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

Fish Passage Center

Weekly Report #16–9

May 13, 2016

Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 14% and 101% of average at individual sub-basins over May. Precipitation above The Dalles has been 53% of average over May. Over the 2016 water year, precipitation has ranged between 90% and 110% of average.

Table 1. Summary of May precipitation and cumulative October through May 12 precipitation with respect to average (1981–2010) at select locations within the Columbia and Snake River Basins.

Location	Water Year 2016 May 1–12, 2016		Water Year 2016 October 1, 2015 to May 12, 2016	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.63	58	26.7	100
Snake River above Ice Harbor	0.45	53	16.6	99
Columbia above The Dalles	0.46	53	20.6	101
Kootenai	0.64	60	26.4	101
Clark Fork	0.52	49	17.2	92
Flathead	0.67	55	26.1	104
Pend Oreille River Basin above Waneta Dam	0.57	51	23.0	100
Salmon River Basin	0.39	37	20.9	98
Upper Snake Tributaries	1.07	101	17.1	90
Clearwater	0.54	40	31.5	102
Willamette River above Portland	0.20	14	62.5	110

Snowpack within the Columbia Basin has been declining. Snowpack in the Columbia River for basins above the Snake River confluence is 53% of average. For Snake River Basins the snowpack is 56% of average. For lower Columbia Basins between McNary and Bonneville Dam snowpack is 28% of average.

Table 2 displays the May 12th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 12th ESP forecast at The Dalles between April and August is 85,473 Kaf (98% of average).

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

Location	May 12, 2016 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	98	85,473
Grand Coulee (Apr–Aug)	98	55,836
Libby Res. Inflow, MT (Apr–Aug)	94 99*	5,521 5,831*
Hungry Horse Res. Inflow, MT (Apr–Aug)	94	1,820
Lower Granite Res. Inflow (Apr–July)	89	17,645
Brownlee Res. Inflow (Apr–July)	79	4,341
Dworshak Res. Inflow (Apr–July)	98 86*	2,380 2,090*

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,254.7 feet (5-12-16) and has refilled 6.0 feet over the last week. Outflows at Grand Coulee have ranged between 92.6 and 142.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,415.8 feet (5-12-16) and has refilled 5.8 feet over the previous week. Daily average outflows at Libby Dam have been 15.5 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,540.9 feet (5-12-16) and has refilled 4.3 feet over the last week. Outflows at Hungry Horse have been 4.0–5.9 Kcfs over the last week.

Dworshak is currently at an elevation of 1,578.5 feet (5-12-16) and has refilled 6.6 feet over the last week.

Outflows have ranged between 5.5 and 9.7 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2,063.6 feet on May 12, 2016, and has refilled 10.3 feet over the last week. Inflows at Brownlee have ranged between 19.2 and 24.2 Kcfs over the last week.

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 7, 2016), the flow objective this spring will be 96 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 108.0 Kcfs last week and 94.9 Kcfs between April 3 and May 12, 2016.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives (which began April 10th) will be 243 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Over the last week, flows have averaged 278.2 Kcfs at McNary and 166.8 Kcfs at Priest Rapids. Between April 10 and May 12, 2016, flows at McNary Dam averaged 294.2 Kcfs. Priest Rapids Dam flows were 181.2 Kcfs.

Spill and River Temperature

No spill occurred at Dworshak Dam over the past week.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3–April 28: 45 Kcfs/Gas Cap April 28–June 2: 30%/30% vs. 45 Kcfs/Gas Cap

Spill at Lower Granite Dam was at, or above, the 2016 Fish Operations Plan (FOP) levels over the past week. At Little Goose Dam spill was less than 30% on 5/8–5/10, as the COE reduced spill in response to the forebay TDG at Lower Monumental Dam. Spill at Lower Monumental Dam has varied between 24 and 26 Kcfs. Spill at Ice Harbor Dam has been at, or above, the simulated "test like" conditions.

Spill for fish passage began on April 10th at the middle Columbia River projects. Spill for fish passage at the middle Columbia River projects is to occur at the following amounts described in the 2016 FOP.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	April 10-April 28: 30%/30% April 28-June 15: 30%/30% and 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

Over the past week spill at McNary Dam met, or exceeded, the levels specified in the FOP. At John Day and The Dalles dams spill met the levels specified in the FOP. At Bonneville Dam spill met or exceeded 100 Kcfs.

At times over this past week, the TDG readings were in excess of the waiver limits at some projects. The increased TDG was related to several factors including: increasing flow and spill amounts, changes in environmental conditions, and uncontrolled spill.

Note: The State of Oregon TDG waiver requires compliance only 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.

Monitoring for signs of gas bubble trauma (GBT) occurred at Lower Granite, Little Goose, Lower Monumental, Rock Island, McNary and Bonneville dams over the past week. Two percent of the sample was observed with minor signs of GBT at Bonneville Dam in the sample collected on 5/7. Due to the potential for high numbers of bycatch in the samples, GBT exams at Bonneville Dam did not occur on 5/10 and were postponed until 5/14 when the bulk of the Spring Creek Hatchery release will have passed Bonneville.

Temperature: At Lower Granite Dam the forebay temperature has decreased over the past few days to levels near the 10-year average. However, at Ice Harbor, McNary and Bonneville dams the forebay temperatures have been very similar to what was observed in 2015, and are several degrees above the 10-year average.

Smolt Monitoring

Smolt Monitoring Program (SMP) sampling is ongoing at all SMP traps and bypass facilities, except the Salmon River Trap at Whitebird.

This week's samples at Bonneville Dam (BON) were dominated by yearling Chinook. However, yearling Chinook passage at BON decreased this week when compared to the previous week. This week's daily average passage index for yearling Chinook at BON was approximately 91,000 per day, whereas for last week was about 113,000 per day. Subyearling Chinook were the second most abundant species in this week's samples. This is because of a release of approximately 3.8 million subyearling fall Chinook tules from Spring Creek NFH on the morning of May 9th. These fall Chinook tules were first observed at BON at around 1:10 AM, April 10th. High passage numbers for these subyearlings were first observed with the May 10 sample and continued through the May 11 sample. Passage numbers had decreased substantially by the May 12 sample. There were no instances of high mortality or descaling during the peak passage period for these subyearling Chinook from Spring Creek NFH. This week's daily average passage index for subyearling Chinook at BON was nearly 72,000 per day, with a peak passage index of about 306,400 on May 11th. Steelhead and coho passage decreased this week, when compared to the previous week. This week's daily average passage indices were about 20,200 per day for steelhead and 18,500 for coho. Last week's daily average passage indices were about 40,700 and 20,000 per day, respectively. Sockeye passage increased this week, when compared to the previous week. This week's daily average passage index for sockeye at BON was about 48,700 per day, whereas that for last week was about 12,800 per day. No Pacific lamprey ammocoetes were sampled at BON this week. Pacific lamprey macropthalmia were encountered in only four of this week's samples, with an estimated collection of 143 each day.

Sampling at John Day Dam (JDA) in 2016 is every-other-day for the entire SMP season. This is the first time every-other-day sampling has occurred at this site over the entire season. Yearling Chinook continued to dominate the collections at JDA this week, with a daily average passage index of nearly 63,500 fish per day. This is a decrease from last week's daily average passage index, which was about 127,000 yearling Chinook per day. Sockeye were the second most abundant salmonid this week, with a daily average passage index of about 30,000 fish per day, which is an increase over last week's daily average passage index of nearly 17,000 per day. Steelhead passage decreased this week, when compared to the previous week. This week's daily average passage index for steelhead at JDA was nearly 21,000 per day. Last week's daily average passage index was about 60,400 per day. Coho passage this week was very similar to last week, with a daily average passage index of about 2,700 fish per day. Subyearling Chinook passage increased this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at JDA was about 1,400, whereas that for last week was about 800 per day. Only about 16% of the subyearling Chinook juveniles that were sampled this week were fry. Pacific lamprey ammocoetes were only encountered in one of this week's samples while Pacific lamprey macropthalmia were collected in all four of this week's samples. This week's daily average collection for Pacific macropthalmia at JDA was about 670 per day.

As in recent years, sampling at McNary Dam (MCN) in 2016 will be every-other-day for the entire SMP season. Yearling Chinook continued to dominate the samples at MCN this week, with a daily average

passage index of nearly 130,000 per day. This is a decrease over last week's daily average passage index of nearly 231,000 yearling Chinook per day. Steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage index for steelhead at MCN was about 24,700 per day, whereas that for last week was nearly 78,000 per day. Passage of coho and sockeye increased this week when compared to the previous week. This week's daily average passage indices for these two species were about 9,900 and 89,000 per day, respectively. Last week's daily average passage indices were about 5,100 for coho and 47,400 for sockeye. Subyearling Chinook passage also increased slightly this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at MCN was about 8,200 per day, whereas that for last week was about 7,200. About 44% of the subyearling Chinook juveniles that were collected at MCN this week were fry. Finally, Pacific lamprey macropthalmia were collected in all three of this week's samples, with a daily average collection of nearly 1,200 per day. No Pacific ammocoetes have been collected at MCN so far this year.

