



Fish Passage Center

Weekly Report #15–10

May 22, 2015

Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 25% and 173% of average at individual sub-basins over May. Precipitation above The Dalles has been 93% of average over May. Over the 2015 water year, precipitation has ranged between 75% and 100% of average.

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

Location	Water Year 2015 May 1–21, 2015		Water Year 2015 October 1, 2014 to May 21, 2015	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.83	37	27.1	98
Snake River above Ice Harbor	2.15	138	14.3	82
Columbia above The Dalles	1.56	93	18.5	88
Kootenai	0.58	25	27.6	100
Clark Fork	1.09	52	15.8	78
Flathead	0.59	24	24.6	92
Pend Oreille River Basin above Waneta Dam	0.79	35	21.0	86
Salmon River Basin	1.97	99	17.9	82
Upper Snake Tributaries	3.43	173	15.5	75
Clearwater	1.63	61	27.8	86
Willamette River above Portland	1.92	72	47.9	84

Snowpack within the Columbia Basin has been well below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 33% of average. For Snake River Basins the average snowpack is 21% of average. For lower Columbia Basins between McNary and Bonneville Dam average snowpack is 1% of average.

Table 2 displays the May 21st ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 21st ESP forecast at The Dalles between April and August is 61,976 Kaf (71% of average).

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

Location	May 21, 2015 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	71	61,976
Grand Coulee (Apr–Aug)	77	43,733
Libby Res. Inflow, MT (Apr–Aug)	78 92*	4,612 5,396*
Hungry Horse Res. Inflow, MT (Apr–Aug)	79	1,537
Lower Granite Res. Inflow (Apr–July)	56	11,106
Brownlee Res. Inflow (Apr–July)	46	2,503
Dworshak Res. Inflow (Apr–July)	51 54*	1,242 1,325*

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,248.5 feet (5-21-15) and has held steady over the last week. Outflows at Grand Coulee have ranged between 83.8 and 116.0 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,423.2 feet (5-21-15) and has refilled 0.6 feet over the previous week. Daily average outflows at Libby Dam have been 15.2–17.3 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,539.7 feet (5-21-15) and held steady over the last week. Outflows at Hungry Horse have been reduced from 7.5 Kcfs to 6.3 Kcfs over the last week.

Dworshak is currently at an elevation of 1,592.1 feet (5-21-15) and refilled 2.7 feet over the last week. Outflows have been decreased from 7.4 Kcfs to 1.5 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2,067.4 feet on May 21, 2015, and has refilled 7.5 feet over the last week. Outflow from Hells Canyon have ranged between 6.6 and 9.3 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2015), the flow objective this spring will be 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 64.5 Kcfs over the last week and 53.5 Kcfs between April 3 and May 21, 2015.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives (which began April 10th) will be 220 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Over the last week, flows at McNary Dam averaged 197.2 Kcfs and Priest Rapids Dam flows were 124.2 Kcfs. Between April 10 and May 21, 2015, flows at McNary Dam averaged 171.8 Kcfs and Priest Rapids Dam flows were 111.3 Kcfs. At the May 20, 2015, TMT meeting, an average flow target of 210 Kcfs at McNary Dam was agreed upon through the end of May.

Spill

The 2015 fish spill program was implemented at the lower Snake River projects beginning on April 3rd, and beginning April 10th at the middle Columbia River projects.

All of the lower Snake River projects have spilled at the 2015 Fish Operations Plan (FOP) levels over the past week. The gas cap at Lower Monumental Dam decreased again over the past week in response to the total dissolved gas (TDG) levels measured at the Ice Harbor forebay. On April 28th the “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, were initiated at Ice Harbor Dam. The net effect of this operation is a decrease in spill levels during the “test-like” period.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3-27: 45 Kcfs/Gas Cap April 28–June 20: 30%/30% vs. 45 kcfs/Gas Cap

Since spill began on April 10th, spill for fish passage at the middle Columbia River projects occurred at the following amounts described in the 2015 FOP (the testing of two spill levels at John Day Dam began on April 28th).

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

TDG measurements exceeded the waiver limits (115%) at the Ice Harbor Dam forebay monitor May 19 through May 22, 2015. At Ice Harbor Dam, the forebay gage often reads higher than the upstream tailrace gage and higher than the downstream gage at the project, and it is unlikely that these occurrences are related to spill. The forebay monitor reading at Ice Harbor is more likely a function of water temperature than the TDG level at the upstream project. However, spill at Lower Monumental was 26–27 Kcfs early last week and decreased to 24 Kcfs later in the week. **Note:** The State of Oregon and the State of Washington 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, McNary, Bonneville and Rock Island dams over the past week. Over the past week one percent of the sample was observed with minor signs of GBT at McNary Dam on May 20th. These levels are far below the 15% criteria for action to be taken.

Smolt Monitoring

All Smolt Monitoring Program bypass facilities continued sampling for 2015 this week. Sampling at the Snake River Trap at Lewiston, Idaho was terminated after the May 19th sample. All other SMP traps continued sampling this week, although sampling at GRN has been suspended since May 18th.

This week's samples at Bonneville Dam (BON) were dominated by yearling Chinook juveniles, with a daily average passage index of nearly 50,000 per day. This is very similar to last week's daily average passage index, which was just over 50,000 per day. Steelhead passage decreased this week, when compared to the previous week. This week's daily average passage index was nearly 26,000, whereas that for last week was nearly 66,000 per day. Coho and sockeye passage also increased this week, when compared to last week. This week's daily average passage indices were nearly 17,000 and 7,300 per day, respectively. Last week's daily average passage indices were nearly 10,000 for coho and only 1,500 for sockeye. Subyearling Chinook passage increased this week. This week's daily average passage index for subyearling Chinook at BON was about 4,500 per day. Finally, lamprey ammocoetes and macrophthalmia were encountered in this week's samples. Pacific lamprey ammocoetes were encountered in the sample from May 15th, unknown lamprey ammocoetes were encountered in the sample from May 18th, and Pacific lamprey macrophthalmia were encountered in the sample from May 16th.

Yearling Chinook continued to dominate this week's salmonid collections at John Day Dam (JDA). Data from JDA are available only through the May 20th sample. The daily average passage index for yearling Chinook this week was about 24,000 fish per day, which is an increase over last week's daily average passage index of about 18,000. Steelhead passage increased this

week, when compared to the previous week. This week's daily average passage index for steelhead was just over 8,000 per day, whereas that for last week was about 5,750 per day. Subyearling Chinook, coho, and sockeye passage also increased this week. This week's daily average passage indices for these three species were about 730, 2,300 and 5,900 per day, respectively. Last week's passage indices were about 50 for subyearling Chinook, 880 for coho, and 2,300 for sockeye. Finally, Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of about 190 fish per day. This is an increase over last week's daily average collection of about 110 macrophthalmia per day.

Since McNary Dam (MCN) is no longer a transportation site, sampling takes place every other day for the entire SMP season. This week's samples at MCN were dominated by yearling Chinook, with a daily average passage index of nearly 50,000 fish per day. However, this is a large decrease from last week's daily average passage index of about 110,000 per day. Steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage index for steelhead was about 23,000 per day. Last week's daily average passage index was nearly 30,000 per day. Passage of subyearling Chinook, coho, and sockeye all increased this week. This week's daily average passage indices were about 680, 4,250, and 9,300 per day, respectively. Last week's daily average passage indices were about 450 for subyearling Chinook, 3,100 for coho, and 3,200 for sockeye. Finally, Pacific lamprey macrophthalmia were encountered in two of this week's four samples. The daily average collection for lamprey macrophthalmia this week was about 200.

This week's samples at Lower Granite Dam (LGR) were dominated by steelhead juveniles. However, this week's daily average passage index of about 11,500 was much lower than the daily average passage index from last week, which was nearly 29,000 per day. Yearling Chinook passage also decreased this week, when compared to the previous week. This week's daily average passage index for yearling Chinook was about 8,400, whereas that for last week was just over 42,000 per day. The decreases in yearling Chinook and steelhead passage this week occurred even with increased flows in the Lower Snake River and

increased outflows from Dworshak Dam (DWR) over the weekend. At about 0100 on May 16th, outflows from DWR were gradually increased from 1.5 Kcfs to a maximum of 7.5 Kcfs on May 17th and then gradually reduced to 1.5 Kcfs by May 19th. It does not appear that yearling Chinook or steelhead passage changed as a result of these modified operations. However, it is worth noting that steelhead passage at LGR has increased in the last two days, with the passage index from May 21st at nearly 25,000 fish. The last time a passage index of this magnitude was observed for steelhead at LGR was May 13th. Based on the cumulative passage indices for yearling Chinook

(Figure 1) and steelhead (Figure 2) at LGR, the 2015 outmigration appears to be much lower than the historic average (2005–2014).

