



Fish Passage Center

Weekly Report #16-4

April 8, 2016

Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 24% and 55% of average at individual sub-basins over April. Precipitation above The Dalles has been 38% of average over April. Over the 2016 water year, precipitation has ranged between 86% and 115% of average.

Table 1. Summary of April precipitation and cumulative October through April 6 precipitation with respect to average (1971–2000) at select locations within the Columbia and Snake River Basins.

Location	Water Year 2016 April 1–6, 2016		Water Year 2016 October 1, 2015 to April 6, 2016	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia above Coulee	0.30	55	24.8
Snake River above Ice Harbor	0.10	24	14.6	102
Columbia above The Dalles	0.17	38	18.9	107
Kootenai	0.27	50	24.9	108
Clark Fork	0.11	22	14.7	94
Flathead	0.18	31	23.3	109
Pend Oreille River Basin above Waneta Dam	0.15	29	20.5	104
Salmon River Basin	0.16	29	18.3	102
Upper Snake Tributaries	0.16	33	13.7	86
Clearwater	0.23	33	28.4	107
Willamette River above Portland	0.41	37	58.9	115

Snowpack within the Columbia Basin has been slightly above average. Snowpack in the Columbia River for basins above the Snake River confluence is 112% of average. For Snake River Basins the snowpack is 107% of average. For lower Columbia Basins between McNary and Bonneville Dam snowpack is 111% of average.

Table 2 displays the April 7th ESP runoff volume forecasts for multiple reservoirs along with the April COE forecasts at Libby and Dworshak. The April 7th ESP forecast at The Dalles between April and August is 89,534 Kaf (101% of average).

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

Location	April 7, 2016 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	101	89,534
Grand Coulee (Apr–Aug)	101	57,410
Libby Res. Inflow, MT (Apr–Aug)	92 114*	5,543 6,681*
Hungry Horse Res. Inflow, MT (Apr–Aug)	88	1,711
Lower Granite Res. Inflow (Apr–July)	100	19,916
Brownlee Res. Inflow (Apr–July)	91	5,005
Dworshak Res. Inflow (Apr–July)	101 95*	2,436 2,303*

* Denotes COE April Forecast

Grand Coulee Reservoir is at 1,252.5 feet (4-7-16) and has held steady over the last week. Outflows at Grand Coulee have ranged between 66.5 and 125.1 Kcfs over the last week. The April 10th FC Elevation at Grand Coulee is currently 1,264.4 feet (based on March Final Forecast). Grand Coulee will be drafted to 1255 feet and below this year for a period of eight weeks for drum gate maintenance (mid-March to mid-May).

The Libby Reservoir is currently at elevation 2,398.3 feet (4-7-16) which is 0.7 feet above the previous week. Daily average outflows at Libby Dam have been 5.2–7.0 Kcfs over the last week. The April 10th FC Elevation at Libby is currently 2,397.8 feet (based on March Final Forecast).

Hungry Horse is currently at an elevation of 3,519.7 feet (4-7-16) and has filled 1.3 feet over the last week. Outflows at Hungry Horse have been 2.2 Kcfs over the last week. The April 10th FC Elevation at Hungry Horse is currently 3,544.9 feet (based on March Final Forecast).

Dworshak is currently at an elevation of 1,563.8 feet (4-7-16) and has drafted 4.4 feet over the last week. Outflows have been 14.5–16.5 Kcfs over the last week. The COE has issued a new increased water supply forecast that established a new end of April flood control elevation of 1,543.5 feet. The project will be drafting throughout the month.

The Brownlee Reservoir was at an elevation of 2,044.2 feet on April 7, 2016, and has drafted 0.3 feet over the last week. The April 10th FC Elevation at Brownlee is currently 2,057.6 feet (based on March Final Forecast).

Spill

Spill in excess of hydraulic capacity is presently occurring at Dworshak Dam as outflows were increased above the hydraulic capacity of the project. This increase in project outflow was necessary because the Corps of Engineers issued a new water supply forecast that was significantly greater than they had been predicting would occur. Previously they estimated the April through July inflow to the project at 84% of average, while now they are estimating inflow to be 95% of average. This inflow increase of approximately 200 Kaf necessitates that the project draft to a deeper end of April flood control elevation. Outflow from the project was increased on April 1 to address the need to draft the project and has ranged from a daily average of 14.5 Kcfs to 16.4 Kcfs, with a spill level ranging from 4.6 Kcfs to 6.5 Kcfs. The total dissolved gas levels have remained below the 110% standard thus far, but have been as high as 108.4%.

The 2016 spill for fish passage program at the lower Snake River projects began just after midnight on April 3rd.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	45 Kcfs/Gas Cap

Thus far all of the lower Snake River projects have spilled at the 2016 Fish Operations Plan (FOP) levels over the past week.

Spill for fish passage will begin on April 10th at the lower Columbia River projects. Spill for fish passage at the lower Columbia River projects will occur at the following amounts described in the 2016 Fish Operations Plan. Over the past week some levels of uncontrolled spill have occurred at McNary, John Day and The Dalles and Bonneville dams.

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

Smolt Monitoring:

Smolt Monitoring Program (SMP) sampling is ongoing at all SMP traps and most bypass facilities, except Little Goose Dam (LGS). Sampling at LGS has been delayed due to a leak in a water supply pipe, but is expected to begin this weekend.

This week’s samples at Bonneville Dam (BON) were dominated by coho. This week’s daily average passage index for coho at BON was about 2,200 per day, which is a substantial increase over last week’s daily average passage index of only 20 per day. The increase in coho passage coincides with a large hatchery release (2.5 million) of coho juveniles to the Klickitat River that was scheduled to occur in mid-March to early April. Passage of yearling Chinook, subyearling Chinook, and steelhead all increased this week when compared to the previous week. This week’s daily average passage index for yearling Chinook was about 1,260 per day, compared to last week’s daily average passage index

of only about 340 per day. This week's daily average passage for subyearling Chinook was about 600 per day. Of the subyearling Chinook sampled this week, approximately 71% were fry. This week's daily average passage index for steelhead was about 260 per day, compared to only 60 per day last week. Sockeye juveniles were also collected at BON this week, but in small numbers. No Pacific lamprey ammocoetes were sampled at BON this week. Pacific lamprey macrophthalmia were encountered every day this week. The daily average collection for pacific lamprey macrophthalmia for this week was about 80 per day, which was slightly lower than last week's daily average collection of about 100 per day.

Sampling at John Day (JDA) began on April 1st, with the first sample tallied and reported on April 2nd. For 2016, sampling at JDA has been modified to 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. So far, only three days' worth of data has been collected from JDA. Yearling Chinook dominated the collections this week, with a daily average passage index of nearly 2,500 fish per day. Steelhead were the second most abundant salmonid, with a daily average passage index of about 300 fish per day. Other salmonids encountered in this week's samples included subyearling Chinook (fry), coho, and sockeye. Passage numbers for these salmonids were very low. Pacific lamprey ammocoetes were encountered in two of this week's samples (April 4th and 6th). Collection estimates on each of these two days were less than 10 fish. Pacific lamprey macrophthalmia were collected in all three of this week's samples, with a daily average collection of about 450 macrophthalmia per day.

Sampling at McNary Dam (MCN) began on April 6th, with the first sample tallied and reported on April 7th. Similar to recent years, sampling at MCN in 2016 will be every-other-day for the entire SMP season. For the one sample that has occurred to date (April 7th), steelhead were the dominant species of salmonid at MCN, with a passage index of about 1,200 fish. Chinook were the second most abundant species (both yearling and subyearling), with passage indices of about 500 for each species. All of the subyearling Chinook juveniles that were encountered in the April 7 sample were fry. Coho were also encountered in this week's sample

but in relatively low numbers. Finally, Pacific lamprey macrophthalmia were collected in this week's sample, with an estimated 20 collected.

