



Fish Passage Center

Weekly Report #14 - 9

May 16, 2014

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Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 62% and 144% of average at individual sub-basins over May. Precipitation above The Dalles has been 90% of average over May. Over the 2014 water year, precipitation has ranged between 81% and 99% of average.

Table 1. Summary of May precipitation and cumulative October through May 15, 2014 precipitation with respect to average (1971–2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2014		Water Year 2014	
	May 1-15, 2014		October 1, 2013 to May 15, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	1.68	104	25.2	94
Snake River above Ice Harbor	0.85	77	14.3	84
Columbia above The Dalles	1.08	90	17.7	86
Kootenai	1.82	109	26.8	99
Clark Fork	0.94	62	16.6	85
Flathead	1.46	82	25.8	99
Pend Oreille River Basin above Waneta Dam	1.21	75	21.6	90
Salmon River Basin	1.03	72	17.1	81
Upper Snake Tributaries	1.22	86	19.0	95
Clearwater	1.29	68	30.1	95
Willamette River above Portland	2.74	144	48.0	85

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 143% of average, for Snake River Basins the average snowpack is 112% of average, and for lower Columbia Basins between

McNary and Bonneville Dam average snowpack is 64% of average.

Table 2 displays the May 15th ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 15th ESP forecast at The Dalles between January and July is 108,698 Kaf (107% of average).

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

Location	May 15, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	107	108698
Grand Coulee (Jan–July)	109	64896
Libby Res. Inflow, MT (Apr–Aug)	119	7005 6996*
Hungry Horse Res. Inflow, MT (Jan–July)	123	2580
Lower Granite Res. Inflow (Apr–July)	108	21374
Brownlee Res. Inflow (Apr–July)	63	3475
Dworshak Res. Inflow (Apr–July)	135	3255 3183*

* Denotes COE May Forecast

Grand Coulee Reservoir is at 1237.9 feet (5-15-14) and has refilled 3.2 feet over the last week. Outflows at Grand Coulee have ranged between 141.0 and 165.2 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2387.6 feet (5-15-14) and has refilled 1.0 foot over the previous week. Daily average outflows at Libby Dam have been 16 Kcfs over the last week. The sturgeon pulse operation will begin May 16, 2014, with outflows at

Libby expected to increase to full powerhouse discharge (24–26 Kcfs).

Hungry Horse is currently at an elevation of 3498.8 feet (5-15-14) and has refilled 0.9 feet over the previous week. Outflows at Hungry Horse have been 7.5–8.8 Kcfs over the last week.

Dworshak is currently at an elevation of 1522.1 feet (5-15-14) and has refilled 12.4 feet over the previous week. Outflows at Dworshak have been 2.4–4.8 Kcfs over the last week. At the 5-14-14 TMT Meeting, BPA requested a short-term increase in outflow from Dworshak. The COE estimated some flexibility in the Dworshak water supply and refill operation, and the request was agreed to by TMT members. The COE increased discharges at Dworshak from 2.4 Kcfs to 4.8 Kcfs on May 14, 2014, and discharges are expected to remain at this level through May 16, 2014, after which be reduced down to 2.4 Kcfs.

The Brownlee Reservoir was at an elevation of 2061.9 feet on May 15, 2014, refilling 4.7 feet over the last week. Inflows to Brownlee Dam have ranged between 14.3 and 15.7 Kcfs last week.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2014) the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 78.1 Kcfs over the last week and 77.5 Kcfs over the spring season.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (which began April 10th) and 135 Kcfs at Priest Rapids Dam (which began April 10th). Over the last week, flows at McNary Dam averaged 274.3 Kcfs over the last week and 262.9 over the spring period. Flows at Priest Rapids Dam have averaged 184.8 Kcfs over the last week and 171.0 Kcfs over the spring period.

Spill

The 2014 fish spill program was initiated at the lower Snake River projects beginning on April 3rd and on April 10th at the lower Columbia River projects.