Samples at Lower Granite Dam (LGR) continued to be dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was nearly 175,000 per day, which is an increase over last week's daily average passage index of about 149,600 per day. Steelhead were the second most abundant salmonid this week, with a daily average passage index of about 102,700 per day. This is also an increase over last week's daily average passage index of nearly 69,000 per day. Coho and sockeye passage also increased this week, with daily average passage indices of about 14,000 and 375 per day, respectively. Last week's daily average passage indices for these two species were 5,700 per day for coho and only 75 for sockeye. Subyearling Chinook passage decreased this week. This week's daily average passage index for subyearling Chinook at LGR was about 700 per day, whereas that for last week was nearly 1,100 per day. Approximately 89% of the subyearling Chinook juveniles that were sampled this week were fry. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples (May 9th and May 12th) while Pacific lamprey macropthalmia were encountered in six of this week's samples. This week's daily average sample count for Pacific lamprey macropthalmia at LGR was 6 per day.

Sampling at Little Goose Dam (LGS) was limited to a 24-hour sample every-other-day until transportation began, at which time sampling switched to daily. Yearling Chinook continued to dominate the collections at LGS this week. This week's daily average passage index for yearling Chinook at LGS was about 93,600 fish per day. This is a decrease from last week's daily average passage index of about 195,000 yearling Chinook per day. Steelhead passage also decreased this week, when compared to last week. This week's daily average passage index for steelhead at LGS was about 66,700 per day, whereas for last week it was about 103,000 per day. Passage of coho and sockeye both increased this week, when compared to the previous week. This week's daily average passage indices for these two species were about 11,150 and 320 per day, respectively. Last week's daily average passage indices were about 3,500 for coho and only 160 for sockeye. Subyearling Chinook passage this week was very similar to the previous week. This week's daily average passage index for subyearling Chinook at LGS was about 1,450 fish per day. Approximately 39% of the subyearling Chinook juveniles that were collected at LGS this week were fry. Finally, Pacific lamprey macropthalmia were encountered in six of this week's samples. This week's daily average collection for Pacific lamprey macropthalmia at LGS was nearly 1,200 per day.

Sampling at Lower Monumental Dam (LMN) was limited to a 24-hour sample every-third-day through April 14th, every-other-day from April 16th to April 30th, and every day with the initiation of transportation. As with last week, this week's samples at LMN were dominated by yearling Chinook. The daily average passage index for yearling Chinook this week was nearly 285,000 fish per day. This represents an increase over last week's daily average passage index of about 204,600 per day. Steelhead were the second most abundant salmonid species in this week's samples. This week's daily average passage index for steelhead was about 56,500 fish per day, which is a decrease from last week's daily average passage index of about 79,000 per day. Coho passage continued to increase this week, when compared to last week. This week's daily average passage index for coho at LMN was about 3,800 per day, whereas for last week it was about 1,600 per day. Sockeye juveniles were encountered in two of this

week's samples, May 8th and 11th. Subyearling Chinook were present in all of this week's samples, with a daily average passage index of about 1,250 per day. None of the subyearling Chinook juveniles that were collected this week were fry. Pacific lamprey macropthalmia were collected in five of this week's samples. No Pacific lamprey ammocoetes have been collected at LMN so far this year.

Coho and sockeye both dominated this week's samples at Rock Island Dam (RIS), with daily average passage indices of nearly 2,700 and 2,600 per day, respectively. This week's daily average passage index for coho represents an increase over the previous week while the average sockeye passage index is a decrease from the previous week. Last week's daily average passage indices were about 1,350 for coho and nearly 3,500 for sockeye. Passage of yearling Chinook decreased this week, when compared to last week. This week's daily average passage index for yearling Chinook at RIS was nearly 1,000, whereas that for last week was about 3,400 per day. Steelhead passage increased slightly this week. This week's daily average passage index for steelhead was about 880, whereas that for last week was about 670. Finally, no lamprey juveniles were encountered in this week's samples at RIS.

The Grande Ronde Trap (GRN) is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer 2 in the Grande Ronde River. Yearling Chinook continued to dominate the collections this week. The daily average collection for yearling Chinook this week was nearly 200 per day, which is an increase from last week's daily average collection of about 125 per day. Steelhead collections also increased this week, when compared to the previous week. This week's daily average collection for steelhead was about 100 fish per day, whereas that for last week was about 40 fish per day. The only other salmonids that were encountered in this week's samples were subyearling Chinook, with a daily average collection of about 16 fish per day. Of the subyearling Chinook juveniles that were collected this week, about 36% were fry.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 and operated by Idaho Department of Fish and Game. Similar to 2015, sampling at the Salmon River Trap in 2016 is five days per week. Sampling at WTB has been suspended since the April 21 sample due to unsafe river conditions associated with high flows. Sampling at WTB will resume when conditions are deemed safe.

The Snake River Trap at Lewiston (LEW) is located at river kilometer 225 and is operated by Idaho Department of Fish and Game. Due to concerns over debris, sampling at LEW was suspended for the May 8 sample. In addition, sampling at LEW was reduced to an 8-hour sample from May 9th to May 12th to limit trap debris and reduce handling of listed subyearling fall Chinook. With the differences in operations over the last two weeks, it is not appropriate to compare collections from this week to those from previous weeks. With that said, steelhead dominated this week's collections at LEW, followed by yearling Chinook. This week's daily average collections for steelhead and yearling Chinook were about 440 and 210 per day, respectively. This week's daily average collection for subyearling Chinook was about 120 per day. Coho and sockeye were also encountered in this week's collections, but in relatively low numbers.

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 and, for 2016, the Fish Passage Center has been receiving data since the January 1, 2016, sample. However, due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Currently, the FPC has data from IMN through the May 3rd sample. Due to high flows and debris, sampling at IMN was suspended from May 1st through May 3rd. For the period April 26th through April 30th, steelhead dominated the samples at IMN. The daily average collection for steelhead at IMN during this period was about 590 per day. Yearling Chinook collections over this period averaged nearly 70 per day. No other species of salmonids were encountered at IMN during this period.

Hatchery Release

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 630,000 sockeye juveniles were scheduled to be released into Redfish Lake Creek, beginning this week. Of these, about 540,000 were

reared at Springfield Hatchery in Idaho while the remaining 90,000 were reared at Oxbow Hatchery in Oregon. The releases of hatchery sockeye from Springfield Hatchery are scheduled to run into next week, with the last release scheduled for May 16th. The only other new release that was scheduled for this zone this week was of steelhead juveniles. Approximately 160,000 steelhead juveniles were scheduled to be released into the Wallowa River this week.

Approximately 2.4 million subyearling fall Chinook juveniles are scheduled for release to this zone over the next two weeks. Of these, approximately 1.0 million (42%) are scheduled to be released just below Hells Canyon Dam on or around May 18th. A total of 900,000 (38%) are scheduled to be released from the Captain John Rapids (500,000) and Pittsburg Landing (400,000) acclimation facilities on the Snake River. The Captain John Rapids release is scheduled to begin on May 24th and the Pittsburg Landing release is scheduled to begin on May 20th. The remaining 500,000 (21%) are scheduled to be released from the Big Canyon Creek Acclimation Facility on the Clearwater River, beginning on or around May 25th. These are the only new releases that are scheduled for this zone over the next two weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. No new releases of juvenile salmonids were scheduled for this zone this week. However, a few volitional releases of yearling summer Chinook and summer steelhead that began several weeks ago were scheduled to end this week. Several more volitional releases from previous weeks are scheduled to end over the next two weeks. In addition, three releases of subyearling summer Chinook are scheduled for this zone over the next two weeks. In all, these releases are expected to total approximately 946,000 summer Chinook juveniles. Of these, about 23% are scheduled to be released into the Okanogan River, 25% are scheduled to be released from Chief Joseph Hatchery just below Chief Joseph Dam, and 51% are scheduled to be released from Wells Hatchery just below Wells Dam.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. On May 9th, approximately 3.82 million subyearling fall Chinook tules were released from Spring Creek NFH. These subyearling fall Chinook were first observed at the Bonneville Dam juvenile fish facility at about 1:10 AM on May 10th. It appears that the majority of the release had passed Bonneville Dam by May 13th. This was the only new release that was scheduled for this zone this week. There is only one new release scheduled for this zone over the next two weeks. Approximately 600,000 subyearling fall Chinook are scheduled to be released into the Umatilla River, beginning on or around May 17th.