This week's samples at Lower Granite Dam (LGR) continued to be dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was about 12,200 per day, which is slightly more than last week's daily average passage index of about 11,700 per day. Steelhead were the second most abundant salmonid this week, with a daily average passage index of nearly 7,700 per day. This is an increase over last week's daily average passage index of about 1,050 per day. Passage of subyearling Chinook decreased slightly this week, with a daily average passage index of about 390 per day. To date, all of the subyearling Chinook that have been collected at LGR this year have been fry. Coho and sockeye were also collected at LGR this week but in relatively low numbers. It is likely that the sockeye that were collected in this week's samples were actually kokanee that escaped from Dworshak reservoir as a result of spill operations at Dworshak Dam. No lamprey juveniles were encountered in this week's collections at LGR.

Sampling at Little Goose Dam (LGS) was originally scheduled to begin on or around April 1st. However, a malfunctioning water supply pipe has caused a delay in sampling. The pipe is currently being repaired and sampling is expected to begin this weekend. Sampling at LGS will be limited to a 24-hour sample every-other-day until transportation begins.

Sampling at Lower Monumental Dam (LMN) began on April 1st, with the first sample tallied and reported on April 2nd. Sampling at LMN is limited to a 24-hour sample every-third-day for the first couple of weeks of April and then every-other-day until transportation begins. So far, only two samples have been conducted at LMN. These two samples were dominated by yearling Chinook and steelhead, with passage indices ranging from about 440 to 870 for yearling Chinook and 300 to 750 for steelhead. Coho were the only other salmonids that were encountered in this week's samples, but in very small numbers. Finally, Pacific lamprey macrophthalmia were encountered on April 2nd, with an estimated collection of 20 fish.

Sampling at Rock Island Dam (RIS) began on April 1st, with the first sample tallied and reported on

April 2nd. Subyearling Chinook dominated this week's samples, with a daily average passage index of about 450 per day. To date, all of the subyearling Chinook that have been sampled at RIS this year were fry. Sockeye were the second most abundant salmonid in this week's samples. This week's daily average passage index for sockeye was just over 100 per day. Steelhead, yearling Chinook, and coho were also encountered every day this week but in relatively low numbers. Finally, both Pacific lamprey ammocoetes and macrophthalmia were collected this week at RIS. One ammocoetes was collected in the sample from April 6th. Pacific lamprey macrophthalmia were collected every day this week, with a daily average collection of 3 per day.

The Grande Ronde Trap 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 about 240, which is similar to last week's daily average collection of about 260 per day. The only other salmonids that were encountered in this week's samples were a few subyearling Chinook (fry) and a few steelhead juveniles.

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. Yearling Chinook continued to dominate the collections at WTB this week. After substantial increases in yearling Chinook collections on Monday, sampling at WTB was reduced to 14 hours for Tuesday and 9 hours for the remainder of the week. This was done in order to reduce the handling of listed hatchery Chinook in the sample. This week's daily average collection for yearling Chinook was about 2,000 per day, which is an increase over last week's daily average collection of about 840 per day. Steelhead collections also increased this week. The daily average collection for steelhead this week was about 30 per day. Last week only one steelhead juvenile was collected at WTB (April 1st). Reduced sampling will likely remain in place for the beginning of next week and then evaluated as the week progresses.

The Snake River Trap is located at river kilometer 225 and operated by Idaho Department of Fish and

Game. In an effort to minimize handling of listed hatchery yearling fall Chinook released from Captain John Rapids Acclimation Facility, sampling at the Snake River Trap was suspended from 0800 April 1st through 0800 April 4th. Since sampling resumed on April 4th, steelhead have dominated the collections at this trap. The daily average collection for steelhead over the last three samples has been nearly 60 per day. This is an increase over last week's daily average collection of about 20 per day. Collections of yearling Chinook also increased this week, when compared to the previous week. The average collection for yearling Chinook over the last three samples was about 35 fish per day. Last week's daily average collection was only five fish per day. Other than yearling Chinook and steelhead, 12 Chinook fry (i.e., subyearling Chinook) and one coho were collected over the last three samples.

The Imnaha River Trap is located at river kilometer seven 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 Imnaha Trap only through March 30th. Yearling Chinook dominated the collections over the last week (Mar. 24–30), with a daily average collection of about 90 fish per day. All of the yearling Chinook juveniles that were collected at the trap this week were unclipped. Steelhead juveniles were also collected at the trap this week, but in relatively low numbers. The daily average collection for steelhead juveniles at the trap this week was 11 per day. Finally, one Pacific lamprey ammocoetes was encountered in the sample from March 29th. This is the second Pacific lamprey ammocoetes collected at this trap so far this season.

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 764,000 yearling fall Chinook juveniles were scheduled to be released in this zone this week. Of these, 487,000 (64%) were released from Lyons Ferry Hatchery, which is located on the Snake River above Lower Monumental Dam. The remaining

277,000 (36%) were scheduled to be released from acclimation facilities above Lower Granite Dam. These acclimation sites included Big Canyon Creek Acclimation Facility on the Clearwater River (123,000 released) and Pittsburg Landing Acclimation Facility on the Snake River (154,000). In addition, nearly 660,000 yearling spring Chinook were scheduled for release into the Clearwater River this week. Just over 1.0 million yearling summer Chinook were scheduled to be released into the South Fork Salmon River. Finally, about 2.2 million summer steelhead juveniles were scheduled to be released in this zone this week. Of these, about 1.4 million were released directly into the South Fork Salmon River while the remaining 820,000 were released into the Pahsimeroi River.

Approximately 1.3 million yearling spring Chinook are scheduled to be released to this zone over the next two weeks. Of these, about 49% are scheduled for release into the Grande Ronde River and its tributaries, 37% are scheduled for release into the Imnaha River, and 14% are scheduled to be released into the Salmon River. There are several releases of summer steelhead juveniles scheduled for this zone over the next two weeks. These releases are expected to total nearly 4.8 million summer steelhead. Of these, about 62.5% are scheduled for release into the Clearwater River and its tributaries, 26% are scheduled for release into the Salmon River and its tributaries, 7.5% are scheduled for release into the Wallowa River. The remaining 4% are scheduled to be released below Little Goose Dam. These lower river releases include approximately 108,000 summer steelhead scheduled to be released from Lyons Ferry Hatchery and 94,500 summer steelhead scheduled to be released into the Tucannon River.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Approximately 100,000 summer steelhead juveniles were scheduled to be released into the Walla Walla River this week. This was the only new release scheduled for this zone this week. Just over 2.75 million yearling spring Chinook are scheduled to be released into this zone over the next two weeks. These spring Chinook releases are scheduled to occur on the Wenatchee River (52%), Methow River (22%), Okanogan River (7%), and directly into the Columbia

River just below Chief Joseph Dam (19%). In addition, just over 2.0 million yearling summer Chinook are scheduled for release into this zone over the next two weeks. Of these, approximately 59% are scheduled to be released directly into the Columbia River either at Chelan Falls, from Wells Hatchery (below Wells Dam), or from Chief Joseph Hatchery (below Chief Joseph Dam). The remaining 41% are scheduled to be released into the Okanogan River and its tributaries. Nearly 1.3 million coho juveniles are scheduled to be released into the Yakima River beginning in mid-April. These coho releases are part of a Yakama Tribal Coho Reintroduction Program on the Wenatchee, Methow, and Yakima River basins. Finally, nearly 469,000 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. These steelhead releases are scheduled to occur throughout this river zone, including releases directly to the Columbia (below Wells Dam) (34%), Okanogan (23%), Methow (28%), Wenatchee (5%), and Touchet (10%) rivers.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Approximately 960,000 yearling spring Chinook were scheduled to be released to this zone this week. Of these about 885,000 (92%) were scheduled to be released into the Umatilla River while the remaining 75,000 (8%) were scheduled to be released into Hood River. In addition, about 162,000 summer steelhead juveniles were scheduled to be released into the Deschutes River this week.