Passage of subyearling Chinook and sockeye at LGR increased this week. This week's daily average passage indices were about 1,800 and 1,600 per day, respectively. Last week's daily average passage indices were about 500 for subyearling Chinook and 450 for sockeye. The increases in subyearling Chinook and sockeye passage this week is largely due to hatchery releases above LGR in recent weeks. For example, approximately 94% of the sockeye encountered in

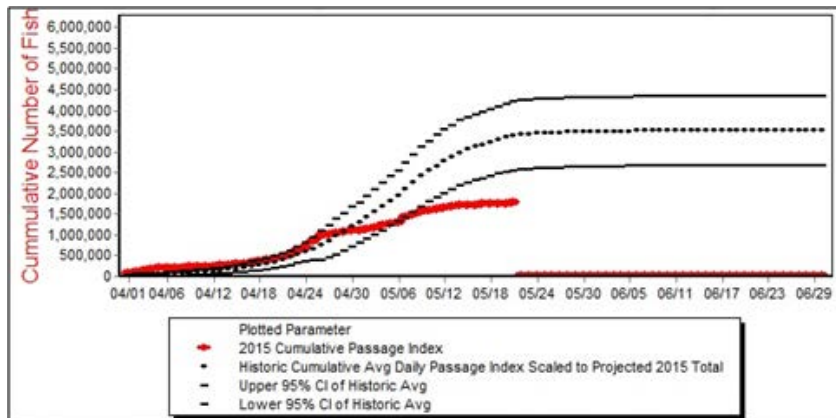


Figure 1. Cumulative passage index for yearling Chinook at Lower Granite Dam in 2015 (red dots) versus the 10-year average (2005–2014) (black dots). The 95% confidence interval around the 10-year average is indicated by the black hash marks.

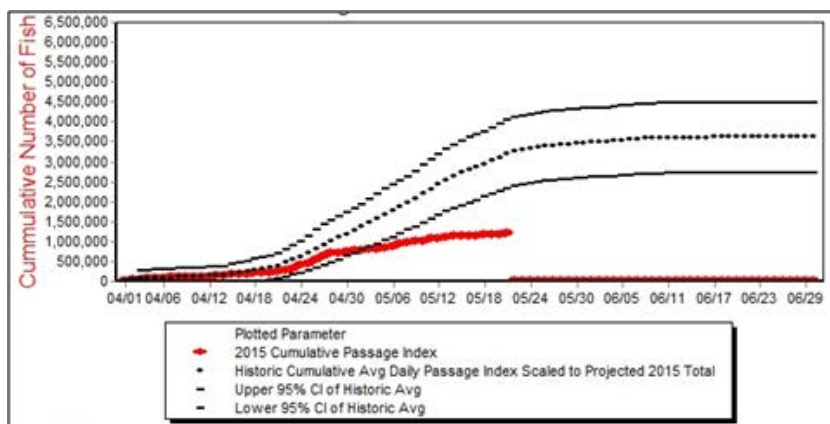


Figure 2. Cumulative passage index for steelhead at Lower Granite Dam in 2015 (red dots) versus the 10-year average (2005–2014) (black dots). The 95% confidence interval around the 10-year average is indicated by the black hash marks.

this week's samples were of known hatchery origin. A comparable estimate for subyearling Chinook is not possible, as a large proportion of hatchery subyearlings released above LGR are unmarked. Coho passage decreased this week, when compared to the previous week. This week's daily average passage index for coho was about 1,270 per day. Finally, no lamprey juveniles were encountered in this week's samples.

Sampling at Little Goose Dam (LGS) was limited to a 24-hour sample every other day from April 2nd to April 30th. Little Goose Dam began collecting fish for transportation on May 1st and, therefore, collections at LGS are every day for the rest of the season. Steelhead dominated this week's samples at LGS. This week's daily average passage index for steelhead at LGS was about 29,500 fish per day, which is a decrease over last week's daily average passage index of about 36,700 per day. Yearling Chinook passage also decreased this week. This week's daily average passage index for yearling Chinook at LGS was nearly 22,000, whereas that for last week was nearly 50,000 per day. Passage of subyearling Chinook, coho, and sockeye all increased this week. This week's daily average passage indices for these three species were about 1,200, 3,800, and 2,300 per day, respectively. Last week's daily average passage indices for these species were about 200 for subyearling Chinook, 2,100 for coho, and 330 for sockeye. As with LGR, the increases in subyearling Chinook and sockeye passage are largely due to hatchery releases of these two species above LGR in recent weeks. Finally, Pacific lamprey macrophthalmia were encountered in only one of this week's samples, with an estimated collection of 100 for that day.

Sampling at Lower Monumental Dam (LMN) was limited to a 24-hour sample every third day from April 4th to April 13th and every other day from April 15th to May 1st. At 1500 on May 1st, LMN began collecting fish for transportation and, therefore, collections at LMN are daily for the rest of the season. This week's samples at LMN were dominated by yearling Chinook and steelhead, with daily average passage indices of about 12,600 and 12,500 per day, respectively. The daily average passage indices for yearling Chinook and steelhead from this week are a decrease over last week's daily average passage indices, which were about 75,000 for yearling Chinook and nearly 27,000 for steelhead. As was observed at LGS, subyearling

Chinook, coho, and sockeye passage at LMN increased this week, when compared to the previous week. This week's daily average passage indices for these three species were 1,500, 2,200, and 1,300 per day, respectively. Last week's daily average passage indices were about 700 for subyearling Chinook, 1,700 for coho, and 100 for sockeye. The increases in subyearling Chinook and sockeye passage are largely due to hatchery releases of these two species above LGR and into the LMN pool in recent weeks. Finally, no lamprey juveniles were encountered in this week's samples.

This week's samples at Rock Island Dam (RIS) were dominated by steelhead juveniles, with a daily average passage index of 379 fish per day. This is very similar to last week's daily average passage index of 377 per day. Yearling Chinook passage decreased this week, when compared to last week. This week's passage index for yearling Chinook at RIS was nearly 200 per day, whereas that for last week was about 400 per day. Coho passage continued to increase this week. The daily average passage index for coho this week was about 430 fish per day. Last week's daily average passage index was about 250 fish per day. Sockeye passage this week was relatively low, with a daily average passage index of only about 70 fish per day. Finally, one Pacific lamprey ammocoete and two Pacific lamprey ammocoetes were encountered in this week's samples a 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. Due to the recent release of approximately 400,000 hatchery subyearling fall Chinook into the Grande Ronde River, collections at the GRN have been suspended since the May 18th sample. This suspension is an effort to avoid sampling these listed hatchery fall Chinook. Sampling will resume on May 25th and samples will be monitored closely to determine if subyearling Chinook collections are sufficiently low to warrant continued sampling. If subyearling Chinook collections are sufficiently low, sampling at GRN will likely continue through the end of the month. Subyearling Chinook dominated the collections for the period of May 15th to May 18th, with a daily average collection of about 80 fish. The daily average collections for yearling Chinook and steelhead were about 66 and 56 per day, respectively. Finally, one sockeye juvenile was sampled over this period. So far,

a total of four sockeye have been collected at GRN this year, all of which have been unclipped. At this point, it is unclear where these sockeye are originating from.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 and operated by Idaho Department of Fish and Game. Sampling at WTB in 2015 has been modified to weekdays only. Due to continued high numbers of hatchery yearling Chinook collections, trapping efforts remained modified up through last week in an effort to reduce handling of listed hatchery stocks. The reduction in sampling effort, involved fishing in an area of the river where the trap was less efficient and reducing the sample period to 12 hours per day, instead of the intended 24 hours. Collections this week were mostly 24-hours, with exception to the May 18 sample, which was a 12-hour sample. Collections this week were relatively low. This week's daily average collections were 13 for yearling Chinook, 1 for sockeye, and 18 for steelhead. Sampling at WTB will be terminated after this week.

The Snake River Trap at Lewiston (LEW) is located at river kilometer 225 and operated by Idaho Department of Fish and Game. Due to the recent release of hatchery subyearling fall Chinook above the trap, sampling at LEW was terminated after the May 19th sample. Collections over the May 15 to May 19 period were dominated by subyearling Chinook. The daily average collection for subyearling Chinook over this period was about 140 per day. The daily average collections for steelhead and yearling Chinook at LEW over this same period were about 130 and 15 fish per day, respectively. Collections of sockeye and coho were very low. Since sampling was terminated on May 19th, the trap has been allowing fish to pass through, in an effort to collect PIT-tag interrogation data. However, this PIT-tag interrogation effort will likely end this week.