Adult Passage

Adult counts at Bonneville Dam have been updated through 5/12/16. The 2016 adult spring Chinook count at Bonneville Dam of 102,902 is about 57.7% of the 2015 count of 178,203 and 92.3% of the 10-year average count of 111,483. The 2016 spring Chinook jack count of 5,860 has 76 more fish than the 2015 count of 5,784, while being 52.1% of the 10-year average count of 11,242. At Willamette Falls, 9,913 adult spring Chinook have been counted so far this year. In 2015, 31,408 adult spring Chinook were counted at Willamette Falls. This year's count is about 31.6% of the 2015 count and 75.9% of the 10-year average count of 13,061. As of May 12th, a total of 69,856 adult spring Chinook have been counted at The Dalles Dam and 44,217 have been counted at McNary Dam. The Dalles Dam 2016 adult spring Chinook count is about 45.1% of the 2015 count and 89.4% of the 10-year average count. The 2016 McNary Dam adult spring Chinook count is about 37.9% of the 2015 count and 94% of the 10-year average count. A total of 20,508 spring chinook have been counted at Lower Granite Dam as of May 12th. The 2016 Lower Granite Dam adult spring Chinook count is about 31.4% of the 2015 count, while being about 1.2 times greater than the 10-year average count.

The 2016 Bonneville Dam adult steelhead count of 4,157 has 277 fewer fish than the 2015 count of 4,434 and 116 fewer fish than the 10-year average count of 4,273. The 2016 Bonneville Dam adult wild steelhead count of 1,667 is about 71.3% of the 2015 count of 2,338, while having 346 more fish than the 10-year average count of 1,321. At upriver sites, adult steelhead continue to move through the hydro system to reach their tributaries and spawning sites. The

majority of these fish over-wintered in pools and are completing their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 6 to 26 adults per day last week. This year's Lower Granite steelhead count of 5,443 is 59.7% of the 2015 count of 9,117 and 59.5% of the 10-year average count of 9,142. The 2016 Lower Granite Dam adult wild steelhead count of 3,095 is 72.1% of the 2015 count of 4,291 and is about 90.1% of the 10-year average count of 3,434. At Willamette Falls, the 2016 count for steelhead was 8,364 as of May 11th. This year's steelhead count is about 1.6 times greater than the 2015 count of 5,077, while having 215 fewer fish than the 10-year average count of 8,579.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 4/30/2016 to 05/13/16

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2016	204,000	04-15-16	04-30-16	Riverside Pond	Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2016	527,000	04-15-16	04-30-16	Chief Joseph Hatchery	Wells Pool
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	256,000	04-15-16	04-30-16	Omak Pond	Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	342,500	04-15-16	04-30-16	Similkameen River	Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	402,000	04-15-16	04-30-16	Chief Joseph Hatchery	Wells Pool
Colville Tribe	Wells Hatchery	ST	SU	2016	10,000	04-13-16	04-30-16	Omak Creek	Okanogan River
Colville Tribe Total					**1,741,500**				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	211,300	04-28-16	05-03-16	Yankee Fk (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	231,530	04-28-16	05-04-16	Yankee Fk (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	268,857	04-30-16	05-05-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Oxbow-Oregon	SO	UN	2016	90,000	05-10-16	05-10-16	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Springfield Hatchery	SO	UN	2016	540,000	05-09-16	05-16-16	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game Total					**1,341,687**				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	120,000	05-04-16	05-04-16	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	160,000	04-30-16	04-30-16	Big Canyon Acclim. Pd (Grande Ronde)	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	160,000	05-08-16	05-08-16	Big Canyon Acclim. Pd (Grande Ronde)	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	165,000	04-30-16	04-30-16	Little Sheep Creek	Imnaha River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2016	10,000	05-05-16	05-05-16	Wychus Creek	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	ST	SU	2016	15,000	05-05-16	05-05-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife Total					**630,000**				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	84,500	05-01-16	05-01-16	East Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	1,404,000	04-06-16	04-30-16	S Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2016	3,818,576	05-09-16	05-09-16	Spring Creek Hatchery	Bonneville Pool
U.S. Fish and Wildlife Service Total					**5,307,076**				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2016	55,531	05-02-16	05-04-16	E Fk Irrig Dist Sand Trap	Hood River
Warm Springs Tribe Total					**55,531**				
WA Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2016	230,000	04-15-16	05-01-16	Nason Creek	Wenatchee River
WA Dept. of Fish and Wildlife	Chiwawa Hatchery	ST	SU	2016	199,000	04-25-16	05-07-16	Chiwawa Hatchery	Wenatchee River
WA Dept. of Fish and Wildlife	COOP	CH0	FA	2016	175	05-01-16	05-31-16	Wenatchee River	Wenatchee River
WA Dept. of Fish and Wildlife	COOP	CH0	FA	2016	1,025	05-01-16	05-31-16	Above McNary Dam	McNary Pool
WA Dept. of Fish and Wildlife	COOP	CH0	FA	2016	3,850	05-01-16	05-31-16	Above McNary Dam	McNary Pool
WA Dept. of Fish and Wildlife	COOP	CH0	FA	2016	3,975	05-01-16	05-31-16	Above McNary Dam	McNary Pool
WA Dept. of Fish and Wildlife	COOP	CH0	FA	2016	13,600	05-01-16	05-31-16	Yakama River	Yakima River
WA Dept. of Fish and Wildlife	COOP	CH0	SU	2017	225	04-20-16	05-01-16	Similkameen River	Okanogan River
WA Dept. of Fish and Wildlife	COOP	CH0	SU	2017	225	05-01-16	05-31-16	Methow River	Methow River
WA Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2016	171,500	05-01-16	05-15-16	Carlton Acclim Pond	Methow River
WA Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2016	100,000	04-30-16	05-07-16	Methow Hatchery	Methow River
WA Dept. of Fish and Wildlife	Similkameen Hatchery	CH1	SU	2016	240,000	04-15-16	04-30-16	Similkameen Acclim Pd	Okanogan River
WA Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2016	90,000	04-20-16	04-30-16	Klickitat River	Klickitat River
WA Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2016	320,000	04-15-16	05-07-16	Wells Hatchery	Rocky Reach Pool
Washington Dept. of Fish and Wildlife Total					**1,373,575**				

Hatchery Releases Last Two Weeks

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Yakama Tribe	Cascade Hatchery	CO	UN	2016	68,020	05-01-16	05-31-16	Twisp Acclim Pond	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2016	79,496	05-01-16	05-31-16	Coulter Creek	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2016	110,086	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2016	110,126	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2016	135,272	05-01-16	05-31-16	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Klickitat Hatchery	CO	NO	2016	1,000,000	05-01-16	05-01-16	Klickitat Hatchery	Klickitat River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2016	37,000	05-06-16	05-06-16	Roza Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2016	20,000	05-06-16	05-06-16	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2016	180,000	05-06-16	05-06-16	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2016	1,700,000	05-04-16	05-04-16	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2016	58,499	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2016	110,615	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2016	121,443	05-01-16	05-31-16	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2016	38,503	04-01-16	04-30-16	Methow River	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	42,471	04-01-16	04-30-16	Winthrop Hatchery	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	47,124	04-01-16	04-30-16	Methow River	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	212,356	04-01-16	04-30-16	Winthrop Hatchery	Methow River
Yakama Tribe Total					**4,071,011**				
Grand Total					**14,520,380**				

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 5/14/2016 to 5/27/2016

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2016	222,000	05-25-16	05-29-16	Omak Pond	Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2016	240,000	05-25-16	05-29-16	Chief Joseph Hatchery	Wells Pool
Colville Tribe Total					**462,000**				
Idaho Dept. of Fish and Game	Springfield Hatchery	SO	UN	2016	540,000	05-09-16	05-16-16	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game Total					**540,000**				
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2016	400,000	05-20-16	05-20-16	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2016	500,000	05-24-16	05-24-16	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2016	500,000	05-25-16	05-25-16	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe Total					**1,400,000**				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2016	1,000,000	05-18-16	05-22-16	Hells Canyon Dam	Snake River
Oregon Dept. of Fish and Wildlife Total					**1,000,000**				
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2016	130,700	04-15-16	05-15-16	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service Total					**130,700**				
Umatilla Tribe	Umatilla Hatchery	CH0	FA	2016	600,000	05-17-16	05-17-16	Reith Bridge	Umatilla River
Umatilla Tribe Total					**600,000**				
WA Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2016	171,500	05-01-16	05-15-16	Carlton Acclim Pond	Methow River
WA Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2016	15,500	04-15-16	05-15-16	Rock Cr (Stevenson)	Bonneville Pool
WA Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2016	484,000	05-25-16	06-07-16	Wells Hatchery	Rocky Reach Pool
Washington Dept. of Fish and Wildlife Total					**671,000**				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2016	220,000	03-15-16	05-15-16	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2016	220,000	03-15-16	05-15-16	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2016	220,000	03-15-16	05-15-16	Jack Creek Acclim Pond	Yakima River
Yakama Tribe Total					**660,000**				
Grand Total					**5,463,700**				