Approximately 6.0 million subyearling fall Chinook tules are scheduled for release from Spring Creek National Fish Hatchery on or around April 11th. Several releases of yearling spring Chinook juveniles are scheduled for this zone over the next two weeks. In all, these spring Chinook releases are expected to total just over 2.75 million juveniles and are scheduled to occur throughout the river zone. These yearling spring Chinook are scheduled to be released into the Deschutes (10%), Little White Salmon (48%), and Wind (42%) rivers. Approximately 500,000 coho are scheduled to be released in to the Umatilla River on or around April 16th. About 111,000 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. Of these, about 90,000 (81%)

are scheduled to be released into the Klickitat River while the remaining 19% are scheduled to be released into the Deschutes River. Finally, about 15,500 winter steelhead juveniles are scheduled to be released into Rock Creek, near Stevenson, Washington on or around April 15th.

Adult Passage

Adult counts at Bonneville Dam have been updated through 4/7/16. The 2016 adult spring Chinook count at Bonneville Dam of 924 is about 27.6% of the 2015 count of 3,352. The 2016 Bonneville Dam adult spring Chinook count has 12 more fish than the 10-year average count of 912. At Willamette Falls, 298 adult spring Chinook have been counted so far this year.

The 2016 Bonneville Dam adult steelhead count of 3,074 is about 90% of the 2015 count of 3,419, while being about 1.4 times greater than the 10-year average count of 2,771. This year's Lower Granite steelhead count of 4,459 is about 56% of the 2015 count of 7,964 and 68.7% of the 10-year average count of 6,494. At Willamette Falls, the 2016 count for steelhead was 4,879 as of April 6th. This year's steelhead count is about 1.4 times greater than the 2015 count of 3,465 and has 500 more fish than the 10-year average count of 4,379.

Between March 1st and April 4th, a total of 87 steelhead, 6 salmon, and 3 other salmonid species were observed over the separator at the Bonneville Juvenile Monitoring Facility (JMF). 2016 Kelt passage at the Bonneville JMF can be found at: <http://www.fpc.org/adultsalmon/bonkeltcounts.htm>.

Hatchery Releases Last Two Weeks

Hatchery Release Summary
From: **3/26/2016** to **04/08/16**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	474,513	04-04-16	04-05-16	N Fk Clearwater River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	478,063	03-30-16	04-01-16	Mill Cr Bridge	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	1,234,943	03-23-16	03-29-16	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2016	154,869	04-04-16	04-08-16	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2016	875,460	04-04-16	04-08-16	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	560,000	03-21-16	04-02-16	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	820,000	04-02-16	04-21-16	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	66,859	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	1,054,263	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2016	154,000	04-01-16	04-01-16	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2016	1,463,000	04-01-16	04-01-16	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game Total					7,335,970				
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	30,000	03-28-16	03-28-16	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	123,000	04-08-16	04-08-16	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	154,000	04-07-16	04-07-16	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	163,000	04-01-16	04-01-16	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2016	118,117	03-28-16	03-31-16	Johnson Cr Idaho	South Fork Salmon River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2016	185,260	04-04-16	04-07-16	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2016	191,372	04-01-16	04-01-16	Lolo Creek	Clearwater River M F
Nez Perce Tribe Total					964,749				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2016	162,000	04-08-16	04-08-16	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH1	SP	2016	165,000	04-07-16	04-07-16	Corporation Guard Station	Umatilla River
Oregon Dept. of Fish and Wildlife Total					327,000				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	129,000	03-31-16	04-03-16	McNabb/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	Warm Springs NFH	CH1	SP	2016	133,000	03-30-16	03-30-16	Warm Springs Hatchery	Deschutes River
U.S. Fish and Wildlife Service Total					1,666,000				
Umatilla Tribe	Carson NFH	CH1	SP	2016	250,000	03-31-16	03-31-16	Walla Walla River	Walla Walla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2016	240,000	04-07-16	04-07-16	Thornhollow Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2016	480,000	04-07-16	04-07-16	Imequas Acclim Pond	Umatilla River
Umatilla Tribe Total					970,000				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2016	37,500	04-08-16	04-08-16	W Fk Hood River	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2017	37,500	04-08-16	04-08-16	W Fk Hood River	Hood River
Warm Springs Tribe Total					75,000				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2016	487,000	04-04-16	04-06-16	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	100,000	04-07-16	04-15-16	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	200,000	03-20-16	04-07-16	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2016	36,900	03-01-16	03-31-16	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2016	180,000	04-01-16	04-30-16	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2016	220,000	04-01-16	04-15-16	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2016	2,504,900	03-15-16	04-01-16	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife Total					3,728,800				
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	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	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					729,780				
Grand Total					15,797,299				

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
		From:		4/9/2016		to		4/22/2016	
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		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2016	527,000	04-15-16	04-30-16	Chief Joseph Hatchery	Mid-Columbia River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	256,000	04-15-16	04-30-16		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	342,500	04-15-16	04-30-16		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	402,000	04-15-16	04-30-16	Chief Joseph Hatchery	Mid-Columbia River
Colville Tribe	Wells Hatchery	ST	SU	2016	2,000	04-20-16	04-23-16	Aneas Creek	Okanogan River
Colville Tribe	Wells Hatchery	ST	SU	2016	10,000	04-13-16	04-30-16		Okanogan River
Colville Tribe	Wells Hatchery	ST	SU	2016	25,000	04-20-16	04-23-16	Similkameen Acclim Pd	Okanogan River
Colville Tribe	Wells Hatchery	ST	SU	2016	30,000	04-15-16	04-20-16	Omak Creek	Okanogan River
Colville Tribe	Wells Hatchery	ST	SU	2016	40,000	04-20-16	04-23-16	Salmon Creek (Okanogan)	Okanogan River
Colville Tribe Total					1,838,500				
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2016	121,708	04-18-16	04-18-16	Newsome Creek	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2016	227,969	04-11-16	04-11-16	Redhouse (Sfk ClearH20 R)	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2016	543,756	04-12-16	04-15-16	Meadow Creek - CLES	S Fk Clearwater River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	40,000	04-18-16	04-18-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-11-16	04-11-16	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-12-16	04-12-16	Shoup Br (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-13-16	04-26-16	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-21-16	04-22-16	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	120,000	04-20-16	04-21-16	Squaw Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	150,000	04-22-16	04-26-16	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	160,000	04-18-16	04-20-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	200,000	04-14-16	04-15-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	200,000	04-21-16	04-24-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	820,000	04-02-16	04-21-16	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	66,859	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	1,054,263	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2016	189,000	04-20-16	04-20-16	Yankee Fk (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game Total					4,253,555				
Nez Perce Tribe	Dworshak NFH	ST	SU	2016	200,000	04-11-16	04-22-16	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2016	250,000	04-15-16	04-15-16	Lostine Accim Pond	Wallowa River
Nez Perce Tribe Total					450,000				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	360,000	04-10-16	04-10-16	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2016	250,000	04-15-16	04-15-16	Lookingglass Creek	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2016	490,000	04-15-16	04-15-16	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2016	1,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2016	20,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2016	240,000	04-15-16	05-31-16	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	04-15-16	04-15-16	Wychus Creek	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	15,000	04-15-16	04-15-16	Metolius River	Deschutes River
Oregon Dept. of Fish and Wildlife Total					1,386,000				
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2016	1,170,000	04-12-16	04-12-16	Carson Hatchery	Wind River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	300,000	04-11-16	04-22-16	Clear Creek	Clearwater River M F
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	400,000	04-11-16	04-22-16	Redhouse (Sfk ClearH20 R)	S Fk Clearwater River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	1,200,000	04-11-16	04-22-16	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2016	1,050,000	04-11-16	04-11-16	Icicle Creek	Wenatchee River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2016	1,320,000	04-14-16	04-14-16	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2016	6,000,000	04-11-16	04-11-16	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2016	405,500	04-15-16	04-21-16	Winthrop Hatchery	Methow River
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					11,976,200				

