01	55439	12086	102188	9682	115591	21260	0	0	0	0	0	0	0	0	0	0	0	0
JDA	06/01	42795	11682	89098	7885	98234	19231	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/31	35025	4972	77764	6464	85011	14625	0	0	0	0	0	0	0	0	0	0	0	0
IHR	06/01	21573	5020	60346	4298	60796	9256	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/01	19619	4735	57944	5174	58839	8337	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/01	12578	3576	53246	5118	53111	8638	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/01	10847	2447	51536	4172	49846	8855	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/31	3946	222	12259	714	14304	1308	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/31	3144	136	12888	530	14400	1425	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/31	2481	57	12422	497	13322	1650	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/31	1473	27	5208	260	5313	688	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/31	863	41	3664	448	3693	688	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/27	15186	739	15652	713	20732	653	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.	2017	2016	10-Yr Avg.	2017	2016	10-Yr Avg.	2017	2016	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	06/01	0	0	0	0	0	0	109	732	200	3265	5372	5571	1049	2014	1679	5104	3688	1227
TDA	06/01	0	0	0	0	0	0	26	224	62	1282	371	2743	448	193	1085	3	37	11
JDA	06/01	0	0	0	0	0	1	33	147	38	529	391	5264	338	264	2078	293	328	60
MCN	05/31	0	0	0	0	1	0	1	11	3	2527	475	6487	755	300	2123	6	46	5
IHR	06/01	0	0	0	0	0	0	0	0	0	1070	1367	5579	502	708	1560	5	3	0
LMN	06/01	0	0	0	0	0	0	0	0	0	1440	1439	8253	696	996	2812	2	0	0
LGS	06/01	0	0	0	0	0	0	0	0	0	1488	3409	5066	657	1974	2541	0	-2	0
LGR	06/01	0	0	0	0	0	0	0	0	0	7303	5473	9039	3047	3116	3593	0	-1	0
PRD	05/31	0	0	0	0	0	0	0	3	0	48	23	48	0	0	0	50	149	7
WAN	05/31	0	0	0	0	0	0	0	9	0	32	30	103	0	0	0	9	80	2
RIS	05/31	0	0	0	0	0	0	0	1	0	59	43	116	17	23	57	0	0	0
RRH	05/31	0	0	0	0	0	0	0	1	0	123	89	321	29	29	212	0	0	0
WEL	05/31	0	0	0	0	0	0	0	0	0	35	59	71	23	25	50	0	1	0
WFA	05/27	0	0	0	0	0	0	0	0	0	1305	13204	11832	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.