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

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/29/2016	122.1	0.0	121.1	0.0	148.0	12.5	155.7	3.5	169.3	18.6	175.8	37.0	175.5	58.4
04/30/2016	116.1	0.0	117.0	0.0	139.3	13.7	134.3	0.0	147.7	15.3	158.2	22.8	172.0	32.1
05/01/2016	138.9	0.0	130.4	0.0	155.5	18.3	151.6	3.2	163.9	18.8	168.2	39.6	171.8	48.2
05/02/2016	128.5	0.0	136.2	0.0	159.8	15.8	161.9	8.1	173.6	23.8	172.6	41.3	155.3	37.5
05/03/2016	118.3	0.0	124.0	0.0	149.1	13.2	147.4	6.5	161.6	18.7	168.2	33.5	167.2	50.0
05/04/2016	115.5	0.0	115.4	0.0	141.7	13.5	142.1	12.5	156.9	20.3	160.1	31.6	159.3	43.2
05/05/2016	124.4	0.0	122.9	0.0	150.7	21.8	157.4	21.3	173.6	28.0	178.0	44.3	174.7	50.2
05/06/2016	114.0	0.0	114.3	0.0	141.8	19.2	147.9	2.7	166.7	20.7	171.6	41.7	171.2	48.5
05/07/2016	104.6	0.0	104.4	0.0	131.7	12.5	139.9	0.0	159.0	16.7	164.4	34.2	164.0	43.8
05/08/2016	92.6	0.0	94.8	0.0	119.4	19.7	124.1	1.8	143.8	15.6	148.5	40.8	148.3	49.0
05/09/2016	99.9	0.0	99.4	0.0	125.8	15.8	133.7	7.4	152.7	18.2	157.1	33.5	159.3	42.1
05/10/2016	128.9	0.0	128.7	0.0	152.7	14.4	156.1	7.4	171.8	23.6	176.5	40.6	174.1	56.8
05/11/2016	142.7	0.0	143.2	0.0	145.9	13.3	154.6	6.9	170.1	23.3	172.0	33.6	171.8	50.6
05/12/2016	131.0	0.0	134.9	0.0	156.5	20.0	160.7	11.7	173.7	23.7	180.2	46.7	178.6	62.4

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

	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/29/2016	13.9	5.4	---	22.9	96.3	20.6	92.3	27.7	91.7	26.4	97.9	53.0
04/30/2016	15.0	5.2	---	19.4	94.4	20.6	90.6	27.2	88.3	26.9	91.7	50.4
05/01/2016	9.8	0.0	---	19.1	84.6	20.7	81.8	24.4	79.2	27.0	83.9	57.1
05/02/2016	9.9	0.0	---	19.5	85.3	20.5	82.3	24.5	81.5	25.8	87.7	57.4
05/03/2016	9.9	0.0	---	15.5	85.9	20.5	83.2	25.0	80.3	25.1	85.2	60.0
05/04/2016	5.6	0.0	---	16.6	82.9	20.2	79.2	23.7	79.2	25.1	83.8	38.4
05/05/2016	5.5	0.0	---	18.9	94.9	20.9	91.5	27.4	87.1	24.0	92.3	37.3
05/06/2016	5.5	0.0	---	15.9	103.0	25.5	97.4	29.1	96.3	24.9	100.2	55.5
05/07/2016	5.5	0.0	---	16.3	110.5	22.0	106.0	31.8	103.7	25.3	108.6	71.3
05/08/2016	5.5	0.0	---	15.2	117.1	27.8	112.8	31.1	111.0	24.4	119.3	69.1
05/09/2016	5.4	0.0	---	16.3	120.7	31.5	117.3	29.0	115.0	25.0	120.5	65.2
05/10/2016	5.4	0.0	---	12.4	115.8	28.3	110.8	29.5	110.5	25.3	118.2	62.8
05/11/2016	7.1	0.0	---	12.8	97.3	20.5	93.8	28.1	91.4	25.6	94.6	40.2
05/12/2016	9.7	0.0	---	14.9	91.5	20.4	89.6	26.8	88.5	26.3	92.4	49.8

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

	McNary		John Day		The Dalles		Bonneville			
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
04/29/2016	305.2	131.2	298.2	93.8	280.1	111.9	303.4	118.6	69.0	103.4
04/30/2016	280.3	112.5	276.6	109.6	268.8	108.0	296.1	111.3	68.8	103.6
05/01/2016	269.5	108.3	265.0	100.5	258.5	103.6	285.3	100.4	68.9	103.6
05/02/2016	265.1	106.3	260.8	78.1	249.0	99.2	273.0	100.3	59.0	101.2
05/03/2016	256.8	103.0	248.3	78.7	234.7	94.0	254.8	100.1	44.3	98.0
05/04/2016	261.7	104.7	249.4	99.6	239.3	95.7	260.4	101.0	41.9	105.2
05/05/2016	264.7	114.2	251.0	95.2	233.6	93.5	249.3	101.1	26.2	109.6
05/06/2016	281.3	134.4	275.8	82.6	263.3	105.2	284.8	100.2	56.6	115.7
05/07/2016	282.4	121.5	266.4	84.5	249.3	100.0	278.6	100.0	52.1	114.1
05/08/2016	293.1	131.4	282.9	112.4	278.7	110.7	298.4	104.2	61.8	120.0
05/09/2016	284.7	118.5	281.8	107.4	270.3	107.0	283.3	106.2	61.6	103.1
05/10/2016	298.6	125.6	299.2	89.2	287.0	113.9	309.2	125.6	67.6	103.6
05/11/2016	287.7	115.0	288.9	90.9	274.6	108.6	299.7	107.3	67.0	113.0
05/12/2016	282.4	113.1	272.7	108.7	264.9	104.2	290.0	100.7	59.0	118.0

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											
	05/12/16	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	05/19/16	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/09/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/16/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	05/06/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/11/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/18/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	05/06/16	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
	05/08/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/16/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	05/07/16	Chinook + Steelhead	100	2	2	2.00%	0.00%	1	1	0	0
	05/14/16	Chinook + Steelhead	100	2	2	2.00%	0.00%	1	1	0	0
	05/17/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/10/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/16	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/17/16	Chinook + Steelhead	100	4	4	4.00%	0.00%	4	0	0	0
	05/19/16	Chinook + Steelhead	100	2	2	2.00%	0.00%	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 Upper Columbia River Sites