Hatchery Releases Next Two Weeks

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Umatilla Tribe	Cascade Hatchery	CO	UN	2016	500,000	04-16-16	04-16-16	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2016	150,000	04-15-16	04-15-16	Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2016	250,000	03-15-16	04-15-16	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe Total					900,000				
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	110,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	119,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	120,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	121,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2016	144,000	04-15-16	04-15-16	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2016	230,000	04-15-16	05-01-16	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2017	225	04-20-16	05-01-16		Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2016	24,000	04-20-16	05-31-16	Blackbird Island Acc Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	44,500	04-10-16	04-15-16	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	47,000	04-15-16	04-20-16	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	85,000	03-25-16	04-15-16	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	100,000	04-07-16	04-15-16	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	108,000	04-10-16	04-10-16	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2016	36,300	04-15-16	04-20-16	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2016	157,000	04-15-16	04-20-16	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Similkameen Hatchery	CH1	SU	2016	240,000	04-15-16	04-30-16	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2016	90,000	04-20-16	04-30-16	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2016	15,500	04-15-16	05-15-16	Rock Cr (Stevenson)	Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2016	220,000	04-01-16	04-15-16	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2016	50,000	04-15-16	04-15-16	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2016	320,000	04-15-16	05-07-16	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2016	160,000	04-20-16	05-31-16	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					2,541,525				
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	95,939	04-15-16	06-01-16	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	193,067	04-15-16	06-01-16	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	215,045	04-15-16	06-01-16	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	74,227	04-15-16	06-01-16	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	74,951	04-15-16	06-01-16	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	76,167	04-15-16	06-01-16	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	299,959	04-15-16	06-01-16	Prosser Acclim Pond	Yakima River
Yakama Tribe Total					1,029,355				
Grand Total					24,375,135				

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
03/25/2016	102.9	0.0	103.8	0.0	105.1	0.0	99.7	0.0	106.6	0.0	121.4	0.0	122.0	0.0
03/26/2016	108.2	0.0	108.8	0.0	112.9	0.0	111.9	0.0	122.1	0.0	111.3	0.0	108.0	0.0
03/27/2016	81.2	0.0	78.7	0.0	85.4	0.0	81.0	0.0	87.7	0.0	103.4	0.0	112.7	0.0
03/28/2016	123.1	0.0	125.6	0.0	123.1	0.0	117.9	0.0	124.4	0.0	114.9	0.0	112.2	0.0
03/29/2016	107.4	0.0	116.5	0.0	121.7	0.0	119.4	0.0	129.6	0.5	133.1	0.0	128.1	5.2
03/30/2016	94.3	0.0	94.1	0.0	109.1	0.0	113.7	0.0	124.5	0.1	128.9	0.0	127.9	0.0
03/31/2016	77.0	0.0	73.4	0.0	88.3	0.0	86.3	0.0	96.6	0.0	133.7	0.0	133.1	0.0
04/01/2016	114.8	0.0	116.2	0.0	116.8	0.0	110.1	0.0	115.5	0.0	115.6	0.0	120.4	0.0
04/02/2016	66.5	0.0	68.9	0.0	78.5	0.0	79.9	0.0	91.7	0.0	98.1	0.0	100.1	0.0
04/03/2016	104.4	0.0	105.9	0.0	102.6	0.0	93.0	0.0	101.8	0.0	87.4	0.0	86.5	0.0
04/04/2016	114.2	0.0	113.7	0.0	120.4	1.1	115.6	0.5	129.9	0.0	118.3	0.8	104.4	1.3
04/05/2016	125.1	0.0	121.2	0.0	131.7	2.0	129.7	1.3	143.6	0.4	147.2	1.9	144.2	5.2
04/06/2016	112.9	0.0	120.8	0.0	133.1	0.1	132.3	0.2	147.3	0.7	156.8	0.0	154.9	18.1
04/07/2016	81.1	0.0	84.3	0.0	105.6	0.0	113.3	0.0	129.3	0.1	152.7	0.0	153.8	4.1

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

Date	Dworshak		Brownlee Inflow	Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	
03/25/2016	7.7	0.0	---	21.1	72.5	0.0	70.9	0.0	74.9	0.0	72.5	0.0	
03/26/2016	7.7	0.0	---	20.5	66.2	0.0	65.0	0.0	68.9	0.0	70.0	0.0	
03/27/2016	7.7	0.0	---	19.7	65.3	0.0	63.2	0.0	66.6	0.0	69.8	0.0	
03/28/2016	5.0	0.0	---	20.6	61.0	0.0	59.2	0.0	61.5	0.0	60.3	0.0	
03/29/2016	2.3	0.0	---	20.8	59.8	0.0	58.2	0.0	62.6	0.0	63.3	0.0	
03/30/2016	2.2	0.0	---	20.4	52.1	0.0	55.5	0.0	56.6	0.0	60.6	0.0	
03/31/2016	7.1	1.5	---	19.5	50.4	0.0	54.9	0.0	60.4	0.0	60.7	0.0	
04/01/2016	14.5	4.6	---	19.5	59.2	0.0	57.1	0.0	58.0	0.0	59.1	0.0	
04/02/2016	15.1	5.2	---	19.2	61.2	0.0	59.5	0.0	63.5	0.0	64.7	0.0	
04/03/2016	15.0	5.2	---	19.0	61.3	20.0	62.8	18.7	65.2	27.9	66.8	49.8	
04/04/2016	15.2	5.3	---	19.0	65.6	20.0	64.7	19.3	67.6	27.8	66.1	48.5	
04/05/2016	15.7	5.8	---	13.7	68.6	20.0	67.2	20.2	68.9	28.0	70.7	55.1	
04/06/2016	16.5	6.5	---	14.9	66.2	20.0	63.7	19.1	64.4	28.0	66.8	50.1	
04/07/2016	16.4	6.5	---	17.8	65.9	20.2	65.5	19.5	67.7	28.0	71.8	51.5	

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	
03/25/2016	190.1	0.0	203.1	0.0	205.1	0.0	209.6	1.3	118.4
03/26/2016	190.3	0.0	199.3	0.0	200.7	0.0	227.1	1.2	125.3
03/27/2016	192.9	0.0	184.0	0.0	186.5	0.0	207.8	1.3	117.6
03/28/2016	190.0	0.0	197.6	0.0	199.8	0.0	216.5	1.2	121.4
03/29/2016	186.8	0.0	197.5	0.0	199.4	0.0	216.4	1.2	120.3
03/30/2016	181.6	0.0	180.9	0.0	181.1	0.0	200.5	1.1	115.2
03/31/2016	210.8	6.9	199.2	0.0	197.0	0.0	212.3	1.2	120.0
04/01/2016	200.7	27.1	209.6	0.0	209.9	0.0	227.0	1.2	128.7
04/02/2016	182.1	10.8	185.6	0.0	185.2	0.0	200.5	1.2	116.0
04/03/2016	167.7	0.0	172.4	0.0	172.2	0.0	179.4	1.4	109.9
04/04/2016	159.9	0.1	169.9	0.0	170.1	0.0	186.5	1.4	106.0
04/05/2016	207.0	36.5	206.4	10.2	205.7	8.2	218.2	6.7	114.5
04/06/2016	224.5	54.7	223.2	0.0	219.4	0.0	229.7	1.4	125.7
04/07/2016	242.5	72.2	236.0	18.2	234.3	14.5	250.3	15.6	132.6