The Imnaha River Trap (IMN) is located at river kilometer seven and is operated by the Nez Perce Tribe. Sampling at IMN is year-round however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through May 12th. Over the last week of available data (May 6–May 12), collections at IMN have been dominated by steelhead, with a daily average collection

of about 960 fish per day. This is an increase over the daily average collection from the previous week of data (April 29–May 5), which was about 550 per day. Over the May 6–May 12 period, approximately 71% of the steelhead collection at IMN has been of known hatchery origin. Yearling Chinook passage decreased over the May 6–May 12 period, when compared to the previous 7-day period. Over the May 6–May 12 period, the daily average collection for yearling Chinook was about 250, whereas that for the April 29–May 5 period was about 310 per day.

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. To date, the Fish Passage Center has not received complete preliminary hatchery release data from the Nez Perce Tribe for 2015 releases. Therefore, release estimates discussed for this zone are likely underestimates, as they do not include all releases conducted by the tribe. Release data from the Nez Perce Tribe will be entered into our database as soon as we receive them.

Approximately 1.7 million subyearling fall Chinook juveniles were scheduled for release into this zone this week. Of these 1.7 million, about 220,000 (13%) were scheduled for release from Lyons Ferry Hatchery, which is located between Little Goose and Lower Monumental dams. The remaining 1.5 million were scheduled to be released above Lower Granite Dam, into the Clearwater (35%), Snake (35%), and Grande Ronde (30%) rivers. Of the 1.7 million subyearling fall Chinook that were scheduled to be released to this zone this week, about 50% were unmarked.

Beginning on or around June 4th, approximately 918,000 subyearling fall Chinook juveniles are scheduled for release from the Nez Perce Tribal Hatchery on the Clearwater River. As with this week's releases a large proportion (35%) of the subyearling fall Chinook that are scheduled to be released in the next 2 weeks are expected to be unmarked.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam.

To date, the Fish Passage Center has not received complete preliminary hatchery release data from the Colville Tribe for 2015 releases. Therefore, release estimates discussed for this zone are likely underestimates, as they do not include all releases conducted by the tribe, including releases from the new Chief Joseph Hatchery. Release data from the Colville Tribe will be entered into our database as soon as we receive them.

The only new release that was scheduled for this zone this week was of 4,000 subyearling fall Chinook to the Columbia River, above McNary Dam. This release was part of the WDFW Cooperative Program.

Several volitional releases of fall Chinook, coho, and steelhead that began in previous weeks are expected to end over the next 2 weeks. In addition to these older releases, there are three new releases scheduled for this zone over the next 2 weeks. The first of these releases is of about 225 subyearling fall Chinook to Crab Creek. This release is part of the WDFW Cooperative Program. The second is a release of approximately 111,000 subyearling fall Chinook to the Yakima River. All of the subyearling fall Chinook that are scheduled to be released to this zone over the next 2 weeks are expected to be unmarked. Finally, about 484,000 subyearling summer Chinook from Wells Hatchery are scheduled for release on or around May 25th.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There were no new releases scheduled for this zone this week. Beginning on or around June 1st, approximately 4.0 million subyearling fall Chinook will be released into the Klickitat River. This is the only release that is scheduled for this zone over the next 2 weeks.

Adult Passage

Adult counts at Bonneville Dam have been updated through May 21st. Daily adult spring Chinook counts at Bonneville Dam ranged from 1,392 to 2,527 salmon per day. As of May 21st, a total of 196,580 spring Chinook have been counted at Bonneville Dam. In 2014, 169,086 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2015

adult spring Chinook count at Bonneville Dam is about 1.2 times greater than the 2014 count and 1.6 times greater than the 10-year average count of 119,454. The 2015 spring Chinook jack count of 9,719 is about 44.9% of the 2014 count of 21,661 and 48.4% of the 10-year average count of 20,060. At Willamette Falls, 34,961 adult spring Chinook have been counted so far this year. In 2014, 15,112 adult spring Chinook were counted at Willamette Falls. This year's count is about 2.3 times greater than the 2014 count and 2 times greater than the 10-year average count of 17,430. As of May 21st, a total of 169,753 adult spring Chinook have been counted at The Dalles Dam and 131,381 have been counted at McNary Dam. The Dalles Dam 2015 adult spring Chinook count is 1.4 times greater than 2014 and 2 times greater than the 10-year average count. The 2015 McNary Dam adult spring Chinook count is about 1.5 times greater than the 2014 count and 2.1 times greater than the 10-year average count.

The 2015 Bonneville Dam adult steelhead count of 4,756 has 263 fewer fish than the 2014 count of 5,019, while having 198 more fish than the 10-year average count of 4,558. The 2015 Bonneville Dam adult wild steelhead count of 2,429 is about 1.8 times greater than the 2014 count of 1,325 and 1.9 times greater than the 10-year average count of 1,236. 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 will complete their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 1 to 7 adults per day last week. This year's Lower Granite steelhead count of 9,159 is about 1.2 times greater than the 2014 count of 7,417 and has 400 more fish than the 10-year average count of 8,759. The 2015 Lower Granite Dam adult wild steelhead count of 4,324 is 1.3 times greater than the 2014 count of 3,430 and is about 1.3 times greater than the 10-year average count of 3,217. At Willamette Falls, the 2015 count for steelhead was 5,336 as of May 19th. This year's steelhead count is about 57.1% of the 2014 count of 9,344 and about 50% of the 10-year average count of 10,655.

Hatchery Releases Last Two Weeks

		Hatchery Release Summary									
From:		5/9/2015		to		05/22/15					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver		
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2015	420,000	05-11-15	05-11-15	Pittsburg Landing Acclim Pond	Snake River		
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2015	525,000	05-20-15	05-20-15	Cpt John Acclim Pond	Snake River		
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2015	525,000	05-21-15	05-21-15	Big Canyon (Clearwater River)	Clearwater River M F		
Nez Perce Tribe Total					1,470,000						
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2015	456,100	05-18-15	05-18-15	Grande Ronde River	Grande Ronde River		
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2015	1,000,000	05-11-15	05-11-15	Hells Canyon Dam	Snake River		
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2015	240,000	04-06-15	06-15-15	Deschutes River	Deschutes River		
Oregon Dept. of Fish and Wildlife Total					1,696,100						
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2015	20,000	04-15-15	05-15-15	Winthrop Hatchery	Methow River		
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2015	80,000	04-15-15	05-15-15	Winthrop Hatchery	Methow River		
U.S. Fish and Wildlife Service Total					100,000						
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2015	42,000	04-20-15	05-20-15	Nason Creek	Wenatchee River		
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	175	05-15-15	05-31-15	Wenatchee River	Wenatchee River		
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	2,575	05-15-15	05-31-15	Above McNary Dam	Mid-Columbia River		
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	4,000	05-20-15	05-20-15	Above McNary Dam	Mid-Columbia River		
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	17,000	05-15-15	05-31-15	Yakama River	Yakama River		
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2015	225	05-15-15	05-15-15	Methow River	Methow River		
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2015	225	05-15-15	05-15-15	Similkameen Acclim Pd	Okanogan River		
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2015	220,000	05-18-15	05-18-15	Lyons Ferry Hatchery	Snake River		
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2015	85,000	04-20-15	05-31-15	Dayton Acclim Pond	Touchet River		
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2015	185,000	04-05-15	05-15-15	Carlton Acclim Pond	Methow River		
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2015	320,000	04-15-15	05-15-15	Wells Hatchery	Mid-Columbia River		
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2015	160,000	05-01-15	05-31-15	Wells Hatchery	Mid-Columbia River		
Washington Dept. of Fish and Wildlife Total					1,036,200						
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	215,311	03-15-15	05-15-15	Easton Pond	Yakima River		
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	216,338	03-15-15	05-15-15	Clark Flat Acclim Pond	Yakima River		
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	217,163	03-15-15	05-15-15	Jack Creek Acclim Pond	Yakima River		
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	98,105	04-15-15	06-01-15	Stiles Pond	Yakima River		
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	143,770	04-15-15	06-01-15	Holmes Pond	Yakima River		
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	236,749	04-15-15	06-01-15	Easton Pond	Yakima River		
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	71,382	04-15-15	06-01-15	Yakama River	Yakima River		
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	90,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River		
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	100,210	04-15-15	06-01-15	Lost Creek Acclim Pond	Yakima River		
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	103,375	04-15-15	06-01-15	Stiles Pond	Yakima River		
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	250,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River		
Yakama Tribe Total					1,742,403						
Grand Total					6,044,703						