All of the lower Snake River projects have spilled at the 2014 Fish Operations Plan (FOP) levels. Excess generation spill occurred during some periods at Lower Granite Dam earlier in the week. At Lower Monumental Dam the spill cap was reduced by 2 Kcfs on May 3rd to address the total dissolved gas levels below the project. To address this reduction, and any future reductions, a System Operational Request was submitted to change the spill pattern from bulk to uniform, which produces less gas and allows a slightly higher spill level. The request was denied by the Action Agencies. Lower Monumental Dam was moved to the top of the spill priority list for the distribution of excess spill using a bulk pattern during some hours. This does not address the intent of the SOR since excess generation spill occurs only sporadically. Since the change in the spill priority, only several hours of excess generation spill occurred at the project on May 10, 2014. On Aril 28th the “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/ Gas Cap, were initiated at Ice Harbor Dam. Some excess generation spill has occurred at this project. The net effect of the “test-like” operation is an overall decrease in spill levels during the implementation period. On May 14, Spill Gate #9 at Ice Harbor Dam was taken out of service for unplanned maintenance and inspection. During this outage, the COE has adjusted the use of Spill Gate #8 to maintain required spill levels.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3–April 28: 45 Kcfs/Gas Cap April 28–June 1: 30%/30% vs. 45 Kcfs/Gas Cap

At the Middle Columbia River projects, McNary Dam spilled above 40% due to limited hydraulic capacity and excess generation spill. John Day Dam spilled close to the objectives. The Dalles Dam spilled close to the 40% objective, and Bonneville Dam spilled at or above the 100 Kcfs.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	Pre-test: 30%/30% Testing: 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

New this year is a change in the way the U.S. Army Corps of Engineers will assess whether a project is in compliance with the total dissolved gas variances in place. The States of Oregon and 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. In 2014, the location of a TDG monitor and/or type of 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 lower Columbia River forebay monitors. On any given day the compliance of the tailrace monitors at the lower Columbia River projects will be determined using either the Washington or Oregon methodology, whichever is the most restrictive, and spill may 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. One percent of sampled fish at Bonneville Dam were observed with signs of GBT on May 13, 2014. At McNary Dam 1% of fish were detected with signs on May 12, 2014. The incidence of GBT at all projects was well below the action criteria of 15%.

Smolt Monitoring

Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, LGR) and two of the four traps (GRN and IMN). Sampling at the Salmon River Trap (WTB) was terminated after the April 21st sample and sampling at the Snake River Trap (LEW) was terminated after the May 8th sample.

Although numbers decreased this week when compared to last week, this week's samples at Bonneville Dam (BON) were dominated by yearling Chinook juveniles. This week's daily average passage index for yearling Chinook was about 57,000 per day. Last week's daily average passage index was nearly 65,000 per day. Passage of steelhead, subyearling

Chinook, and coho also decreased this week when compared to last week. This week's daily average passage indices for these species were nearly 13,000, 30,000, and 16,000 per day, respectively. Last week's daily average passage indices were nearly 25,000 for steelhead, 107,000 for subyearling Chinook, and 20,000 for coho. Sockeye passage increased this week when compared to last week. The daily average passage index for sockeye this week was about 5,400 per day. So far, no Pacific lamprey ammocoetes have been sampled at BON this year and no Pacific lamprey macrophthalmia were encountered this week.

Yearling Chinook continued to dominate the collections at John Day (JDA) this week. However, yearling Chinook passage decreased this week, when compared to last week. This week's daily average passage index for yearling Chinook at JDA was about 81,000 per day. Last week's daily average passage index was about 88,000 per day. Coho and steelhead passage also decreased this week. This week's daily average passage indices for these two species were about 4,700 and 41,000, respectively. Last week's daily average passage indices for these two species were about 9,600 and 52,000 per day, respectively. Sockeye passage increased this week. This week's daily average passage index for sockeye at JDA was nearly 6,600 per day. Subyearling Chinook passage remained relatively low this week. No Pacific lamprey ammocoetes were encountered this week. Pacific lamprey macrophthalmia were encountered in three of this week's samples.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Passage of yearling Chinook increased again this week, when compared to the previous week. This week's daily average passage index for yearling Chinook at MCN was about 216,000 per day. Last week's daily average passage index for yearling Chinook at MCN was about 121,000 per day. Sockeye passage at MCN increased substantially this week. This week's daily average passage index for sockeye was about 120,000 per day. Last week's daily average passage index for sockeye was only about 17,000 per day. Coho passage also increased this week when compared to last week. This week's daily average passage index for coho was about 8,850 per day. This week's daily average passage index for steelhead was about 36,500 per day. This represents a decrease over last week's daily average passage