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
3/25	96.1	96.3	96.5	24	---	---	---	0	102.9	103.0	103.0	24	102.2	102.6	102.8	24	102.9	103.1	103.2	24
3/26	96.2	96.4	96.6	24	---	---	---	0	103.5	104.2	104.5	24	102.5	103.1	103.7	24	102.8	103.1	103.5	24
3/27	96.1	96.3	96.5	24	---	---	---	0	104.5	104.7	105.0	24	103.8	104.3	105.3	24	103.9	104.2	104.4	24
3/28	95.9	96.0	96.3	24	---	---	---	0	104.0	104.2	104.7	24	102.8	103.1	103.4	24	103.0	103.2	103.4	24
3/29	95.7	95.9	96.2	24	---	---	---	0	104.2	104.4	104.5	24	103.3	104.0	105.3	24	102.9	103.2	103.5	24
3/30	95.6	95.7	96.0	24	---	---	---	0	104.6	105.1	105.9	24	105.1	106.8	110.3	24	103.4	103.6	103.9	24
3/31	95.6	95.8	96.1	24	---	---	---	0	104.7	105.1	106.0	24	110.0	113.7	121.2	24	103.4	103.7	104.2	24
4/1	95.5	95.8	96.2	24	---	---	---	0	105.5	106.5	107.4	24	110.2	112.0	155.1	15	103.8	104.0	104.3	24
4/2	96.0	96.4	96.8	24	---	---	---	0	106.3	107.2	107.9	24	104.3	104.9	105.6	24	104.7	105.4	105.9	24
4/3	96.0	96.3	96.8	24	---	---	---	0	105.2	105.4	105.9	24	104.5	104.7	104.8	24	105.3	105.7	106.0	24
4/4	96.1	96.3	96.6	24	---	---	---	0	105.9	107.1	108.1	24	103.9	104.3	104.8	24	104.9	105.3	105.5	24
4/5	95.5	95.7	95.9	24	---	---	---	0	103.3	103.5	103.8	24	102.0	102.2	102.4	24	103.8	104.0	104.0	24
4/6	95.9	96.5	96.9	24	---	---	---	0	104.0	104.3	104.5	24	102.6	103.1	103.6	24	103.2	103.5	103.8	24
4/7	95.8	96.1	96.5	23	---	---	---	0	105.3	105.7	106.3	23	103.7	104.5	105.0	23	103.6	104.1	104.6	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
3/25	103.2	103.5	103.7	24	102.4	102.9	103.2	24	102.7	103.3	103.8	24	102.9	103.0	103.1	24	103.4	103.6	103.8	24
3/26	103.2	103.6	104.1	24	103.0	103.6	103.9	24	103.4	104.1	104.5	24	103.2	103.6	103.9	24	103.8	104.2	104.5	24
3/27	105.1	105.8	106.6	24	103.6	103.9	104.2	24	103.9	104.3	104.6	24	104.1	104.2	104.3	24	104.5	104.6	104.7	24
3/28	103.0	103.5	104.5	24	102.8	103.1	103.4	23	103.2	103.4	103.6	23	103.7	103.8	103.9	24	104.2	104.3	104.4	24
3/29	103.2	103.8	104.5	24	102.6	102.9	103.2	24	103.0	103.5	103.9	24	103.4	103.7	103.9	24	104.0	104.2	104.5	24
3/30	103.5	104.0	104.6	24	103.0	103.6	104.1	24	103.3	104.1	104.7	24	103.6	103.8	104.0	24	104.1	104.3	104.5	24
3/31	104.2	105.0	106.2	24	103.8	104.5	105.0	24	104.1	104.9	105.7	24	103.7	103.9	104.0	24	104.1	104.3	104.4	24
4/1	104.1	104.6	105.2	24	103.9	104.4	104.7	24	104.2	104.8	105.3	24	104.0	104.5	104.7	24	104.5	105.0	105.3	24
4/2	105.5	106.4	107.3	24	104.6	105.3	105.8	24	104.9	105.7	106.2	24	105.2	105.6	106.2	24	105.3	105.5	105.7	24
4/3	105.1	105.4	105.7	24	104.9	105.5	105.7	24	105.1	105.7	105.8	24	105.5	105.8	106.0	24	105.6	106.2	106.4	24
4/4	105.0	105.8	107.0	24	104.8	105.3	105.4	24	105.4	105.7	107.1	24	105.2	105.5	105.8	24	105.7	106.0	106.9	24
4/5	103.7	104.1	104.8	24	103.2	103.4	103.6	24	104.3	104.9	107.2	24	103.7	103.8	104.3	24	104.9	105.9	111.2	24
4/6	103.0	103.3	103.6	24	103.7	104.1	104.4	24	104.2	104.8	106.1	24	104.2	104.8	105.0	24	104.8	105.3	106.2	24
4/7	103.9	104.3	104.8	23	104.1	104.7	105.1	23	104.4	105.1	105.5	23	105.0	105.6	105.9	23	105.3	105.9	106.2	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
3/25	102.4	102.7	102.9	24	102.6	102.8	103.1	24	102.2	102.4	102.9	24	102.5	102.7	103.2	24	102.2	102.5	102.8	24
3/26	102.9	103.4	103.8	24	103.1	103.5	104.0	24	102.9	103.4	103.7	24	103.0	103.6	103.9	24	102.7	103.1	103.5	24
3/27	103.4	103.6	103.8	24	103.7	103.8	104.0	24	103.7	103.9	104.0	24	103.8	104.0	104.2	24	103.3	103.5	103.6	24
3/28	103.0	103.2	103.5	24	103.1	103.3	103.5	24	102.7	102.9	103.3	24	103.0	103.2	103.6	24	102.7	102.8	102.9	24
3/29	103.1	103.5	103.8	24	103.4	103.7	103.9	23	103.2	103.6	104.0	24	103.3	103.7	104.2	24	102.7	102.9	103.2	24
3/30	103.3	103.8	104.2	24	103.4	103.8	104.1	24	103.0	103.3	103.5	24	103.2	103.4	103.6	24	103.4	104.0	104.6	24
3/31	103.5	103.9	104.0	24	103.6	104.0	104.1	24	103.8	104.1	104.2	24	103.9	104.2	104.3	24	104.6	105.3	106.7	24
4/1	103.7	104.1	104.5	24	103.9	104.2	104.7	24	104.2	104.5	104.7	24	104.3	104.6	104.8	24	104.8	105.3	106.0	24
4/2	104.4	104.9	105.1	24	104.5	104.9	105.1	24	105.1	105.4	105.6	24	105.2	105.5	105.8	24	105.5	106.1	107.8	24
4/3	105.1	105.3	105.6	24	105.1	105.4	105.8	24	105.2	105.6	105.8	24	105.3	105.7	105.9	24	105.7	106.6	107.4	24
4/4	104.5	104.8	105.6	24	104.6	105.0	105.8	24	104.9	105.2	105.5	24	104.9	105.2	105.7	24	105.0	105.5	106.7	24
4/5	103.0	103.6	105.1	24	103.4	103.7	104.4	21	103.5	103.7	104.1	24	103.7	104.1	106.6	24	103.4	103.7	103.9	24
4/6	103.6	104.2	104.8	24	103.6	104.3	104.8	24	104.0	104.8	105.3	24	103.7	104.2	104.4	24	104.0	104.5	105.4	24
4/7	104.6	105.2	105.8	23	104.5	105.0	105.6	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