	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	104.5	104.7	104.7	24	---	---	---	0	109.2	109.8	110.8	24	106.9	107.1	107.4	24	107.1	107.5	107.8	24
4/30	103.6	103.8	103.9	24	---	---	---	0	108.0	108.6	109.3	24	106.0	106.1	106.4	24	106.2	106.4	106.8	24
5/1	103.3	103.5	103.8	24	---	---	---	0	108.0	108.7	109.1	24	106.3	106.8	107.1	24	106.5	107.2	107.6	24
5/2	103.4	103.9	104.4	24	---	---	---	0	109.0	109.6	110.6	24	106.7	107.1	107.5	24	107.0	107.4	107.9	24
5/3	102.4	103.0	103.7	24	---	---	---	0	110.2	111.0	111.7	24	107.3	107.7	108.0	24	107.2	107.7	107.9	24
5/4	103.3	104.5	105.0	24	---	---	---	0	110.0	110.4	110.7	24	107.5	107.8	108.3	24	107.7	108.1	108.3	24
5/5	103.6	104.7	105.7	24	---	---	---	0	109.6	110.0	110.5	24	107.7	108.2	111.7	24	107.6	107.9	108.1	24
5/6	102.9	104.3	105.1	24	---	---	---	0	109.0	109.2	109.5	24	107.6	107.9	108.0	24	107.7	108.2	108.5	24
5/7	105.2	106.1	106.5	24	---	---	---	0	109.9	110.3	110.7	24	108.8	109.6	109.9	24	108.4	109.1	109.6	24
5/8	105.7	106.7	107.3	24	---	---	---	0	110.3	110.5	110.7	24	109.3	109.8	110.3	24	109.1	109.4	109.9	24
5/9	102.8	103.6	104.4	24	---	---	---	0	109.0	109.4	109.7	24	107.5	107.8	107.9	24	107.9	108.1	108.6	24
5/10	100.8	101.3	102.0	21	---	---	---	0	108.4	108.6	109.2	24	107.2	107.6	107.8	24	107.3	107.6	108.1	24
5/11	101.8	103.2	103.5	24	---	---	---	0	109.3	109.7	110.4	24	107.7	108.1	108.3	24	107.1	107.5	107.8	24
5/12	103.0	103.5	103.8	23	---	---	---	0	109.8	110.0	110.2	23	108.3	108.7	108.9	23	108.2	108.7	109.0	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	106.9	107.3	107.9	24	106.5	106.8	106.9	24	109.6	109.9	110.2	24	113.2	113.9	114.3	24	114.6	116.1	119.5	24
4/30	106.5	106.9	107.3	24	105.7	105.9	106.3	24	108.6	108.9	109.2	24	108.9	109.2	110.2	24	109.1	109.5	110.5	24
5/1	106.2	106.7	107.1	24	106.2	106.7	106.9	24	110.2	110.6	111.7	24	108.5	109.0	109.3	24	109.6	111.0	113.5	24
5/2	106.6	106.9	107.2	24	106.7	107.0	107.3	24	110.3	111.0	111.8	24	110.0	110.8	111.4	24	113.2	115.7	116.8	24
5/3	107.2	107.5	107.8	24	106.9	107.1	107.5	24	109.8	110.3	110.7	24	110.3	110.9	111.4	24	112.1	114.2	115.7	24
5/4	107.7	108.2	108.7	24	106.9	107.1	107.5	24	109.9	110.3	110.8	24	110.1	110.4	110.6	24	112.8	115.6	120.3	24
5/5	107.6	107.9	109.1	24	106.3	106.5	106.6	24	110.3	111.1	111.5	24	109.4	109.7	110.0	24	115.7	119.5	120.4	24
5/6	107.7	108.3	108.6	24	106.3	106.8	107.1	24	110.2	111.5	112.6	24	109.3	110.1	110.9	24	111.1	112.6	117.9	24
5/7	108.1	108.6	109.4	24	107.8	108.4	108.8	23	110.2	110.9	111.4	23	111.1	111.3	111.5	24	110.9	111.0	111.2	24
5/8	109.2	109.5	110.0	24	107.8	108.2	108.5	23	111.0	112.0	114.5	23	110.8	111.3	111.7	24	110.8	111.3	112.2	24
5/9	108.3	108.9	109.4	24	105.6	106.0	106.2	24	109.6	111.2	116.4	24	108.0	108.4	109.2	24	110.2	112.7	119.0	24
5/10	107.2	107.8	108.2	24	105.9	106.4	106.6	24	108.7	109.5	110.9	24	108.9	109.5	110.2	24	111.6	113.9	115.5	24
5/11	106.6	106.9	107.1	24	106.5	106.7	106.9	24	109.5	109.9	110.7	24	108.7	109.5	109.7	24	111.2	112.8	116.3	24
5/12	107.3	107.8	108.8	23	106.6	106.8	107.2	23	110.7	111.5	111.9	23	110.1	110.4	110.7	23	113.8	116.3	118.6	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	112.1	112.4	112.6	24	114.7	115.3	116.1	24	113.0	113.6	114.1	24	113.5	113.7	114.1	24	112.1	113.0	115.1	24
4/30	108.3	109.0	111.2	24	111.1	112.3	114.6	24	112.6	113.3	114.4	24	112.8	113.0	113.3	24	110.7	111.3	112.3	24
5/1	107.6	108.2	108.6	24	110.5	111.5	112.3	24	113.0	113.8	115.2	24	113.1	113.3	113.8	24	112.7	113.2	113.9	24
5/2	109.4	110.7	112.1	24	112.8	113.9	114.7	24	112.2	113.2	114.5	23	112.6	112.9	113.1	23	112.6	113.1	113.8	23
5/3	109.0	110.0	111.1	24	112.5	113.5	114.6	23	112.1	113.6	116.2	24	112.3	112.9	113.6	24	112.2	112.6	113.1	24
5/4	109.5	109.9	110.3	24	113.5	115.3	120.2	24	111.8	112.7	113.8	24	112.7	113.3	113.5	24	111.7	111.9	112.2	24
5/5	110.1	111.3	111.9	24	114.1	115.0	116.9	24	111.3	111.5	111.7	24	113.2	114.1	115.4	24	111.6	111.7	111.8	24
5/6	109.4	110.2	111.2	24	112.6	113.6	115.5	24	111.0	111.3	111.7	24	112.5	113.0	113.5	24	112.8	113.5	114.0	24
5/7	109.7	110.5	111.1	24	112.3	113.0	113.5	24	112.8	114.0	115.2	24	113.3	114.1	115.1	24	112.9	113.5	114.3	24
5/8	108.9	109.2	109.6	24	111.5	111.9	113.0	24	109.9	110.9	112.4	24	112.8	114.0	116.8	24	111.1	111.6	112.6	24
5/9	107.7	108.7	110.6	24	110.7	111.5	112.6	24	107.6	107.8	108.1	24	110.3	110.8	111.7	24	107.5	108.0	109.3	24
5/10	107.6	109.5	110.4	24	110.6	113.0	113.6	24	---	---	---	0	---	---	---	0	---	---	---	0
5/11	108.4	109.2	110.2	24	111.9	112.9	113.7	24	---	---	---	0	---	---	---	0	---	---	---	0
5/12	109.6	111.1	112.2	23	112.8	113.7	114.0	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

	Priest R. Dnst				Pasco				Dworshak				Clrwtr-Peck				Anatone			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	114.8	116.3	118.5	24	---	---	---	0	109.5	112.8	119.8	24	103.5	104.5	106.9	24	103.6	103.7	104.0	24
4/30	111.5	111.8	112.4	24	---	---	---	0	106.7	106.9	107.4	24	102.8	103.4	103.8	24	103.5	104.0	104.5	24
5/1	113.6	114.7	115.2	24	---	---	---	0	97.0	97.4	98.2	24	100.4	100.8	102.7	17	104.3	105.2	106.0	24
5/2	113.3	114.0	114.5	23	---	---	---	0	97.1	97.6	97.8	24	100.8	101.6	102.2	24	104.4	105.2	106.0	24
5/3	114.2	115.1	116.6	24	---	---	---	0	97.3	97.7	98.1	24	101.0	101.9	102.6	24	104.5	105.4	106.2	24
5/4	113.6	114.6	116.6	24	---	---	---	0	97.3	97.7	98.2	23	101.5	102.4	103.0	23	104.7	105.5	106.1	23
5/5	114.0	115.1	115.7	24	---	---	---	0	97.7	98.4	98.8	24	102.0	103.0	103.6	24	105.0	105.8	106.5	24
5/6	114.3	114.8	115.8	24	---	---	---	0	97.9	98.4	98.9	24	102.1	103.0	103.5	24	105.3	106.0	106.6	24
5/7	114.5	115.3	116.2	24	---	---	---	0	98.5	99.1	99.5	24	102.9	104.0	104.6	24	105.9	106.6	107.2	23
5/8	113.5	114.8	116.2	24	---	---	---	0	98.8	99.3	99.8	24	102.9	103.7	104.4	24	106.1	106.7	107.1	24
5/9	111.2	112.1	114.1	24	---	---	---	0	97.7	98.1	98.3	24	101.4	101.8	102.5	24	105.5	105.8	106.1	22
5/10	---	---	---	0	---	---	---	0	97.3	97.8	98.3	24	101.6	102.4	103.0	24	106.0	106.8	107.5	24
5/11	---	---	---	0	---	---	---	0	97.7	98.2	98.8	24	101.7	102.6	103.1	24	106.3	107.2	107.9	24
5/12	---	---	---	0	---	---	---	0	97.6	97.9	98.3	23	101.1	101.8	102.4	23	106.0	106.6	107.2	23

Total Dissolved Gas Saturation Data at Snake River Sites

	Clrwtr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	102.2	102.8	103.8	24	103.7	104.0	104.2	24	109.4	109.6	109.7	24	108.0	108.2	108.4	24	113.5	114.3	114.7	24
4/30	102.1	102.9	103.5	24	102.3	102.5	102.6	24	109.2	109.3	109.5	24	106.9	107.1	107.4	24	113.2	113.4	113.8	24
5/1	102.0	102.7	103.7	24	102.4	102.9	103.3	24	109.3	109.6	110.4	24	106.9	107.2	107.3	24	113.0	113.4	113.7	24
5/2	101.4	102.5	103.5	24	103.6	104.1	104.5	24	109.3	109.6	110.4	24	107.6	108.0	108.3	24	113.1	113.4	113.6	24
5/3	101.5	102.7	103.7	24	104.5	104.8	105.2	24	109.6	109.9	110.4	24	108.5	108.9	109.6	24	113.8	114.1	114.3	24
5/4	101.5	102.6	103.5	23	104.5	104.8	105.0	24	109.7	109.9	110.1	24	109.7	110.2	111.1	24	113.5	113.8	114.1	24
5/5	101.9	102.8	103.4	24	104.2	104.4	104.6	24	110.2	110.7	114.1	24	110.0	110.6	111.9	24	114.2	114.7	115.0	24
5/6	101.9	102.7	103.4	24	103.8	104.0	104.1	24	112.4	114.6	116.2	24	110.0	110.5	111.2	24	114.8	115.2	115.5	24
5/7	102.4	103.3	103.9	24	104.4	104.8	104.9	24	111.2	112.2	113.5	24	110.5	111.1	111.6	24	115.5	115.7	115.9	24
5/8	102.4	103.1	103.7	24	105.2	105.3	105.4	24	114.1	114.7	115.1	24	110.6	111.1	111.4	24	115.1	115.5	116.1	24
5/9	100.8	101.2	101.5	24	103.9	104.4	104.9	24	114.6	115.1	116.1	24	106.6	107.2	108.6	24	113.6	113.8	114.1	24
5/10	101.3	102.4	103.1	24	102.3	102.5	102.8	24	112.8	115.6	116.5	24	105.9	106.5	106.9	24	113.6	113.9	114.3	24
5/11	102.3	103.5	104.5	24	103.1	103.8	104.4	24	109.4	109.8	110.1	24	108.1	109.1	110.0	24	114.0	114.6	115.2	24
5/12	101.8	102.7	103.6	23	105.3	105.8	106.0	23	109.9	110.1	110.4	23	111.1	111.7	112.5	23	114.3	114.8	115.2	23