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:		5/23/2015		to		6/4/2015			
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	378,000	06-04-15	06-16-15	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	540,000	06-04-15	06-15-15	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					918,000				
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	175	05-15-15	05-31-15	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	225	06-01-15	06-01-15	Crab Creek	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	2,575	05-15-15	05-31-15	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	17,000	05-15-15	05-31-15	Yakama River	Yakima River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2015	85,000	04-20-15	05-31-15	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2015	484,000	05-25-15	05-31-15	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2015	160,000	05-01-15	05-31-15	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					748,975				
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	98,105	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	143,770	04-15-15	06-01-15	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	236,749	04-15-15	06-01-15	Easton Pond	Yakima River
Yakama Tribe	Klickitat Hatchery	CH0	FA	2015	4,000,000	06-01-15	06-01-15	Klickitat River	Klickitat River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2015	111,000	06-01-15	06-01-15	Nelson Springs	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	71,382	04-15-15	06-01-15	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	90,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	100,210	04-15-15	06-01-15	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	103,375	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	250,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
Yakama Tribe Total					5,204,591				
Grand Total					6,871,566				

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/08/2015	73.7	0.0	74.1	0.0	84.1	6.2	80.6	0.0	84.4	9.0	88.0	17.4	87.2	23.6
05/09/2015	79.2	0.0	83.3	0.0	90.4	6.5	85.9	0.0	91.0	9.0	87.9	14.3	83.6	23.7
05/10/2015	78.0	0.0	73.3	0.0	78.2	6.2	75.4	0.0	81.3	8.7	81.3	13.6	83.0	25.9
05/11/2015	88.2	0.0	96.3	0.0	101.3	8.1	97.4	0.0	103.0	11.3	92.1	14.4	86.9	25.4
05/12/2015	112.0	0.0	112.4	0.0	124.0	8.8	113.8	1.6	119.9	10.3	122.1	28.6	120.8	28.7
05/13/2015	106.0	0.0	105.9	0.0	123.1	8.6	123.2	4.6	128.7	12.1	135.7	20.1	133.7	32.5
05/14/2015	106.8	0.0	108.0	0.0	121.3	9.0	115.7	0.0	125.6	12.5	145.0	19.9	141.8	27.9
05/15/2015	94.7	0.0	96.8	0.0	104.9	9.1	98.7	0.1	105.9	11.8	128.5	26.5	146.5	38.5
05/16/2015	83.8	0.0	82.2	0.0	94.7	7.0	92.7	0.3	101.6	11.1	92.7	20.2	87.0	19.4
05/17/2015	98.2	0.0	96.6	0.0	113.1	7.9	114.6	0.0	126.0	10.4	116.5	14.9	102.6	28.2
05/18/2015	94.6	0.0	94.8	0.0	112.5	7.8	107.2	0.0	114.0	12.4	131.4	17.3	136.3	27.3
05/19/2015	102.9	0.0	103.3	0.0	120.2	8.3	118.7	0.0	127.0	11.7	124.6	26.5	121.1	23.8
05/20/2015	116.0	0.0	113.0	0.0	128.6	8.6	123.3	0.0	130.8	13.2	135.0	23.1	137.0	26.7
05/21/2015	112.3	0.0	118.5	0.0	132.4	9.3	127.0	0.0	136.8	13.3	143.6	23.5	140.3	26.0

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill			Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/08/2015	9.6	0.0	---	8.6	65.0	20.3	63.2	18.9	63.6	23.3	63.6	26.3
05/09/2015	5.2	0.0	---	8.6	57.2	20.2	53.7	16.1	53.3	23.3	52.8	15.8
05/10/2015	1.6	0.0	---	8.5	53.0	20.2	50.8	15.2	53.1	23.2	52.9	15.8
05/11/2015	1.5	0.0	---	8.5	51.3	20.2	50.8	15.2	51.4	23.3	52.3	15.5
05/12/2015	1.5	0.0	---	8.6	52.9	20.2	50.3	15.1	51.7	23.4	52.4	36.8
05/13/2015	1.5	0.0	---	8.5	51.5	20.4	51.1	15.3	50.1	23.5	51.5	41.3
05/14/2015	1.5	0.0	---	6.5	57.8	20.3	54.7	16.4	57.3	23.7	57.6	23.9
05/15/2015	1.5	0.0	---	6.6	56.3	20.2	55.8	16.7	56.5	24.7	55.5	16.7
05/16/2015	5.1	0.0	---	7.5	59.9	20.3	58.8	17.6	59.9	26.6	59.2	42.3
05/17/2015	7.4	0.0	---	8.1	71.5	20.3	69.4	20.7	70.8	26.5	72.3	53.9
05/18/2015	5.0	0.0	---	8.1	71.3	20.5	70.8	21.2	72.2	26.3	73.5	53.0
05/19/2015	1.5	0.0	---	8.1	63.4	20.5	61.7	18.5	63.4	26.5	63.6	48.8
05/20/2015	1.6	0.0	---	8.2	64.3	20.4	61.8	18.4	63.5	25.4	64.0	25.3
05/21/2015	1.7	0.0	---	8.4	64.5	20.4	61.4	18.4	63.1	24.3	62.0	18.7

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
05/08/2015	162.3	65.3	169.0	67.5	153.3	61.2	172.6	99.9	0.0	60.2
05/09/2015	162.7	65.4	159.4	61.4	145.4	58.2	157.3	99.9	0.0	45.0
05/10/2015	144.5	58.1	143.2	42.9	133.5	53.3	146.4	100.3	0.0	33.7
05/11/2015	144.6	58.1	142.0	45.0	127.9	51.2	145.8	100.4	0.0	33.0
05/12/2015	173.3	69.8	166.2	65.8	151.1	60.5	176.6	99.7	0.0	64.4
05/13/2015	187.7	75.4	186.2	71.1	170.6	68.3	184.0	99.3	0.0	72.3
05/14/2015	193.1	77.5	193.3	57.9	175.9	70.3	192.9	99.3	0.0	81.2
05/15/2015	206.7	83.0	198.1	62.3	185.8	74.0	205.1	99.4	0.0	93.3
05/16/2015	180.6	72.2	179.5	71.4	162.6	65.1	172.6	100.1	0.0	60.1
05/17/2015	167.5	66.7	168.7	64.5	152.5	61.0	171.1	100.5	0.0	58.2
05/18/2015	209.7	84.7	205.7	61.5	190.7	76.4	208.8	99.5	0.0	96.9
05/19/2015	204.7	82.4	200.6	63.4	184.5	73.7	205.9	99.2	0.0	94.3
05/20/2015	193.3	77.8	194.1	77.3	177.9	71.2	198.4	99.2	0.4	86.4
05/21/2015	217.7	87.6	212.4	80.6	194.0	78.1	210.2	99.0	0.0	98.8

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											
	05/14/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/21/15	Chinook + Steelhead	102	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/11/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/18/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	05/13/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/20/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	05/12/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/14/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/18/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/20/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	05/09/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/16/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/19/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/12/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/14/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/19/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/21/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>				
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/8	102.0	102.3	102.6	24	---	---	---	0	106.7	106.9	107.0	24	105.9	106.5	106.8	24	106.5	106.6	106.9	16
5/9	102.1	102.4	102.8	24	---	---	---	0	106.5	106.7	106.9	24	105.4	105.9	106.4	24	106.6	106.7	107.1	14
5/10	101.9	102.3	102.6	24	---	---	---	0	107.2	107.5	108.1	24	106.4	107.3	107.6	24	107.2	107.4	107.6	17
5/11	100.7	101.1	102.1	24	---	---	---	0	108.1	108.7	109.6	24	106.6	106.9	107.1	24	108.3	108.8	109.2	19
5/12	103.3	104.1	104.6	24	---	---	---	0	108.3	108.7	109.2	24	106.9	107.0	107.1	24	108.0	108.1	108.2	13
5/13	104.1	104.3	104.6	24	---	---	---	0	108.7	108.9	109.4	24	106.7	106.9	107.3	24	108.1	108.1	108.1	1
5/14	103.9	104.2	104.4	24	---	---	---	0	108.3	108.4	108.7	24	106.7	106.9	107.1	24	107.1	107.1	107.3	11
5/15	103.4	103.5	103.7	24	---	---	---	0	108.3	108.5	108.6	24	106.7	107.0	107.2	24	107.5	107.6	108.0	15
5/16	103.1	103.5	104.1	24	---	---	---	0	107.8	108.0	109.0	24	106.4	106.7	106.7	24	107.4	107.7	108.3	23
5/17	101.8	102.7	103.3	24	---	---	---	0	107.4	107.9	108.7	24	105.7	105.8	105.9	24	106.4	106.6	106.7	24
5/18	103.0	103.7	104.1	24	---	---	---	0	106.7	107.0	108.0	24	105.7	106.0	106.1	24	106.9	107.4	107.9	23
5/19	103.4	103.6	103.9	24	---	---	---	0	106.7	106.9	107.0	24	106.0	106.3	106.6	24	107.6	108.0	108.4	21
5/20	103.9	104.6	105.0	24	---	---	---	0	106.7	107.0	107.3	24	106.5	107.2	107.5	24	107.5	108.1	108.4	24
5/21	104.4	104.8	105.2	23	---	---	---	0	107.6	108.0	108.5	23	106.9	107.4	107.7	23	108.0	108.5	109.1	24