Date	Priest R. Dnst			Pasco			Dworshak			Clrwr-Peck			Anatone			#				
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
3/25	101.7	102.0	102.3	24	---	---	---	0	94.4	94.6	94.8	24	99.0	99.2	99.7	24	101.4	101.7	102.1	24
3/26	102.4	103.1	103.4	24	---	---	---	0	94.7	95.0	95.3	24	99.5	100.1	100.7	24	101.9	102.7	103.5	24
3/27	103.1	103.4	103.8	24	---	---	---	0	94.8	95.0	95.3	24	98.8	99.1	99.3	24	101.7	102.1	102.6	24
3/28	102.1	102.3	102.6	24	---	---	---	0	95.9	96.3	97.0	24	99.6	100.2	101.0	24	101.4	102.0	102.4	24
3/29	103.2	104.3	106.1	24	---	---	---	0	96.3	97.0	97.7	24	100.6	101.4	102.2	24	102.0	102.6	103.3	24
3/30	102.9	103.3	103.7	24	---	---	---	0	96.2	97.0	97.9	24	100.4	101.5	102.5	24	102.0	102.8	103.7	24
3/31	103.5	103.9	106.4	24	---	---	---	0	98.3	101.2	103.7	24	100.5	101.5	102.2	24	102.1	102.8	103.5	24
4/1	103.6	103.8	104.0	24	---	---	---	0	104.4	105.5	106.2	24	102.4	103.4	104.1	24	102.2	103.1	104.0	24
4/2	104.4	104.7	104.9	24	---	---	---	0	106.1	106.3	106.7	24	103.3	104.0	104.6	24	102.5	103.4	104.4	24
4/3	104.7	105.1	105.3	24	---	---	---	0	105.9	106.1	106.4	24	103.1	103.7	104.3	24	102.4	103.2	104.1	24
4/4	104.5	104.8	105.3	24	---	---	---	0	105.5	105.7	106.0	24	102.0	102.3	102.9	24	101.5	101.8	102.1	24
4/5	104.0	104.6	107.3	24	---	---	---	0	105.8	106.5	108.1	24	102.2	103.0	103.4	24	101.5	102.4	103.0	23
4/6	105.4	107.4	110.2	24	---	---	---	0	107.9	108.1	108.2	24	103.7	104.4	104.9	23	102.6	103.6	104.4	24
4/7	---	---	---	0	---	---	---	0	107.9	108.3	108.4	23	104.0	104.8	105.4	23	103.0	104.0	104.8	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwr-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	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
3/25	100.4	100.6	100.8	24	100.7	100.8	101.0	24	100.1	100.2	100.4	24	101.1	101.2	101.5	24	100.5	100.6	100.7	24
3/26	100.5	101.2	101.5	24	101.5	102.0	102.5	24	100.8	101.3	101.6	24	101.3	101.6	101.9	24	100.9	101.4	101.7	24
3/27	100.9	101.0	101.2	24	101.9	102.1	102.4	24	101.2	101.4	101.6	24	101.9	102.0	102.1	24	101.4	101.7	101.9	24
3/28	100.3	100.4	100.7	24	101.0	101.1	101.2	24	100.4	100.6	100.9	24	100.9	101.1	101.4	24	100.3	100.4	100.6	24
3/29	101.1	101.9	102.4	24	101.5	101.9	102.1	24	101.0	101.4	101.7	24	100.6	100.9	101.1	24	100.2	100.5	100.6	24
3/30	101.5	102.3	102.9	24	101.3	101.4	101.8	24	100.9	101.0	101.4	24	100.7	101.0	101.5	24	100.2	100.3	100.5	24
3/31	101.8	102.3	102.8	24	101.1	101.2	101.4	24	100.5	100.6	100.8	24	100.7	101.2	101.9	24	100.1	100.4	100.6	24
4/1	101.5	102.3	102.7	24	101.7	102.1	102.6	24	101.1	101.5	101.8	24	100.0	100.2	100.3	24	100.3	100.7	100.9	24
4/2	102.5	103.3	103.8	24	102.5	102.7	102.9	24	101.8	102.2	102.3	24	101.9	103.5	104.2	24	101.1	101.4	101.6	24
4/3	102.6	103.3	103.6	24	102.7	102.9	103.3	24	109.6	110.0	110.6	24	102.7	103.3	104.0	24	107.4	108.6	108.9	24
4/4	101.9	102.3	102.6	24	102.7	102.9	103.5	24	109.0	109.3	110.1	24	101.9	102.2	102.7	24	107.9	108.2	108.7	24
4/5	100.9	101.3	101.7	24	101.6	101.7	102.1	24	109.2	109.7	111.5	24	100.8	101.1	101.3	24	108.0	108.5	108.8	24
4/6	102.8	104.3	105.4	24	101.7	101.8	102.2	24	109.3	109.6	109.9	24	102.3	103.3	103.9	24	108.5	108.8	109.0	24
4/7	103.5	104.9	106.2	23	102.1	102.5	103.0	23	109.5	109.9	110.7	23	106.0	107.1	107.5	23	109.7	110.2	110.6	23

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

Date	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	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High		hr			
3/25	100.8	101.1	101.5	24	100.6	100.9	101.2	24	100.4	100.5	100.5	24	100.4	100.5	100.7	24	---	---	---	0
3/26	101.4	101.8	102.0	24	101.1	101.6	101.8	24	100.7	101.0	101.4	24	100.7	101.2	101.3	24	---	---	---	0
3/27	102.1	102.1	102.2	24	101.8	101.9	102.1	24	101.5	101.6	101.7	24	101.4	101.5	101.7	24	---	---	---	0
3/28	101.8	101.8	102.0	24	101.3	101.4	101.6	24	101.2	101.2	101.3	24	101.1	101.3	101.8	24	---	---	---	0
3/29	101.9	102.0	102.2	24	101.5	101.8	102.0	24	101.5	101.7	101.8	24	101.5	101.8	102.1	24	---	---	---	0
3/30	101.6	101.7	101.9	24	101.2	101.4	101.8	24	101.5	101.7	101.8	24	101.6	101.8	102.1	24	---	---	---	0
3/31	101.2	101.3	101.4	24	101.1	101.2	101.5	24	101.8	102.0	102.1	24	101.9	102.2	102.5	24	---	---	---	0
4/1	101.0	101.0	101.1	24	101.0	101.2	101.4	24	102.0	102.2	102.3	24	102.0	102.4	102.7	24	---	---	---	0
4/2	101.5	101.8	102.0	24	101.5	101.8	101.9	24	102.5	102.8	102.9	24	102.6	102.9	103.5	24	---	---	---	0
4/3	101.9	102.2	102.4	24	115.5	116.1	116.7	24	102.7	102.8	103.0	24	114.5	115.3	115.6	24	---	---	---	0
4/4	102.0	102.1	102.5	24	115.8	116.3	117.0	24	102.3	102.5	102.9	24	114.6	115.1	115.6	24	---	---	---	0
4/5	102.2	102.9	103.7	24	116.9	117.2	117.6	24	104.4	105.7	106.8	24	114.8	115.1	115.4	24	---	---	---	0
4/6	105.3	106.1	106.5	24	117.7	118.2	118.3	24	108.0	108.8	109.7	24	115.1	115.4	115.7	24	---	---	---	0
4/7	107.9	108.8	109.9	23	118.4	118.8	119.8	23	112.0	113.7	114.5	23	115.5	115.7	115.9	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
3/25	102.1	102.4	102.8	24	102.1	102.4	102.7	24	102.3	102.5	102.5	24	102.1	102.2	102.4	24	101.9	102.1	102.4	24
3/26	102.9	103.3	103.7	24	102.9	103.4	103.6	24	102.9	103.5	103.9	24	102.7	103.4	103.8	24	102.5	103.0	103.2	24
3/27	103.4	103.7	104.0	24	103.3	103.5	103.7	24	103.2	103.5	103.9	24	102.8	103.1	103.6	24	102.6	103.0	103.3	24
3/28	102.6	102.7	102.9	24	102.8	103.1	103.4	24	102.4	102.5	102.6	24	102.1	102.2	102.2	24	101.9	102.0	102.1	24
3/29	102.7	103.1	103.3	24	102.8	103.1	103.3	24	102.6	103.0	103.3	24	102.4	102.8	103.0	24	102.2	102.5	102.8	24
3/30	103.0	103.7	104.5	24	102.8	103.2	103.5	24	102.8	103.0	103.3	24	102.6	102.9	103.2	24	102.4	102.5	102.6	24
3/31	103.6	104.0	104.5	24	105.3	106.9	108.0	24	103.3	103.6	104.0	24	102.9	103.2	103.4	24	102.6	102.8	103.0	24
4/1	104.4	104.8	105.4	24	109.2	112.3	112.4	24	103.5	103.8	104.2	24	103.0	103.3	103.4	24	102.7	103.0	103.2	24
4/2	105.2	105.4	105.8	24	107.3	108.3	109.5	24	103.6	103.8	104.0	24	103.2	103.4	103.6	24	103.1	103.2	103.3	24
4/3	105.7	105.9	106.3	24	105.4	105.9	106.1	24	103.9	104.4	104.5	24	103.7	104.1	104.4	24	103.4	103.7	104.0	24
4/4	104.7	105.1	106.0	24	104.4	104.8	105.7	24	103.1	103.5	104.2	24	102.8	103.1	103.8	24	102.7	103.1	103.3	24
4/5	103.6	104.2	105.8	24	109.4	113.6	113.9	24	102.2	102.5	102.7	24	106.1	110.4	116.0	24	101.8	101.9	102.1	24
4/6	105.1	105.4	105.8	24	112.2	112.9	113.3	24	103.3	103.9	104.5	24	103.6	104.2	104.7	24	103.8	104.8	106.0	24
4/7	107.1	108.1	109.0	23	113.7	114.8	115.3	23	105.2	105.7	106.2	23	110.3	115.1	117.1	23	104.4	105.0	105.4	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	
3/25	101.0	101.2	101.5	24	101.7	102.0	102.4	24	102.9	103.3	103.8	24	102.9	103.6	104.4	24	106.5	107.1	107.4	24
3/26	101.7	102.1	102.3	24	102.9	103.3	103.6	24	103.5	103.9	104.1	24	103.4	104.1	104.6	24	107.2	108.1	108.6	24
3/27	101.9	102.1	102.3	24	102.8	103.1	103.4	24	103.5	103.7	104.1	24	103.4	103.7	103.9	24	106.9	107.3	107.5	24
3/28	101.2	101.3	101.3	24	102.3	102.5	102.6	24	103.1	103.4	103.7	24	103.1	103.6	104.0	24	106.7	107.2	107.6	24
3/29	101.5	101.8	102.1	24	102.9	103.3	103.7	24	103.7	104.2	104.7	24	103.8	105.1	106.0	24	107.1	108.0	108.6	24
3/30	101.8	102.1	102.3	24	103.2	103.6	103.9	24	104.1	104.6	105.0	24	104.4	105.5	106.4	24	107.5	108.1	108.7	24
3/31	102.1	102.5	103.0	24	103.5	103.9	104.2	24	104.5	104.8	105.2	24	104.8	106.0	107.1	24	107.7	108.2	108.5	24
4/1	102.1	102.3	102.5	24	103.7	104.1	104.5	24	104.5	104.8	105.1	24	105.1	106.2	107.2	24	107.7	108.4	108.8	24
4/2	102.5	102.6	102.8	24	104.0	104.3	104.5	24	104.8	105.3	105.6	24	105.1	106.2	107.1	24	107.7	108.3	108.7	24
4/3	102.8	103.1	103.3	24	104.2	104.6	104.9	24	105.9	106.3	106.8	24	106.0	107.4	108.4	24	106.3	106.6	106.9	24
4/4	102.0	102.4	102.5	24	103.0	103.5	104.1	24	104.6	105.3	106.0	24	104.4	104.9	105.4	24	105.4	105.6	105.9	24
4/5	101.8	102.5	103.5	24	102.1	102.4	102.8	24	103.5	103.7	103.9	24	103.6	104.5	105.3	24	106.1	107.7	109.8	24
4/6	103.4	104.8	106.1	24	103.4	104.1	104.5	24	104.6	105.3	105.6	24	104.3	105.6	106.4	24	106.9	107.9	108.6	24
4/7	104.6	105.8	106.5	23	105.2	105.7	107.0	23	106.2	106.7	107.0	23	104.8	105.7	106.2	23	109.0	110.0	110.6	23