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

	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	114.6	114.9	115.2	24	119.6	120.0	120.6	24	115.6	115.8	116.0	24	117.3	118.6	119.7	24	---	---	---	0
4/30	113.3	113.7	114.1	24	119.8	120.1	120.4	24	114.6	114.9	115.2	24	116.2	116.5	116.6	24	---	---	---	0
5/1	113.0	113.3	113.9	24	120.2	120.5	120.8	24	115.7	116.4	116.7	24	116.1	116.5	116.9	24	---	---	---	0
5/2	114.0	114.3	114.4	24	119.9	120.6	120.9	24	116.7	116.9	117.0	24	116.3	116.8	117.4	24	---	---	---	0
5/3	114.0	114.1	114.3	24	119.2	119.7	119.9	24	117.4	117.7	118.0	24	116.1	116.7	117.7	24	---	---	---	0
5/4	114.2	114.4	114.7	24	119.3	120.2	120.5	24	117.6	117.7	118.0	24	116.5	116.9	117.1	24	---	---	---	0
5/5	114.4	114.5	114.7	24	119.5	120.4	122.7	24	117.1	117.3	117.5	24	116.3	116.8	117.9	24	---	---	---	0
5/6	114.3	114.5	115.0	24	119.2	120.1	120.4	24	116.8	117.1	117.3	24	117.4	118.5	119.9	24	---	---	---	0
5/7	115.6	116.0	116.5	24	119.8	120.2	120.7	24	117.2	117.6	117.9	24	119.4	119.8	120.1	24	---	---	---	0
5/8	116.0	116.2	116.4	24	119.8	120.6	120.8	24	117.0	117.2	117.4	24	119.1	120.0	120.5	24	---	---	---	0
5/9	112.8	113.7	115.1	24	118.8	119.8	120.1	24	114.5	115.2	116.2	24	118.4	119.2	119.6	24	---	---	---	0
5/10	110.3	110.5	110.8	24	118.3	118.8	119.0	24	112.6	113.0	113.3	24	118.1	119.0	119.6	24	---	---	---	0
5/11	111.6	112.3	113.1	24	119.0	119.6	120.2	24	113.6	114.2	114.8	24	116.6	117.5	119.4	24	---	---	---	0
5/12	113.8	114.2	114.7	23	119.6	120.3	120.6	23	114.7	115.0	115.4	23	116.3	116.8	117.1	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

	McNary-Wash				McNary Tlwr				John Day				John Day Tlwr				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
4/29	112.7	113.0	113.3	24	117.1	117.5	117.7	24	109.9	110.1	110.3	24	117.2	118.2	120.3	24	109.2	109.5	110.2	24
4/30	111.6	111.8	112.0	24	115.5	115.6	115.8	24	109.4	109.7	110.0	24	118.9	119.9	120.8	24	111.0	112.9	113.6	24
5/1	112.5	113.1	113.5	24	115.6	115.8	115.9	24	111.0	111.7	112.1	24	118.1	119.3	121.3	24	113.8	114.3	114.6	24
5/2	113.1	113.8	114.7	24	115.7	116.1	116.5	24	111.5	111.8	112.1	24	115.7	117.0	117.4	24	113.6	114.1	114.2	24
5/3	112.5	113.1	113.6	24	115.5	115.8	116.0	24	112.1	112.4	112.6	24	115.3	117.0	118.8	24	112.4	112.6	113.2	24
5/4	113.4	113.6	114.0	24	115.6	115.9	116.1	24	112.9	113.3	113.6	24	117.7	118.6	119.5	24	112.8	113.9	114.2	24
5/5	112.3	112.4	112.6	24	116.0	116.5	117.3	24	113.5	113.7	113.8	24	117.3	118.1	118.4	24	113.5	114.0	114.4	24
5/6	111.6	111.9	112.5	24	117.2	117.5	117.6	24	113.4	113.7	114.0	24	116.4	117.3	117.8	24	114.2	114.4	114.5	24
5/7	112.4	112.9	114.4	24	116.7	116.8	116.9	24	113.5	113.7	114.0	24	116.1	116.9	119.1	24	114.1	114.4	114.7	24
5/8	113.6	114.2	114.7	24	117.2	117.7	117.9	24	111.2	112.0	113.0	24	119.5	120.2	120.7	24	110.7	111.5	113.0	24
5/9	110.1	110.6	111.5	24	116.1	116.7	117.0	24	108.6	108.8	109.4	24	118.7	119.9	120.9	24	109.3	109.8	110.3	23
5/10	108.7	109.5	110.5	24	116.5	116.9	117.1	24	107.8	108.2	108.6	24	116.9	117.2	117.5	24	110.8	111.0	111.2	24
5/11	110.1	110.7	112.4	24	115.8	116.1	116.2	24	108.2	108.4	108.6	24	116.7	118.2	120.9	24	110.8	111.2	111.5	24
5/12	111.5	111.9	112.7	23	115.7	115.9	116.0	23	108.7	109.1	109.4	23	118.7	119.4	120.3	23	111.7	112.4	112.7	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	The Dalles Dnst				Bonneville				Warrendale				Camas\Washougal				Cascade Island			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
4/29	114.3	114.8	115.2	24	111.8	112.0	112.6	24	114.7	114.9	115.3	24	112.9	113.2	113.5	24	119.5	119.6	119.8	24
4/30	115.2	116.6	117.8	24	111.3	111.8	112.0	24	114.1	114.3	114.6	24	112.7	113.8	114.6	24	118.9	119.3	119.4	24
5/1	117.7	118.5	119.0	24	114.5	115.9	117.3	24	115.3	115.9	116.2	24	113.7	114.6	115.0	24	118.6	118.8	119.0	24
5/2	117.4	117.9	118.4	24	117.2	117.9	118.7	24	117.0	117.2	117.5	24	114.1	115.8	117.0	24	118.6	118.8	119.0	24
5/3	116.4	116.8	117.3	24	117.6	118.4	118.9	24	117.5	117.9	118.0	24	116.0	117.1	118.1	24	118.2	118.4	118.9	24
5/4	116.4	117.0	118.0	24	114.6	114.9	115.2	24	116.0	116.3	116.5	24	115.0	115.3	115.7	24	118.2	118.4	118.7	24
5/5	117.1	117.4	117.9	24	113.5	113.8	113.9	24	115.8	116.0	116.2	24	113.9	114.5	115.1	24	117.9	118.1	118.5	24
5/6	117.6	118.0	118.3	24	115.9	117.0	117.5	24	116.4	117.2	117.4	24	114.6	115.9	116.2	24	118.9	119.2	119.4	24
5/7	117.8	118.2	118.4	24	117.9	118.5	119.1	24	117.7	118.2	118.5	24	116.3	117.3	118.4	24	119.1	119.2	119.5	24
5/8	115.5	116.2	117.0	24	112.5	113.9	115.4	24	114.6	115.5	116.3	24	113.7	114.3	114.7	24	119.2	119.7	120.0	24
5/9	114.5	115.1	115.6	24	109.4	109.9	110.4	24	112.8	113.1	114.0	24	111.0	111.7	112.3	24	118.6	118.9	119.5	24
5/10	115.7	116.1	116.6	24	112.5	114.1	115.1	24	115.5	116.3	116.6	24	112.6	114.4	114.9	24	119.9	120.2	120.9	24
5/11	115.9	116.4	116.6	24	116.2	116.7	117.1	24	116.9	117.2	117.6	24	115.0	116.2	117.0	24	119.5	119.7	120.0	24
5/12	116.2	116.7	117.3	23	116.8	117.1	117.4	23	117.0	117.3	117.7	23	116.0	116.8	117.5	23	119.0	119.3	120.1	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center Updated: 5/13/2016 7:05