index of about 56,500 per day. Passage of subyearling Chinook remained relatively steady this week, when compared to last week. Unlike previous weeks, at least a few of the subyearling Chinook collected this week were not fry. Most species at MCN have exhibited elevated levels of descaling this week. In particular, sockeye descaling has been in the 7.4%–15.8% range this week. The COE is addressing the elevated descaling by raking the screens and removing excess debris at the project. Finally, only Pacific lamprey macrophthalmia have been collected so far this year. However, no Pacific macrophthalmia were encountered in this week's samples.

As with previous weeks, this week's samples at Lower Granite Dam were dominated by yearling Chinook. However, yearling Chinook passage decreased substantially this week when compared to last week. This week's daily average passage index for yearling Chinook at LGR was about 79,000. Last week's daily average passage index for yearling Chinook was nearly 230,000 per day. Steelhead, sockeye, and coho passage also decreased this week. The daily average passage indices for these three species were 51,000, 650, and 1,600 per day, respectively. The first clipped sockeye for 2014 was sampled on May 11th. However, no clipped sockeye have been sampled at LGR since then. Subyearling Chinook passage this week was relatively similar to last week. As with MCN, this is the first week when at least one of the subyearling Chinook collected at LGR was not a fry. This is also the first week where lamprey juveniles have been encountered in the sample. In all, 11 Pacific lamprey ammocoetes were encountered in the May 13th sample. Pacific lamprey macrophthalmia were encountered in five of this week's samples, with as many as 42 sampled in one day (May 13th). There was an incident with releasing fish from one of the transportation barges earlier this week. A barge that left LGR on May 9th was unable to release fish from one of its six holds. After multiple attempts to release these fish, it was determined that the barge would return to LGR. After further discussions, it was decided that all fish that remained in the hold would be released below LGR, instead of being transported back to the release site below Bonneville Dam. The fish were released into the LGR tailrace on the morning of May 13th.

This week's samples at Little Goose Dam (LGS) continued to be dominated by yearling Chinook. However, yearling Chinook passage decreased this week, when compared to last week. This week's daily average passage index for yearling Chinook was about 130,000. Sockeye and steelhead passage also decreased this week. This week's passage indices for these two species were 3,200 and 56,000 per day, respectively. Subyearling Chinook and coho passage increased this week. This week's passage indices were about 2,000 for coho and about 330 for subyearling Chinook. Finally, only Pacific lamprey macrophthalmia have been collected so far this year at LGS. Pacific macrophthalmia were encountered only once this week, on May 11th.

Yearling Chinook dominated this week's samples at Lower Monumental Dam (LMN). This week's daily average passage index for yearling Chinook was about 46,000 per day, which is a decrease over last week's daily average passage index of over 121,000 per day. The second most dominant species in this week's sample was steelhead, with a daily average passage index of about 32,000 per day. This week's daily average passage index for steelhead passage represented a decrease over last week's daily average. Sockeye and coho juveniles passed in relatively lower numbers, with daily average passage indices of about 2,100 and 220 per day, respectively. Finally, only Pacific lamprey macrophthalmia have been collected so far this year at LMN. Pacific macrophthalmia were encountered only once this week, on May 13th.

Steelhead dominated this week's samples at Rock Island Dam (RIS). This week's daily average passage index for steelhead at RIS was about 1,270 per day, which is an increase over last week's daily average of about 445 per day. Sockeye and coho passage also increased this week, when compared to last week. This week's daily average passage indices for these two species were 870 and 530 per day, respectively. This week's daily average passage index for yearling Chinook at RIS was about 860 per day, which is a decrease over last week's daily average passage index of over 1,000 per day. Subyearling Chinook passage at RIS remained relatively low this week. Finally, Pacific lamprey macrophthalmia were encountered in only one of this week's samples.

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. This week's collections were dominated by steelhead with a daily average collection of about 145 per day. This week's daily average collection for steelhead is an increase over the previous week's daily average collection of about 75 per day. Yearling Chinook collections decreased this week, when compared to last week. This week's daily average collection for yearling Chinook at GRN was about 125 per day.