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Lower Granite Dam											
	04/07/16	Chinook + Steelhead	101	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
Lower Monumental Dam											
	04/07/16	Chinook + Steelhead	78*	0	0			0	0	0	0
McNary Dam											
Bonneville Dam											
Rock Island Dam											

* Sample size criteria not met, therefore no % fish with GBT estimated for this sample day.

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 4/8/2016 6:58

Two-Week Summary of Passage Indices

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

See Sampling Comments: <http://www.fpc.org/currentDaily/smpcomments.htm>

For clip information see: <http://www.fpc.org/CurrentDaily/catch.htm>

For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmptsubmitdata.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)	
03/25/2016	*	539	114	227	3	---	---	---	---	---	256	
03/26/2016	*	---	128	678	11	5,100	---	---	---	---	449	
03/27/2016	*	---	65	196	1	7,550	---	---	---	---	375	
03/28/2016		459	75	83	5	15,500	---	---	---	---	348	
03/29/2016	*	216	91	375	3	19,350	---	---	---	---	356	
03/30/2016		230	71	220	5	11,956	---	---	---	---	317	
03/31/2016		1,511	---	54	2	10,650	---	---	---	---	268	
04/01/2016	*	1,780	---	53	7	9,700	---	---	---	---	395	
04/02/2016	*	---	---	68	---	12,700	---	870	3	---	1,420	844
04/03/2016	*	---	---	667	---	10,977	---	---	8	---	---	673
04/04/2016	*	3,868	---	324	---	12,866	---	---	12	---	1,985	799
04/05/2016	*	2,087	---	278	27	13,579	---	438	21	---	---	1,161
04/06/2016	*	1,070	---	242	21	9,199	---	---	15	---	3,999	2,276
04/07/2016	*	977	---	79	57	16,647	---	---	---	498	---	2,646
04/08/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		12,737	544	3,544	142	155,774	0	1,308	59	498	7,404	11,163
# Days:		10	6	14	11	13	0	2	5	1	3	14
Average:		1,274	91	253	13	11,983	0	654	12	498	2,468	797
YTD		24,039	1,680	4,193	240	155,774	0	1,308	59	498	7,404	17,312

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)	
03/25/2016	*	0	0	0	4	---	---	---	---	---	341	
03/26/2016	*	---	0	0	0	440	---	---	---	---	432	
03/27/2016	*	---	0	0	0	1,050	---	---	---	---	419	
03/28/2016		0	0	0	3	0	---	---	---	---	373	
03/29/2016	*	0	0	0	6	900	---	---	---	---	468	
03/30/2016		0	0	0	8	50	---	---	---	---	541	
03/31/2016		0	---	0	1	100	---	---	---	---	503	
04/01/2016	*	0	---	0	5	0	---	---	---	---	438	
04/02/2016	*	---	---	1	---	50	---	0	232	---	0	631
04/03/2016	*	---	---	1	---	221	---	---	302	---	---	640
04/04/2016	*	0	---	2	---	735	---	---	537	---	5	580
04/05/2016	*	0	---	2	0	715	---	0	600	---	---	401
04/06/2016	*	0	---	1	2	144	---	---	781	---	10	884
04/07/2016	*	0	---	1	10	857	---	---	---	487	---	657
04/08/2016		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	8	39	5,262	0	0	2,452	487	15	7,308
# Days:		10	6	14	11	13	0	2	5	1	3	14
Average:		0	0	1	4	405	0	0	490	487	5	522
YTD		0	3	20	83	5,262	0	0	2,452	487	15	31,154

Two-Week Summary of Passage Indices

COMBINED COHO											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/25/2016 *	0	0	0	0	---	---	---	---	---	---	9
03/26/2016 *	---	0	0	0	20	---	---	---	---	---	17
03/27/2016 *	---	0	0	0	50	---	---	---	---	---	0
03/28/2016 *	0	0	0	0	0	---	---	---	---	---	42
03/29/2016 *	0	0	0	0	0	---	---	---	---	---	17
03/30/2016 *	0	0	0	0	0	---	---	---	---	---	17
03/31/2016 *	0	---	0	0	150	---	---	---	---	---	42
04/01/2016 *	0	---	0	0	50	---	---	---	---	---	154
04/02/2016 *	---	---	0	---	0	---	10	0	---	0	588
04/03/2016 *	---	---	0	---	55	---	---	1	---	---	754
04/04/2016 *	0	---	0	---	0	---	---	1	---	0	729
04/05/2016 *	0	---	0	0	0	---	17	1	---	---	1,964
04/06/2016 *	0	---	0	0	72	---	---	3	---	5	5,575
04/07/2016 *	0	---	0	1	0	---	---	---	66	---	5,629
04/08/2016 *	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	1	397	0	27	6	66	5	15,537
# Days:	10	6	14	11	13	0	2	5	1	3	14
Average:	0	0	0	0	31	0	14	1	66	2	1,110
YTD	0	0	0	2	397	0	27	6	66	5	15,775