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>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/8	106.2	107.0	108.3	24	106.4	106.9	107.5	24	107.3	108.0	108.7	24	107.6	108.1	108.5	24	107.2	107.6	107.8	24
5/9	106.0	106.3	106.6	24	106.4	106.9	107.3	24	107.3	107.9	108.3	24	107.3	107.6	108.0	24	107.1	107.3	107.5	24
5/10	106.7	107.2	107.5	24	107.3	108.3	109.8	24	108.0	109.0	109.2	24	107.8	108.3	109.2	24	107.3	107.8	108.1	24
5/11	107.7	108.2	109.4	24	107.9	108.4	109.0	24	109.3	109.9	110.4	24	108.9	109.3	109.7	24	108.6	109.0	109.4	24
5/12	107.4	107.6	107.8	24	107.5	107.7	107.9	24	109.0	109.3	109.7	24	108.8	109.0	109.1	24	108.8	109.0	109.6	24
5/13	107.7	108.2	108.8	20	106.7	107.0	107.2	24	108.2	108.4	108.7	24	108.8	109.2	109.4	24	109.9	111.2	115.5	24
5/14	---	---	---	0	106.8	107.3	107.9	24	108.1	108.8	109.4	24	108.3	108.4	108.6	24	108.1	108.3	108.6	24
5/15	107.2	107.2	108.9	13	107.3	107.9	108.8	24	108.8	109.6	110.1	24	108.8	109.1	109.7	24	108.5	108.7	109.0	24
5/16	106.8	107.2	108.1	24	107.1	107.7	108.1	24	108.4	108.9	109.3	24	108.8	109.0	109.4	24	108.6	108.9	109.4	24
5/17	106.1	106.5	107.1	24	106.1	106.4	106.6	24	107.4	107.7	108.1	24	107.7	107.8	108.1	24	107.7	107.9	108.2	24
5/18	106.3	106.9	107.8	24	106.3	107.0	107.6	24	107.4	108.2	108.5	24	107.6	107.9	108.1	24	107.2	107.6	108.0	24
5/19	107.0	107.3	108.0	24	107.0	107.8	108.2	24	108.2	109.2	109.5	24	108.2	108.6	108.8	24	107.9	108.5	108.8	24
5/20	107.1	107.5	108.1	24	107.6	108.3	108.9	24	108.7	109.7	110.2	24	108.7	109.1	109.5	24	108.3	108.7	109.0	24
5/21	107.3	107.6	107.9	23	107.5	107.5	107.6	3	108.3	108.3	108.4	3	109.5	109.7	109.9	23	109.0	109.2	109.5	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>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
5/8	106.7	107.0	107.2	24	109.8	111.5	114.4	24	109.6	109.9	110.2	24	111.6	112.0	112.4	24	110.9	111.3	111.9	24
5/9	106.8	107.2	107.5	24	109.5	111.2	112.6	24	109.7	110.7	111.1	24	110.2	111.0	112.3	24	111.3	112.0	112.6	24
5/10	107.1	107.4	107.7	24	110.1	111.4	113.4	24	110.8	111.4	112.2	24	110.3	110.7	111.0	24	111.5	112.0	112.7	24
5/11	107.9	108.3	108.6	24	111.3	112.7	114.7	24	110.9	111.9	112.8	24	111.0	111.3	111.6	24	110.7	111.2	111.6	24
5/12	107.2	107.9	108.2	24	110.7	112.0	114.3	22	110.4	110.7	111.5	24	112.8	114.6	119.3	24	110.4	110.7	111.1	24
5/13	107.9	108.4	110.2	24	111.3	112.3	114.1	24	109.0	109.5	110.3	24	111.2	111.7	112.8	24	111.3	112.4	114.9	24
5/14	107.4	108.0	108.4	24	111.1	112.0	112.9	24	109.0	109.6	110.2	24	110.7	110.9	111.1	24	110.7	111.3	111.8	24
5/15	107.8	108.3	108.5	24	111.6	112.2	113.0	24	110.2	111.0	112.1	24	111.8	113.2	118.8	24	110.4	110.9	111.4	24
5/16	107.6	108.1	108.2	24	111.1	112.2	114.2	24	108.3	108.7	109.6	24	110.5	112.2	118.8	24	108.9	109.7	110.6	24
5/17	106.7	107.2	107.8	24	109.6	110.9	112.2	24	108.2	109.0	109.4	24	109.1	109.6	109.8	24	108.9	109.5	110.8	24
5/18	106.9	107.4	107.8	24	111.0	111.8	115.1	24	109.0	109.5	110.0	24	110.2	110.9	111.5	24	109.3	109.9	110.8	24
5/19	107.3	108.0	108.6	24	110.8	112.0	116.7	24	104.1	109.5	110.8	24	112.1	112.6	113.2	24	110.9	111.5	112.4	24
5/20	107.8	108.4	108.8	24	111.1	112.2	113.0	24	110.2	110.8	111.3	24	111.9	112.5	113.2	24	111.8	112.0	112.3	24
5/21	108.5	109.1	109.6	23	111.6	112.1	112.7	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			Clrwtr-Peck			Anatone			#				
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High					
5/8	112.1	112.5	112.9	24	---	---	---	0	97.3	97.8	98.1	24	---	---	---	0	104.2	105.1	105.9	24
5/9	112.2	112.6	113.2	24	---	---	---	0	98.0	98.7	99.4	24	---	---	---	0	103.8	104.8	105.5	24
5/10	113.4	113.9	114.4	24	---	---	---	0	102.8	105.3	106.8	24	---	---	---	0	104.1	105.2	106.0	24
5/11	112.9	113.3	113.4	24	---	---	---	0	105.3	107.8	109.5	24	---	---	---	0	103.9	104.6	105.2	24
5/12	112.3	112.7	114.5	24	---	---	---	0	107.2	108.3	110.2	24	---	---	---	0	103.4	104.1	104.8	24
5/13	112.3	113.0	113.6	24	---	---	---	0	106.8	107.6	108.8	24	---	---	---	0	103.0	103.6	104.2	24
5/14	112.1	112.6	112.8	24	---	---	---	0	105.3	106.3	107.7	24	---	---	---	0	103.9	105.0	106.2	23
5/15	112.6	113.3	115.4	24	---	---	---	0	103.6	104.4	105.0	24	---	---	---	0	103.2	103.5	103.8	24
5/16	110.7	111.6	115.9	24	---	---	---	0	98.5	99.1	103.9	24	---	---	---	0	103.2	103.8	104.4	24
5/17	111.9	112.2	112.5	24	---	---	---	0	96.9	97.3	97.6	24	---	---	---	0	104.0	104.9	105.7	24
5/18	111.5	111.7	111.9	24	---	---	---	0	98.0	98.6	98.9	24	---	---	---	0	104.4	105.1	106.1	23
5/19	111.9	112.0	112.3	24	---	---	---	0	106.6	108.9	110.1	24	---	---	---	0	104.7	105.5	106.3	21
5/20	112.7	113.0	113.4	24	---	---	---	0	105.9	108.4	110.9	24	---	---	---	0	104.2	105.1	106.1	24
5/21	---	---	---	0	---	---	---	0	102.3	103.4	104.5	23	---	---	---	0	103.9	104.6	105.3	21