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

				COMBINED YEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/29/2016	*	---	86	240	59	182,679	---	---	3,956	233,817	---	81,466
04/30/2016	*	---	50	176	71	185,500	295,382	175,124	4,043	---	198,035	100,446
05/01/2016	*	---	---	81	71	176,576	---	61,289	3,803	209,452	---	124,166
05/02/2016	*	---	---	58	177	136,483	166,423	315,373	3,295	---	81,549	169,295
05/03/2016	*	---	---	99	215	86,441	140,689	318,502	3,305	275,944	---	142,373
05/04/2016	*	---	---	74	95	75,688	206,256	209,950	2,955	---	101,225	82,611
05/05/2016	*	---	---	153	5	203,548	95,363	147,256	2,215	203,375	---	91,176
05/06/2016	*	---	---	565	626	272,738	111,706	230,817	1,049	---	84,950	90,836
05/07/2016	*	---	---	315	396	214,918	114,991	220,460	1,325	139,956	---	95,428
05/08/2016	*	---	---	140	---	212,633	109,376	301,513	1,050	---	74,514	93,774
05/09/2016	*	---	---	162	158	234,319	141,545	473,658	981	131,234	---	165,766
05/10/2016	*	---	---	116	61	156,563	80,879	398,463	714	---	54,885	90,081
05/11/2016	*	---	---	47	4	85,860	58,036	238,611	830	118,705	---	55,784
05/12/2016	*	---	---	33	---	46,191	38,659	129,113	915	---	39,507	45,620
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**136**	**2,259**	**1,938**	**2,270,137**	**1,559,305**	**3,220,129**	**30,436**	**1,312,483**	**634,665**	**1,428,822**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**68**	**161**	**162**	**162,153**	**129,942**	**247,702**	**2,174**	**187,498**	**90,666**	**102,059**
YTD		**27,295**	**55,604**	**15,786**	**7,703**	**5,766,201**	**3,304,438**	**4,544,798**	**42,508**	**1,888,418**	**1,357,782**	**2,393,203**

				COMBINED SUBYEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/29/2016	*	---	0	7	52	1,254	---	---	20	19,376	---	1,151
04/30/2016	*	---	0	5	63	254	1,717	0	10	---	436	854
05/01/2016	*	---	---	9	46	257	---	0	3	4,758	---	277
05/02/2016	*	---	---	27	111	2,404	2,859	0	14	---	1,111	1,893
05/03/2016	*	---	---	22	111	1,045	2,858	0	25	678	---	1,119
05/04/2016	*	---	---	18	33	1,328	2,905	878	19	---	872	3,622
05/05/2016	*	---	---	1	12	1,051	0	0	10	4,393	---	1,639
05/06/2016	*	---	---	39	86	267	573	540	75	---	1,325	3,268
05/07/2016	*	---	---	22	112	253	572	1,333	55	6,343	---	2,067
05/08/2016	*	---	---	2	---	506	1,718	1,303	74	---	219	3,379
05/09/2016	*	---	---	6	179	2,394	2,169	1,276	102	9,694	---	1,770
05/10/2016	*	---	---	13	256	275	0	2,317	72	---	1,771	167,127
05/11/2016	*	---	---	10	48	1,025	2,232	541	50	8,576	---	306,395
05/12/2016	*	---	---	22	---	255	2,863	1,431	35	---	2,279	19,096
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**203**	**1,109**	**12,568**	**20,466**	**9,619**	**564**	**53,818**	**8,013**	**513,657**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**0**	**15**	**92**	**898**	**1,706**	**740**	**40**	**7,688**	**1,145**	**36,690**
YTD		**0**	**12**	**245**	**1,688**	**51,193**	**22,755**	**9,619**	**6,585**	**180,673**	**13,603**	**1,602,880**

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)
04/29/2016	*	---	0	0	15	4,264	---	---	283	5,117	---	14,681
04/30/2016	*	---	0	0	8	2,795	11,449	1,128	559	---	3,047	13,374
05/01/2016	*	---	---	0	15	3,341	---	311	943	5,754	---	21,294
05/02/2016	*	---	---	0	27	2,938	1,716	1,508	1,328	---	2,000	30,679
05/03/2016	*	---	---	0	25	4,440	1,715	891	2,236	3,379	---	21,244
05/04/2016	*	---	---	0	20	4,249	1,162	1,464	2,225	---	3,048	18,076
05/05/2016	*	---	---	0	0	17,860	4,568	4,027	1,938	6,080	---	20,662
05/06/2016	*	---	---	0	22	12,538	12,030	3,508	1,680	---	1,985	19,931
05/07/2016	*	---	---	0	19	10,645	15,444	1,333	2,138	6,637	---	17,570
05/08/2016	*	---	---	0	---	8,596	13,743	5,473	2,226	---	1,973	17,636
05/09/2016	*	---	---	0	21	28,193	17,895	8,932	2,493	10,397	---	26,212
05/10/2016	*	---	---	0	3	20,086	9,569	5,148	2,649	---	3,541	17,385
05/11/2016	*	---	---	0	3	11,533	4,464	541	4,111	12,692	---	12,713
05/12/2016	*	---	---	0	---	6,890	4,868	1,718	3,331	---	3,343	18,036
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**178**	**138,368**	**98,623**	**35,982**	**28,140**	**50,056**	**18,937**	**269,493**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**0**	**0**	**15**	**9,883**	**8,219**	**2,768**	**2,010**	**7,151**	**2,705**	**19,250**
YTD		**0**	**0**	**0**	**298**	**171,559**	**106,763**	**38,983**	**29,057**	**63,595**	**36,628**	**618,464**

				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)
04/29/2016	*	---	599	40	340	78,049	---	---	549	96,537	---	18,711
04/30/2016	*	---	769	43	169	37,608	207,225	92,497	683	---	74,862	34,715
05/01/2016	*	---	---	23	274	51,919	---	46,044	800	93,337	---	43,970
05/02/2016	*	---	---	24	396	74,251	66,911	104,923	777	---	53,774	41,283
05/03/2016	*	---	---	34	477	68,422	43,513	100,423	746	73,016	---	21,617
05/04/2016	*	---	---	33	313	96,668	54,612	74,083	589	---	52,463	32,438
05/05/2016	*	---	---	80	10	75,378	34,261	56,659	572	48,982	---	92,158
05/06/2016	*	---	---	174	1,444	60,866	75,041	54,044	492	---	30,228	38,886
05/07/2016	*	---	---	106	515	91,999	102,392	53,049	836	30,634	---	30,315
05/08/2016	*	---	---	100	---	116,809	81,312	75,574	1,052	---	20,381	24,215
05/09/2016	*	---	---	146	547	151,869	66,701	66,098	1,051	21,139	---	20,899
05/10/2016	*	---	---	49	103	104,009	48,974	63,322	913	---	19,476	19,755
05/11/2016	*	---	---	37	26	95,855	55,245	46,857	912	22,298	---	2,050
05/12/2016	*	---	---	46	---	97,487	37,511	36,644	916	---	13,371	5,305
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**1,368**	**935**	**4,614**	**1,201,189**	**873,698**	**870,217**	**10,888**	**385,943**	**264,555**	**426,317**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**684**	**67**	**385**	**85,799**	**72,808**	**66,940**	**778**	**55,135**	**37,794**	**30,451**
YTD		**755**	**19,918**	**2,912**	**8,882**	**3,510,987**	**2,009,551**	**1,600,134**	**12,985**	**608,905**	**472,112**	**499,818**

Two-Week Summary of Passage Indices

				COMBINED SOCKEYE								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/29/2016	*	---	0	0	1	0	---	---	1,795	50,854	---	2,879
04/30/2016	*	---	0	0	1	0	0	0	3,021	---	19,586	2,276
05/01/2016	*	---	---	0	0	257	---	0	3,272	39,585	---	7,190
05/02/2016	*	---	---	0	12	0	572	0	4,226	---	10,666	12,118
05/03/2016	*	---	---	0	2	0	572	0	6,439	47,990	---	15,280
05/04/2016	*	---	---	0	4	0	0	0	3,205	---	20,680	26,352
05/05/2016	*	---	---	0	0	263	0	288	2,399	51,010	---	23,614
05/06/2016	*	---	---	0	4	0	0	0	3,283	---	19,197	31,694
05/07/2016	*	---	---	0	0	253	572	0	4,641	87,672	---	22,738
05/08/2016	*	---	---	0	---	253	573	261	2,604	---	53,914	49,438
05/09/2016	*	---	---	0	13	1,064	542	0	1,784	54,946	---	113,697
05/10/2016	*	---	---	0	1	550	0	0	2,627	---	24,343	61,240
05/11/2016	*	---	---	0	1	513	558	270	1,717	124,529	---	27,890
05/12/2016	*	---	---	0	---	0	0	0	1,328	---	23,400	33,949
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**39**	**3,153**	**3,389**	**819**	**42,341**	**456,586**	**171,786**	**430,355**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**0**	**0**	**3**	**225**	**282**	**63**	**3,024**	**65,227**	**24,541**	**30,740**
YTD		**1**	**0**	**0**	**57**	**3,786**	**3,389**	**819**	**54,327**	**522,281**	**195,374**	**441,914**

				COMBINED LAMPREY JUVENILES								
		WTB	IMN	GRN	LEW	LGR†	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(Samp)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)
04/29/2016	*	---	0	0	0	1	---	---	0	1,400	---	100
04/30/2016	*	---	0	0	0	0	1,600	400	0	---	1,429	0
05/01/2016	*	---	---	0	0	0	---	200	0	2,000	---	0
05/02/2016	*	---	---	0	0	0	3,600	600	0	---	1,143	0
05/03/2016	*	---	---	0	0	0	1,600	0	0	400	---	143
05/04/2016	*	---	---	0	0	0	400	1,200	1	---	1,000	20
05/05/2016	*	---	---	0	0	0	0	0	0	1,400	---	286
05/06/2016	*	---	---	0	0	1	0	200	0	---	857	0
05/07/2016	*	---	---	0	0	1	1,600	0	0	1,557	---	143
05/08/2016	*	---	---	0	---	0	800	200	0	---	857	143
05/09/2016	*	---	---	0	0	5	1,600	0	0	736	---	0
05/10/2016	*	---	---	0	0	1	800	400	0	---	714	0
05/11/2016	*	---	---	0	0	6	1,600	4	0	1,200	---	143
05/12/2016	*	---	---	0	---	34	1,800	200	0	---	400	143
05/13/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**49**	**15,400**	**3,404**	**1**	**8,693**	**6,400**	**1,121**
# Days:		**0**	**2**	**14**	**12**	**14**	**12**	**13**	**14**	**7**	**7**	**14**
Average:		**0**	**0**	**0**	**0**	**4**	**1,283**	**262**	**0**	**1,242**	**914**	**80**
YTD		**0**	**4**	**1**	**0**	**140**	**21,100**	**4,824**	**83**	**15,943**	**14,504**	**7,544**

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.