The Imnaha River Trap (IMN) is located at river kilometer 7 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 13th. For the period of May 7–May 13, the average daily collection for yearling Chinook was about 63 per day, which is a decrease from the previous week's daily average collection of about 222 per day. Steelhead collections over the May 7–May 13 period also decreased when compared to the previous 7-day period. The daily average collection for steelhead for the period of May 7–13 was about 760 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. Approximately 470,000 subyearling fall Chinook were scheduled to be released into Lapwai Creek, a tributary of the Clearwater River, this week. This was the only new release that was scheduled for this zone this week. Of the 470,000 subyearling fall Chinook juveniles that were scheduled to be released this week, about 36% were unmarked.

Approximately 2.8 million subyearling fall Chinook juveniles are scheduled for release to this zone over the next 2 weeks. All of these subyearling fall Chinook juveniles are scheduled to be released above Lower Granite Dam. Of these, about 68% are scheduled to be released into the Snake River, 18% are scheduled to be released into the Clearwater River,

and 14% are scheduled to be released into the Grande Ronde River. Finally, about 36% of the subyearling fall Chinook juveniles that are scheduled for release into this zone over the next 2 weeks are unmarked and about 11% are marked only with a coded-wire tag. There are no other releases scheduled for this zone over the next 2 weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Four releases of subyearling fall Chinook juveniles were scheduled for this zone this week. Two of these four releases were Yakama Tribal releases to the Yakima River that were expected to total about 567,000 fall Chinook juveniles. The other two releases were part of the WDFW Cooperative Program and were expected to total about 19,150 fall Chinook juveniles. The vast majority (99%) of these fall Chinook juveniles were scheduled to be released into the Yakima River, with just a small proportion (1%) scheduled for release into the Wenatchee River. In addition, about 420,000 subyearling summer Chinook juveniles were scheduled for release to this zone this week. Of these, about 57% were scheduled to be released directly to the Mid-Columbia River from Chief Joseph Hatchery while the remaining 43% were scheduled to be released into Omak Creek, a tributary of the Okanogan River. About 25,000 summer steelhead were scheduled for release into this zone this week. These summer steelhead juveniles were all scheduled to be released into Omak Creek. Finally, several volitional releases of yearling spring Chinook, yearling summer Chinook, and summer steelhead that began in March and April were scheduled to end this week.

One release of 225 subyearling fall Chinook juveniles is scheduled for this zone over the next 2 weeks. This fall Chinook release is part of the WDFW Cooperative Program and is scheduled to take place in Crab Creek. The only other releases that are scheduled for this zone over the next 2 weeks are of summer steelhead. In all, approximately 644,000 summer steelhead are expected to be released over the next 2 weeks, all directly into the Mid-Columbia River from Wells Hatchery.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries

from Bonneville Dam to McNary Dam. About 600,000 subyearling fall Chinook juveniles were scheduled to be released into the Umatilla River this week. In addition, approximately 240,000 yearling spring Chinook juveniles were scheduled to be released into the Deschutes River on or around May 11th. Finally, about 12,500 winter steelhead juveniles were scheduled to be released into Hood River this week. No new releases are scheduled for this zone over the next 2 weeks.

Adult Passage

Adult counts at Bonneville Dam have been updated through May 15th. Daily adult spring Chinook counts at Bonneville Dam ranged from 1,923 to 4,537 adult salmon per day. As of May 15th, a total of 155,557 spring Chinook have been counted at Bonneville Dam. In 2013, 68,022 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2014 adult spring Chinook count at Bonneville Dam is about 2.3 times greater than the 2013 count and 1.4 times greater than the 10-year average count of 107,687. The 2014 spring Chinook jack count of 16,686 is 64.8% of the 2013 count of 25,736, while being 1.2 times greater than the 10-year average count of 13,617. At Willamette Falls 8,653 adult spring Chinook have been counted so far this year. In 2013, 14,856 adult spring Chinook were counted at Willamette. This year's count is about 58.2% of the 2013 count and 44.5% of the 10-year average count of 19,446. As of May 15th, a total of 112,859 adult spring Chinook have been counted at The Dalles Dam and 76,325 have been counted at McNary Dam. The Dalles Dam 2014 adult spring Chinook count is 2.1 times greater than the 2013 and 1.5 times greater than the 10-year average count. The 2014 McNary Dam adult spring Chinook count is about 2.1 times greater than the 2013 count and 1.5 times greater than the 10-year average count.