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr			#				
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High					
5/8	101.6	103.2	104.5	24	102.4	102.5	102.7	24	109.7	110.1	110.8	24	109.7	110.0	110.4	24	110.7	110.9	111.3	24
5/9	101.8	103.6	105.0	24	102.2	102.3	102.4	24	110.0	110.3	110.6	24	109.6	109.9	110.7	24	111.2	111.7	112.0	24
5/10	102.4	104.3	105.6	24	103.0	103.5	104.1	24	110.5	111.1	112.0	24	110.6	111.4	112.2	24	111.7	112.1	112.3	24
5/11	102.2	103.5	104.7	24	103.9	104.2	104.3	24	111.1	111.4	112.5	24	111.0	111.2	111.5	24	111.9	112.1	112.3	24
5/12	102.3	103.7	105.2	24	104.1	104.3	104.5	23	110.8	111.1	111.9	23	110.0	110.3	110.6	24	111.7	111.9	112.1	24
5/13	101.6	102.3	103.2	24	103.9	104.0	104.3	24	110.8	111.2	111.7	24	109.4	109.6	110.2	24	111.3	111.5	111.6	24
5/14	102.6	104.4	105.8	24	103.6	103.8	104.2	24	110.4	110.6	111.1	24	109.4	109.9	110.1	24	111.3	111.6	111.8	24
5/15	101.8	102.4	103.1	24	102.8	102.9	103.4	24	110.2	110.4	110.7	24	110.1	110.3	110.6	24	111.5	111.6	111.9	24
5/16	101.3	102.1	102.8	24	102.2	102.3	102.5	24	110.4	111.0	111.9	24	109.2	109.5	109.7	24	110.9	111.1	111.5	24
5/17	101.7	103.0	104.1	24	102.4	102.8	103.1	24	109.6	109.8	110.5	24	108.7	108.9	109.1	24	110.7	110.9	111.2	24
5/18	102.3	103.7	104.9	24	102.3	102.4	102.7	24	109.6	109.9	110.4	24	109.2	109.5	109.9	24	110.4	110.7	111.3	24
5/19	103.1	104.9	106.2	24	102.7	103.1	103.5	24	109.8	110.0	110.1	24	109.5	109.7	110.0	24	110.5	110.9	111.3	24
5/20	103.0	104.6	106.0	24	103.9	104.3	104.9	24	110.0	110.2	110.4	24	110.2	110.5	110.9	24	111.0	111.3	111.8	24
5/21	102.6	103.9	104.8	23	104.7	105.0	105.4	23	110.3	110.5	111.0	23	110.5	110.7	110.9	23	110.9	111.1	111.2	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 Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High					
5/8	111.7	111.9	112.1	24	116.9	117.5	117.9	24	114.5	114.8	115.0	24	115.4	115.8	116.2	24	---	---	---	0
5/9	111.5	111.7	111.9	24	116.8	117.4	118.0	24	114.9	115.1	115.4	24	113.2	114.0	115.0	24	---	---	---	0
5/10	111.7	112.1	112.4	24	116.4	117.4	118.3	24	115.4	115.8	116.0	24	113.0	113.9	115.6	24	---	---	---	0
5/11	112.3	112.4	112.6	24	116.7	117.3	118.3	24	116.3	116.4	116.6	24	112.9	113.5	116.0	24	---	---	---	0
5/12	112.4	112.6	112.8	24	116.4	116.9	118.0	24	116.3	116.4	116.7	24	113.3	114.0	114.6	24	---	---	---	0
5/13	111.9	112.6	113.0	24	115.7	116.2	116.7	24	114.4	115.3	116.4	24	112.8	113.2	115.4	24	---	---	---	0
5/14	111.0	111.3	111.5	24	116.6	117.2	117.5	24	112.9	113.1	113.3	24	114.4	115.3	115.5	24	---	---	---	0
5/15	111.1	111.2	111.3	24	116.9	117.5	118.1	24	112.5	112.7	113.2	24	113.0	114.4	115.0	24	---	---	---	0
5/16	110.9	111.0	111.1	24	117.7	118.2	118.6	24	113.1	113.5	113.7	24	114.4	115.1	115.4	24	---	---	---	0
5/17	110.1	110.3	110.5	24	117.9	118.2	118.6	24	113.6	113.6	113.7	24	115.3	115.5	115.7	24	---	---	---	0
5/18	110.4	110.7	111.1	24	118.3	119.0	119.3	24	114.1	114.4	114.6	24	115.5	115.7	115.9	24	---	---	---	0
5/19	111.8	112.2	112.5	24	118.4	119.0	119.5	24	115.4	115.8	116.0	24	115.3	115.6	115.8	24	---	---	---	0
5/20	112.6	112.9	113.2	24	118.5	119.2	120.4	24	116.3	116.6	116.8	24	115.3	116.0	116.3	24	---	---	---	0
5/21	112.8	113.0	113.1	23	118.0	118.6	119.2	21	117.3	117.7	117.9	23	114.7	116.0	116.7	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
5/8	110.6	111.4	112.1	24	116.5	117.3	117.4	24	110.4	110.8	111.7	24	111.6	112.0	112.5	24	111.8	112.4	112.6	24
5/9	112.1	113.0	114.4	24	116.6	116.9	117.1	24	110.2	110.4	110.7	24	112.0	112.6	113.2	24	112.5	112.9	113.1	24
5/10	112.8	113.6	115.3	24	116.4	116.7	117.0	24	110.1	110.5	111.6	24	111.2	112.1	112.9	24	112.9	113.4	113.9	24
5/11	113.2	113.5	114.0	24	116.2	116.5	116.7	24	108.5	108.8	109.4	24	110.1	111.0	111.3	24	109.8	110.7	111.4	24
5/12	112.2	112.4	112.6	24	115.2	116.0	116.9	24	108.3	108.9	109.2	24	110.0	110.2	111.4	14	107.8	108.2	108.8	24
5/13	109.2	110.4	111.9	24	113.9	114.3	115.0	24	108.6	108.8	109.1	24	112.5	113.7	115.3	18	109.3	109.4	109.6	24
5/14	107.9	108.3	109.4	24	114.5	114.9	115.4	24	109.4	109.9	110.3	24	114.2	114.4	114.7	24	111.8	112.7	113.3	24
5/15	107.7	108.1	108.6	24	114.0	114.2	114.6	24	110.0	110.2	110.2	24	113.8	114.3	114.7	24	110.6	111.4	112.0	24
5/16	109.4	109.9	110.1	24	115.4	116.4	117.0	24	108.1	108.4	109.1	24	111.3	112.4	113.4	24	107.5	107.9	108.6	24
5/17	109.3	109.6	110.9	24	116.6	116.9	117.2	24	107.1	107.7	108.8	24	110.0	110.3	110.6	24	109.0	110.2	110.8	24
5/18	109.1	109.7	110.9	24	114.4	114.8	115.6	24	108.4	109.2	110.8	24	110.3	110.8	111.4	24	111.7	112.2	112.6	24
5/19	111.1	111.9	112.4	24	114.5	114.8	115.4	24	109.0	109.6	110.4	24	111.9	113.6	115.0	24	110.3	110.6	110.8	24
5/20	112.2	112.7	113.0	24	115.1	115.6	116.5	24	108.9	109.3	110.4	24	114.0	114.6	114.8	24	110.6	111.5	112.4	23
5/21	112.9	113.1	113.7	23	114.5	114.8	115.3	23	109.3	109.6	110.0	23	114.5	115.4	115.6	23	112.8	113.0	113.4	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
5/8	116.9	117.4	117.7	24	113.3	114.2	114.5	24	116.8	117.6	118.2	24	115.0	116.9	117.8	24	116.4	116.4	116.5	24
5/9	117.2	117.9	118.3	24	114.9	115.6	116.1	24	117.4	118.3	118.9	24	116.0	117.6	118.7	24	116.9	117.1	117.3	24
5/10	116.9	117.9	118.4	24	115.4	115.8	116.2	24	117.3	117.9	118.1	24	116.9	117.7	118.4	24	117.1	117.2	117.4	24
5/11	115.1	115.6	116.1	24	111.8	112.5	113.8	24	116.8	117.2	117.5	24	113.8	114.5	115.6	24	117.0	117.0	117.1	24
5/12	114.3	114.8	115.5	24	109.4	109.7	110.2	24	115.8	116.5	117.0	24	114.5	115.1	115.7	24	116.4	116.8	117.0	24
5/13	115.4	116.0	116.3	24	108.7	109.1	109.5	24	115.0	115.4	115.8	24	112.4	113.9	114.9	24	116.2	116.4	116.6	24
5/14	117.1	118.3	118.7	24	111.1	112.5	113.6	24	115.7	116.2	116.4	24	113.7	115.2	116.2	24	116.5	116.8	117.0	24
5/15	116.5	117.1	117.3	24	112.6	113.4	113.8	24	115.8	116.0	116.1	24	112.8	113.4	113.9	24	116.9	117.1	117.2	24
5/16	114.2	114.6	114.8	24	109.6	110.3	111.6	24	115.4	115.6	116.0	24	112.1	112.6	112.9	24	116.1	116.2	116.3	24
5/17	114.8	115.8	116.1	24	108.8	109.6	110.1	24	116.0	116.4	116.8	24	114.2	116.1	117.0	24	116.3	116.6	117.2	24
5/18	117.1	118.0	118.4	24	111.6	112.9	113.4	24	115.6	116.0	116.3	24	114.3	115.3	115.9	24	116.8	117.3	117.6	24
5/19	116.5	116.8	116.9	24	112.8	113.1	113.5	24	115.7	115.9	116.1	24	113.2	114.5	115.1	24	116.9	117.1	117.3	24
5/20	116.6	117.3	117.5	24	112.5	113.3	113.6	24	115.9	116.1	116.4	24	114.4	115.9	116.8	24	116.8	117.3	117.6	23
5/21	118.1	118.6	119.0	23	114.3	114.7	115.1	23	116.3	116.6	117.0	23	114.4	115.5	116.4	23	117.3	117.6	117.7	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/22/2015 6:59