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/25/2016 *	0	16	0	3	---	---	---	---	---	---	43
03/26/2016 *	---	13	0	13	460	---	---	---	---	---	78
03/27/2016 *	---	8	0	1	650	---	---	---	---	---	61
03/28/2016 *	0	11	0	18	500	---	---	---	---	---	51
03/29/2016 *	0	8	0	10	1,850	---	---	---	---	---	113
03/30/2016 *	0	9	0	5	1,851	---	---	---	---	---	26
03/31/2016 *	0	---	0	9	950	---	---	---	---	---	34
04/01/2016 *	1	---	0	53	1,100	---	---	---	---	---	112
04/02/2016 *	---	---	0	---	2,150	---	750	1	---	340	119
04/03/2016 *	---	---	0	---	3,751	---	---	1	---	---	105
04/04/2016 *	3	---	0	---	6,102	---	---	4	---	185	141
04/05/2016 *	36	---	0	56	12,936	---	303	6	---	---	401
04/06/2016 *	65	---	1	26	17,607	---	---	9	---	404	516
04/07/2016 *	20	---	3	91	10,074	---	---	---	1,216	---	444
04/08/2016 *	---	---	---	---	---	---	---	---	---	---	---
Total:	125	65	4	285	59,981	0	1,053	21	1,216	929	2,244
# Days:	10	6	14	11	13	0	2	5	1	3	14
Average:	13	11	0	26	4,614	0	527	4	1,216	310	160
YTD	134	379	8	293	59,981	0	1,053	21	1,216	929	2,543

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/25/2016 *	0	0	0	0	---	---	---	---	---	---	0
03/26/2016 *	---	0	0	0	0	---	---	---	---	---	17
03/27/2016 *	---	0	0	0	0	---	---	---	---	---	44
03/28/2016 *	0	0	0	0	0	---	---	---	---	---	8
03/29/2016 *	0	0	0	0	0	---	---	---	---	---	17
03/30/2016	0	0	0	0	0	---	---	---	---	---	34
03/31/2016	0	---	0	0	0	---	---	---	---	---	8
04/01/2016 *	0	---	0	0	0	---	---	---	---	---	9
04/02/2016 *	---	---	0	---	0	---	0	6	---	0	9
04/03/2016 *	---	---	0	---	0	---	---	12	---	---	16
04/04/2016 *	0	---	0	---	74	---	---	80	---	0	8
04/05/2016 *	0	---	0	0	0	---	0	200	---	---	0
04/06/2016 *	0	---	0	0	0	---	---	188	---	5	18
04/07/2016 *	0	---	0	0	0	---	---	---	0	---	36
04/08/2016	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	74	0	0	486	0	5	224
# Days:	10	6	14	11	13	0	2	5	1	3	14
Average:	0	0	0	0	6	0	0	97	0	2	16
YTD	0	0	0	0	74	0	0	486	0	5	303

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
03/25/2016 *	0	0	0	0	---	---	---	---	---	---	130
03/26/2016 *	---	0	0	0	10	---	---	---	---	---	150
03/27/2016 *	---	0	0	0	0	---	---	---	---	---	105
03/28/2016 *	0	0	0	0	0	---	---	---	---	---	85
03/29/2016 *	0	1	0	0	0	---	---	---	---	---	100
03/30/2016	0	0	0	0	0	---	---	---	---	---	95
03/31/2016	0	---	0	0	0	---	---	---	---	---	60
04/01/2016 *	0	---	0	0	0	---	---	---	---	---	55
04/02/2016 *	---	---	0	---	0	---	20	1	---	528	95
04/03/2016 *	---	---	0	---	0	---	---	1	---	---	40
04/04/2016 *	0	---	0	---	0	---	---	1	---	430	40
04/05/2016 *	0	---	0	0	0	---	0	1	---	---	85
04/06/2016 *	0	---	0	0	0	---	---	10	---	430	178
04/07/2016 *	0	---	0	0	0	---	---	---	20	---	80
04/08/2016	---	---	---	---	---	---	---	---	---	---	---
Total:	0	1	0	0	10	0	20	14	20	1,388	1,298
# Days:	10	6	14	11	13	0	2	5	1	3	14
Average:	0	0	0	0	1	0	10	3	20	463	93
YTD	0	2	1	0	10	0	20	14	20	1,388	4,348

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 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:

4/8/16 6:59 AM

03/25/16 TO 04/08/16

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	4,490	138,750	370	45,410	50	189,070
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	4,490	138,737	370	45,410	50	189,057
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	12	0	0	0	12
	Sum of FacilityMorts	0	1	0	0	0	1
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	13	0	0	0	13
LMN	Sum of NumberCollected		1,130	20	930		2,080
	Sum of NumberBarged		0	0	0		0
	Sum of NumberBypassed		1,130	20	929		2,079
	Sum of Numbertrucked		0	0	0		0
	Sum of SampleMorts		0	0	1		1
	Sum of FacilityMorts		0	0	0		0
	Sum of ResearchMorts		0	0	0		0
	Sum of TotalProjectMorts		0	0	1		1
Total Sum of NumberCollected		4,490	139,880	390	46,340	50	191,150
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		4,490	139,867	390	46,339	50	191,136
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		0	12	0	1	0	13
Total Sum of FacilityMorts		0	1	0	0	0	1
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		0	13	0	1	0	14

YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/8/16 6:59 AM

TO: 04/08/16

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	4,490	138,750	370	50	45,410	189,070
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	4,490	138,737	370	50	45,410	189,057
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	12	0	0	0	12
	Sum of FacilityMorts	0	1	0	0	0	1
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	13	0	0	0	13
LMN	Sum of NumberCollected		1,130	20		930	2,080
	Sum of NumberBarged		0	0		0	0
	Sum of NumberBypassed		1,130	20		929	2,079
	Sum of NumberTrucked		0	0		0	0
	Sum of SampleMorts		0	0		1	1
	Sum of FacilityMorts		0	0		0	0
	Sum of ResearchMorts		0	0		0	0
	Sum of TotalProjectMorts		0	0		1	1
Total Sum of NumberCollected		4,490	139,880	390	50	46,340	191,150
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		4,490	139,867	390	50	46,339	191,136
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		0	12	0	0	1	13
Total Sum of FacilityMorts		0	1	0	0	0	1
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		0	13	0	0	1	14

Cumulative Adult Passage at Mainstem Dams Through: 04/07

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/07	924	8	3352	7	912	0	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/07	370	2	754	14	281	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/07	143	1	485	5	151	5	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/06	29	0	104	1	35	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/07	23	7	56	1	17	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/07	23	-1	47	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/07	17	1	32	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/07	7	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	04/06	298	0	592	0	147	0	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2016		2015		10-Yr Avg.		2016	2015	10-Yr Avg.	2016	2015	10-Yr Avg.	Wild 2016	Wild 2015	10-Yr Avg.	2016	2015	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	04/07	0	0	0	0	0	0	1	1	0	3074	3419	2771	1332	1856	902	-1	0	0
TDA	04/07	0	0	0	0	0	0	0	0	0	116	73	1714	74	44	641	0	0	0
JDA	04/07	0	0	0	0	0	1	0	0	0	135	135	3471	85	107	1125	0	0	-1
MCN	04/06	0	0	0	0	1	0	0	0	0	150	164	4260	98	92	1232	1	0	0
IHR	04/07	0	0	0	0	0	0	0	0	0	429	398	3549	265	243	892	0	1	0
LMN	04/07	0	0	0	0	0	0	0	0	0	426	2324	6132	262	1057	1643	0	0	0
LGS	04/07	0	0	0	0	0	0	0	0	0	2366	533	826	1212	314	336	0	0	0
LGR	04/07	0	0	0	0	0	0	0	0	0	4459	7964	6494	2357	3517	2085	0	0	0
PRD		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	04/06	0	0	1	0	0	0	0	0	0	4879	3465	4379	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.