Two classes of fish counts are shown in these tables:
Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details †.
Collection counts (Coll), which account for sample rates but are not adjusted for flow;
Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.
Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, pacific lamprey macropthalmia, and unidentified lamprey species.

† In 2013 it was confirmed that juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection. Therefore, only sample counts are provided in this report.

Definitions for Smolt Index Counts

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

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

Two Week Transportation Summary

Source: Fish Passage Center Updated: 5/13/16 7:05 AM

04/29/16 TO 05/13/16

		Species					
Site	Data	**CH0**	**CH1**	CO	ST	SO	**Grand Total**
LGR	Sum of NumberCollected	9,600	1,744,935	105,400	922,066	2,400	2,784,401
	Sum of NumberBarged	8,142	1,305,253	97,146	779,507	2,191	2,192,239
	Sum of NumberBypassed	1,437	438,324	8,200	142,476	200	590,637
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	42	0	12	0	55
	Sum of FacilityMorts	20	1,196	54	46	9	1,325
	Sum of ResearchMorts	0	120	0	25	0	145
	Sum of TotalProjectMorts	21	1,358	54	83	9	1,525
LGS	Sum of NumberCollected	14,400	1,098,760	70,200	616,305	2,400	1,802,065
	Sum of NumberBarged	13,177	892,170	62,200	471,475	2,399	1,441,421
	Sum of NumberBypassed	1,216	206,400	8,000	144,800	1	360,417
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	7	0	2	0	11
	Sum of FacilityMorts	5	183	0	28	0	216
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	7	190	0	30	0	227
LMN	Sum of NumberCollected	7,200	2,348,300	26,800	621,500	600	3,004,400
	Sum of NumberBarged	5,170	1,697,709	22,781	498,980	599	2,225,239
	Sum of NumberBypassed	1,829	650,210	4,018	122,446	0	778,503
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	92	0	9	0	101
	Sum of FacilityMorts	1	289	1	65	2	358
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	381	1	74	2	459
Total Sum of NumberCollected		31,200	5,191,995	202,400	2,159,871	5,400	7,590,866
Total Sum of NumberBarged		26,489	3,895,132	182,127	1,749,962	5,189	5,858,899
Total Sum of NumberBypassed		4,482	1,294,934	20,218	409,722	201	1,729,557
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		3	141	0	23	0	167
Total Sum of FacilityMorts		26	1,668	55	139	11	1,899
Total Sum of ResearchMorts		0	120	0	25	0	145
Total Sum of TotalProjectMorts		29	1,929	55	187	11	2,211

YTD Transportation Summary

Source: Fish Passage Center Updated: 5/13/16 7:05 AM

TO: 05/13/16

		Species					
Site	Data	**CH0**	**CH1**	CO	SO	ST	**Grand Total**
LGR	Sum of NumberCollected	39,590	4,408,265	130,270	2,850	2,644,548	7,225,523
	Sum of NumberBarged	8,142	1,305,253	97,146	2,191	779,507	2,192,239
	Sum of NumberBypassed	31,374	3,101,401	33,069	650	1,864,911	5,031,405
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	12	93	1	0	29	135
	Sum of FacilityMorts	62	1,278	54	9	51	1,454
	Sum of ResearchMorts	0	240	0	0	50	290
	Sum of TotalProjectMorts	74	1,611	55	9	130	1,879
LGS	Sum of NumberCollected	16,000	2,307,954	75,800	2,400	1,401,269	3,803,423
	Sum of NumberBarged	13,177	892,170	62,200	2,399	471,475	1,441,421
	Sum of NumberBypassed	2,816	1,415,436	13,600	1	929,747	2,361,600
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	18	0	0	5	25
	Sum of FacilityMorts	5	330	0	0	42	377
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	7	348	0	0	47	402
LMN	Sum of NumberCollected	7,200	3,310,294	29,020	600	1,153,464	4,500,578
	Sum of NumberBarged	5,170	1,697,709	22,781	599	498,980	2,225,239
	Sum of NumberBypassed	1,829	1,612,176	6,238	0	654,407	2,274,650
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	120	0	0	12	132
	Sum of FacilityMorts	1	289	1	2	65	358
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	409	1	2	77	490
Total Sum of NumberCollected		62,790	10,026,513	235,090	5,850	5,199,281	15,529,524
Total Sum of NumberBarged		26,489	3,895,132	182,127	5,189	1,749,962	5,858,899
Total Sum of NumberBypassed		36,019	6,129,013	52,907	651	3,449,065	9,667,655
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		14	231	1	0	46	292
Total Sum of FacilityMorts		68	1,897	55	11	158	2,189
Total Sum of ResearchMorts		0	240	0	0	50	290
Total Sum of TotalProjectMorts		82	2,368	56	11	254	2,771

Cumulative Adult Passage at Mainstem Dams Through: 05/12

		Spring Chinook						Summer Chinook						Fall Chinook					
	END	2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.	
DAM	DATE	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	05/12	102902	5860	178203	5784	111483	11242	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/12	69856	4357	154810	4818	78080	7892	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/12	60567	2892	129465	4258	62638	6197	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/12	44217	2077	116626	2799	47024	3169	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/12	35684	1229	86052	1114	32089	1720	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/12	31715	1286	78509	1816	26708	1252	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/12	26337	1332	71436	1772	20540	973	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/12	20508	600	65217	1247	17609	648	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/11	5507	38	15475	293	5602	64	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/11	4477	33	13970	134	4746	41	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/11	2500	6	15628	81	3783	37	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/11	591	2	5403	38	1182	6	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/11	147	0	3150	18	566	8	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/11	9913	286	31408	967	13061	244	0	0	0	0	0	0	0	0	0	0	0	0

		Coho						Sockeye			Steelhead						Lamprey		
	END	2016		2015		10-Yr Avg.				10-Yr			10-Yr	Wild	Wild	10-Yr			10-Yr
DAM	DATE	Adult	Jack	Adult	Jack	Adult	Jack	2016	2015	Avg.	2016	2015	Avg.	2016	2015	Avg.	2016	2015	Avg.
BON	05/12	0	0	0	0	0	0	1	1	0	4157	4434	4273	1667	2338	1321	603	17	24
TDA	05/12	0	0	0	0	0	0	0	0	0	306	334	2354	170	164	924	0	0	0
JDA	05/12	0	0	0	0	0	1	0	0	0	358	501	4640	246	319	1794	274	43	3
MCN	05/12	-1	0	0	0	1	0	1	0	0	472	664	5464	305	415	1854	3	15	2
IHR	05/12	0	0	0	0	0	0	0	0	0	1323	1040	5088	698	665	1533	1	3	0
LMN	05/12	-2	0	0	0	0	0	0	0	0	1406	3370	8276	977	1818	2781	0	0	0
LGS	05/12	0	0	0	0	0	0	0	0	0	3381	1436	3028	1953	969	1451	0	1	0
LGR	05/12	0	0	0	0	0	0	0	0	0	5443	9117	9142	3095	4291	3434	-1	0	0
PRD	05/11	0	0	0	0	0	0	0	0	0	13	28	38	0	0	0	46	5	0
WAN	05/11	0	0	0	0	0	0	0	1	0	19	49	82	0	0	0	16	3	0
RIS	05/11	0	0	0	0	0	0	1	0	0	32	98	100	15	74	57	0	0	0
RRH	05/11	0	0	0	0	0	0	0	0	0	73	101	281	21	71	196	0	0	0
WEL	05/11	0	0	0	0	0	0	0	0	0	40	20	38	14	15	26	1	0	0
WFA	05/11	0	0	1	0	0	0	0	0	0	8364	5077	8579	0	0	0	0	0	0

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

Page last updated on: 05/13/16

Columbia/Snake Project Forebay Temperatures