* 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)	
05/08/2015	*	85	247	12	31	89,351	36,392	87,780	381	---	11,484	66,182
05/09/2015	*	---	173	4	20	39,633	40,942	140,953	369	112,609	8,596	46,655
05/10/2015	*	---	150	6	4	42,497	60,203	79,546	406	---	10,206	44,095
05/11/2015	*	39	126	7	3	31,802	55,112	86,395	392	113,310	11,409	30,417
05/12/2015	*	30	136	7	5	34,044	54,129	38,269	431	---	16,296	51,411
05/13/2015		50	---	43	5	26,464	55,211	64,484	504	99,302	31,994	59,640
05/14/2015	*	39	---	205	17	30,777	41,829	26,821	348	---	35,825	54,111
05/15/2015		40	---	29	11	15,977	26,109	20,527	252	56,165	17,843	57,279
05/16/2015	*	---	---	79	11	8,159	19,788	19,326	214	---	29,728	68,800
05/17/2015	*	---	---	108	17	7,531	34,947	15,148	224	50,157	42,055	44,245
05/18/2015	*	13	---	47	30	9,663	21,082	6,359	234	---	21,109	66,922
05/19/2015	*	25	---	---	7	8,093	28,819	13,411	132	56,689	14,240	49,928
05/20/2015	*	13	---	---	---	4,275	14,236	7,422	140	---	18,707	37,503
05/21/2015		0	---	0	---	5,079	8,022	6,074	147	36,558	---	23,974
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		334	832	547	161	353,345	496,821	612,515	4,174	524,790	269,492	701,162
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		33	166	46	13	25,239	35,487	43,751	298	74,970	20,730	50,083
YTD		40,044	64,656	7,453	1,081	1,753,099	1,133,161	1,113,205	13,408	1,235,830	538,781	1,524,677

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/08/2015	*	0	0	7	79	0	143	0	11	---	0	3,097
05/09/2015	*	---	0	4	143	0	0	0	35	342	0	1,650
05/10/2015	*	---	0	14	84	625	287	0	18	---	0	3,003
05/11/2015	*	0	0	6	288	1,172	0	0	18	0	36	1,791
05/12/2015	*	0	0	14	62	498	0	750	13	---	114	3,928
05/13/2015		0	---	25	27	974	575	776	18	1,022	167	2,110
05/14/2015	*	0	---	60	45	162	286	3,353	28	---	0	4,017
05/15/2015		0	---	22	63	2,145	430	1,080	42	681	0	3,458
05/16/2015	*	---	---	64	43	800	2,008	1,793	74	---	456	4,021
05/17/2015	*	---	---	165	137	2,363	286	2,443	55	339	209	3,320
05/18/2015	*	0	---	73	245	897	1,429	2,016	13	---	585	4,762
05/19/2015	*	0	---	---	233	1,432	3,154	1,019	16	682	1,216	5,480
05/20/2015	*	0	---	---	---	2,100	0	1,446	7	---	1,901	5,642
05/21/2015		0	---	0	---	3,120	1,002	1,119	11	1,024	---	5,184
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	454	1,449	16,288	9,600	15,795	359	4,090	4,684	51,463
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		0	0	38	121	1,163	686	1,128	26	584	360	3,676
YTD		1	39	1,070	2,077	29,336	9,620	16,568	4,862	7,732	4,695	1,456,420

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)	(INDEX)
05/08/2015	*	0	0	0	6	1,453	1,433	0	127	---	307	11,999
05/09/2015	*	---	0	0	3	2,642	2,863	1,349	143	2,054	806	9,497
05/10/2015	*	---	0	0	1	1,562	3,440	2,112	156	---	746	9,878
05/11/2015	*	0	0	0	0	502	1,148	1,886	236	4,793	586	4,175
05/12/2015	*	0	0	0	1	1,495	862	1,876	315	---	534	8,135
05/13/2015		0	---	0	1	3,085	2,300	3,104	366	2,385	1,640	14,800
05/14/2015	*	0	---	0	2	3,564	2,578	1,341	372	---	1,568	10,869
05/15/2015		0	---	0	0	1,838	1,291	0	342	4,416	2,436	10,159
05/16/2015	*	---	---	0	1	1,760	5,449	1,195	247	---	3,117	19,881
05/17/2015	*	---	---	0	0	1,329	6,731	4,561	385	4,067	2,089	19,881
05/18/2015	*	0	---	0	3	1,311	5,000	3,567	397	---	1,265	17,044
05/19/2015	*	0	---	---	1	430	4,444	3,225	332	2,726	1,932	19,890
05/20/2015	*	0	---	---	---	1,350	2,156	1,622	509	---	2,890	13,405
05/21/2015		0	---	0	---	871	1,575	1,119	822	5,786	---	16,199
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	19	23,192	41,270	26,957	4,749	26,227	19,916	185,812
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		0	0	0	2	1,657	2,948	1,926	339	3,747	1,532	13,272
YTD		0	0	0	47	34,559	48,818	28,456	5,287	34,883	37,038	517,041

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)	(INDEX)
05/08/2015	*	62	1,007	2	69	39,859	49,148	30,868	241	---	7,676	59,989
05/09/2015	*	---	784	0	132	30,532	58,697	41,477	265	35,599	6,715	88,353
05/10/2015	*	---	880	1	47	16,561	55,328	33,438	326	---	6,477	119,925
05/11/2015	*	38	678	1	31	49,879	39,323	23,014	423	28,757	6,039	64,411
05/12/2015	*	29	987	0	43	19,430	19,574	13,507	453	---	3,855	42,485
05/13/2015		21	---	2	241	25,328	21,277	15,250	442	25,585	4,652	44,820
05/14/2015	*	25	---	19	111	19,762	13,181	29,168	490	---	4,860	40,406
05/15/2015		14	---	25	164	9,298	6,312	16,206	346	29,609	9,746	31,557
05/16/2015	*	---	---	32	168	5,039	19,790	8,567	422	---	11,024	25,018
05/17/2015	*	---	---	110	74	9,598	20,625	6,515	411	17,623	7,515	31,827
05/18/2015	*	20	---	55	197	8,766	54,916	12,718	345	---	5,156	41,858
05/19/2015	*	27	---	---	46	9,597	46,305	19,692	247	25,275	5,939	21,920
05/20/2015	*	11	---	---	---	12,975	30,908	10,598	274	---	8,973	17,057
05/21/2015		15	---	0	---	24,958	28,061	13,108	603	18,063	---	11,015
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		262	4,336	247	1,323	281,582	463,445	274,126	5,288	180,511	88,627	640,641
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		26	867	21	110	20,113	33,103	19,580	378	25,787	6,817	45,760
YTD		2,559	26,802	669	11,678	1,197,078	931,192	535,426	7,839	374,126	145,426	852,188

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)	(INDEX)
05/08/2015	*	4	0	0	1	291	0	322	65	---	1,904	1,162
05/09/2015	*	---	0	0	0	587	286	337	55	4,107	1,074	0
05/10/2015	*	---	0	0	0	0	287	0	62	---	1,138	1,461
05/11/2015	*	2	0	1	0	335	0	0	76	1,027	2,153	1,194
05/12/2015	*	6	0	0	1	166	575	0	116	---	2,214	1,666
05/13/2015		26	---	1	2	487	288	0	89	4,430	3,874	3,410
05/14/2015	*	23	---	0	8	1,296	859	0	137	---	3,606	1,654
05/15/2015		10	---	0	16	2,298	574	0	113	7,813	3,440	2,594
05/16/2015	*	---	---	0	3	720	2,581	199	90	---	6,158	5,584
05/17/2015	*	---	---	0	7	1,772	2,721	1,792	41	8,473	6,470	4,919
05/18/2015	*	0	---	1	6	2,347	3,000	2,326	40	---	6,129	5,514
05/19/2015	*	1	---	---	0	2,578	5,162	1,188	47	13,972	5,367	14,410
05/20/2015	*	0	---	---	---	825	1,006	1,983	71	---	7,985	10,584
05/21/2015		1	---	0	---	798	1,289	1,439	74	6,806	---	7,559
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		73	0	3	44	14,500	18,628	9,586	1,076	46,628	51,512	61,711
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		7	0	0	4	1,036	1,331	685	77	6,661	3,962	4,408
YTD		74	0	4	47	15,600	18,740	9,978	3,539	91,859	57,112	66,100

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)	(Coll)
05/08/2015	*	0	0	0	0	0	0	0	0	---	80	0
05/09/2015	*	---	0	0	0	0	0	0	1	0	0	0
05/10/2015	*	---	0	0	0	0	0	0	0	---	25	0
05/11/2015	*	0	0	0	0	0	0	0	0	0	58	0
05/12/2015	*	0	0	0	0	0	0	0	0	---	125	0
05/13/2015		0	---	0	0	0	0	0	1	0	417	0
05/14/2015	*	0	---	0	0	0	0	0	1	---	50	0
05/15/2015		0	---	0	0	0	0	0	0	0	100	100
05/16/2015	*	---	---	0	0	0	0	0	0	---	150	100
05/17/2015	*	---	---	0	0	0	0	0	1	0	125	0
05/18/2015	*	0	---	0	0	0	100	0	1	---	63	100
05/19/2015	*	0	---	---	0	0	1	0	0	600	400	0
05/20/2015	*	0	---	---	---	0	0	0	0	---	300	0
05/21/2015		0	---	0	---	0	0	0	1	200	---	0
05/22/2015		---	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	101	0	6	800	1,893	300	
# Days:		10	5	12	12	14	14	14	14	7	13	14
Average:		0	0	0	0	7	0	0	0	114	146	21
YTD		0	1	0	0	10	3,581	140	11	1,115	5,886	3,101

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:

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:

5/22/15 7:00 AM

		05/08/15	TO	05/22/15			
		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	10,800	230,106	15,050	182,744	9,750	448,450
	Sum of NumberBarged	10,712	227,304	15,047	172,362	9,530	434,955
	Sum of NumberBypassed	46	2,656	0	10,266	0	12,968
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	5	0	8	7	22
	Sum of FacilityMorts	40	141	3	108	213	505
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	42	146	3	116	220	527
LGS	Sum of NumberCollected	6,700	346,456	28,800	323,382	13,001	718,339
	Sum of NumberBarged	6,694	346,389	28,800	323,329	12,999	718,211
	Sum of NumberBypassed	4	0	0	0	0	4
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	6	0	1	0	7
	Sum of FacilityMorts	2	61	0	52	2	117
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	67	0	53	2	124
LMN	Sum of NumberCollected	9,202	349,157	15,600	158,641	5,800	538,400
	Sum of NumberBarged	9,183	348,977	15,597	158,496	5,780	538,033
	Sum of NumberBypassed	16	0	0	0	0	16
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	22	1	9	0	32
	Sum of FacilityMorts	3	158	2	136	20	319
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3	180	3	145	20	351
Total Sum of NumberCollected		26,702	925,719	59,450	664,767	28,551	1,705,189
Total Sum of NumberBarged		26,589	922,670	59,444	654,187	28,309	1,691,199
Total Sum of NumberBypassed		66	2,656	0	10,266	0	12,988
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		2	33	1	18	7	61
Total Sum of FacilityMorts		45	360	5	296	235	941
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		47	393	6	314	242	1,002

YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/22/15 7:00 AM

TO: 05/22/15

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	20,090	1,139,272	22,350	10,510	758,378	1,950,600
	Sum of NumberBarged	11,965	462,751	18,848	10,128	301,387	805,079
	Sum of NumberBypassed	8,070	676,206	3,499	160	456,817	1,144,752
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	15	41	0	7	21	84
	Sum of FacilityMorts	40	274	3	215	153	685
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	55	315	3	222	174	769
LGS	Sum of NumberCollected	6,720	790,992	34,070	13,091	650,096	1,494,969
	Sum of NumberBarged	6,694	528,895	32,350	13,049	436,763	1,017,751
	Sum of NumberBypassed	24	261,966	1,720	40	213,220	476,970
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	19	0	0	4	23
	Sum of FacilityMorts	2	112	0	2	109	225
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	131	0	2	113	248
LMN	Sum of NumberCollected	9,612	634,022	16,400	6,030	297,661	963,725
	Sum of NumberBarged	9,483	573,112	16,097	5,980	260,586	865,258
	Sum of NumberBypassed	126	60,572	300	30	36,794	97,822
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	39	1	0	28	68
	Sum of FacilityMorts	3	289	2	20	253	567
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3	328	3	20	281	635
Total Sum of NumberCollected		36,422	2,564,286	72,820	29,631	1,706,135	4,409,294
Total Sum of NumberBarged		28,142	1,564,758	67,295	29,157	998,736	2,688,088
Total Sum of NumberBypassed		8,220	998,744	5,519	230	706,831	1,719,544
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		15	99	1	7	53	175
Total Sum of FacilityMorts		45	675	5	237	515	1,477
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		60	774	6	244	568	1,652

Cumulative Adult Passage at Mainstem Dams Through: 05/21

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	05/21	196580	9719	169086	21661	119454	20060	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/21	169753	8102	123906	16286	86489	15735	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/21	142801	7263	104661	14086	73269	13853	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/21	131381	5102	87365	10168	61042	9639	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/21	98167	2684	64504	7060	40808	5738	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/21	91903	3984	62078	7029	37379	4336	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/21	86256	3854	58971	6094	30744	4006	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/21	83712	3049	55592	4816	27573	3772	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/20	18303	683	15455	836	9373	420	0	0	0	0	0	0	0	0	0	0	0	0
WAN	05/20	17626	371	0	0	8652	473	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/20	19775	355	12000	446	6839	395	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/20	7889	198	5611	258	2395	130	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/19	5895	173	2481	64	1043	54	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/19	34961	1129	15112	373	17430	367	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2015		2014		10-Yr Avg.		2015	2014	10-Yr Avg.	2015	2014	10-Yr Avg.	Wild 2015	Wild 2014	10-Yr Avg.	2015	2014	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	05/21	0	0	5	-2	0	0	2	10	0	4756	5019	4558	2429	1325	1236	59	668	234
TDA	05/21	0	0	0	0	0	0	0	0	0	372	714	2355	171	181	914	4	0	0
JDA	05/21	0	0	0	1	0	1	2	4	0	537	2987	4893	320	1119	1737	68	86	24
MCN	05/21	0	0	0	0	1	0	-1	0	0	684	719	5241	411	335	1765	15	9	2
IHR	05/21	0	0	0	0	0	0	0	0	0	1088	1673	4929	678	760	1514	5	4	0
LMN	05/21	0	0	0	0	0	0	0	1	0	3410	5152	6596	1835	1594	2132	1	0	0
LGS	05/21	0	0	0	0	0	0	0	0	0	1474	1503	3050	990	994	1440	1	0	0
LGR	05/21	0	0	0	0	0	0	0	0	0	9159	7417	8759	4324	3430	3217	0	0	0
PRD	05/20	0	0	0	0	0	0	0	2	0	35	110	46	0	0	0	6	1	0
WAN	05/20	0	0	0	0	0	0	1	0	0	51	0	101	0	0	0	4	0	0
RIS	05/20	0	0	0	0	0	0	2	1	1	121	264	104	86	143	55	0	0	0
RRH	05/20	0	0	0	0	0	0	0	0	0	108	240	334	75	153	245	0	0	0
WEL	05/19	0	0	0	0	0	0	0	0	0	29	104	59	23	63	43	0	0	2
WFA	05/19	1	0	9	0	0	0	0	0	0	5336	9344	10655	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.