The 2014 Bonneville Dam adult steelhead count of 4,528 is about 1.6 times greater than the 2013 count of 2,914 and has 229 more fish than the 10-year average count of 4,299. The 2014 Bonneville Dam adult wild steelhead count of 1,259 is about 1.5 times greater than the 2013 count of 835 and 1.1 times greater than the 10-year average count of 1,155. At upriver sites, adult steelhead continue to move through the hydrosystem to reach their tributaries and spawning sites. The majority of these fish over-wintered in pools and will

complete their trip to their spawning grounds in March through early May. Daily adult steelhead counts at Lower Granite Dam ranged from 5 to 24 adults per day last week. This year's Lower Granite steelhead count of 7,381 has 20 fewer fish than the 2013 count of 7,401 and is about 84.5% of the 10-year average count of 8,736. The 2014 Lower Granite Dam adult wild steelhead count of 3,404 has 194 more fish than the 2013 count of 3,210 and is about 1.1 times greater than the 10-year average count of 3,109. At Willamette Falls, the 2014 count for steelhead was 7,846 as of May 14th. This year's steelhead count is about 94.6% of the 2013 count of 8,289 and about 71.5% of the 10-year average count of 10,969.

Wanapum Dam Update

At Wanapum Dam a significant crack (65-feet long by 2-inches wide) was discovered in a spillway monolith (#4) on February 27, 2014. This discovery has led to an emergency drawdown of the Wanapum pool to an elevation range of 541–545 feet, which is over 20 feet below its typical forebay elevation. This week, preliminary results of an investigation by Grant PUD and its consultants has determined that the primary contributing factor to a fracture developing within the dam's spillway was a mathematical error during the pre-construction design of Wanapum Dam.

The drawdown of Wanapum pool had caused the adult fishways at Wanapum Dam to not be operational. The adult fishways exits have been approximately 10 feet above the forebay water level. Grant County has designed adult fishway retrofits that involve the use of weir boxes and chutes to deliver adult fish into the forebay of Wanapum Dam. On April 15, 2014, the weir and chute retrofit was operational at the left bank fishway. A weir and chute has also been installed at the right bank fishway at Wanapum and was operational on April 26, 2014. Grant County will not be capable of counting adult fish at the usual count stations at either the left or right bank fishways at Wanapum Dam, due to the lower than normal upper ladder flows. Grant County does have people monitoring/observing passage at the exit structures at Wanapum Dam.

Visual observations of the exit retrofits have been promising. During a Wanapum Dam site visit on May 7, 2014, several hundred adult fish were seen passing the left bank fishway weir and chute over a several-hour period. During this observation, with larger numbers of adults, passage across the weir was more evenly distributed relative to earlier observations with much fewer fish that seemed to prefer the left hand side of the weir (looking down into the structure). Additionally, fish seemed to pass the left bank weir quickly and there were no signs of stress or mortality upon entry into the forebay. On the same date, there were no adult fish seen passing the right bank weir structure. Grant County PUD does have plans to modify the exit chutes to include a spiral flume that will reduce the elevation of the chute outflow from approximately 10 feet down to several feet. However, the installation of these spirals is not expected to occur until mid-June and could require a ladder outage for an entire week during installation. The spiral flume is expected to first be installed at the right bank fishway. Before installation at the left bank, the timing of the summer Chinook and sockeye runs will need to be considered. Observations on May 7, 2014, showed all adult fish to be passing via the left bank ladder. A weeklong outage of the left bank ladder for spiral flume installation during the onset of the summer Chinook and sockeye runs could be difficult. Observations on May 7, 2014, on the left bank ladder improved confidence in terms of how well these retrofits will effectively pass larger numbers of adult fish.

The Trap and Haul operation at Priest Rapids Dam has been suspended for spring Chinook salmon. This decision was based upon the OLAFT causing delays in adult fish passage through the left bank fishway at Priest Rapids Dam as well as the exit weirs operating well at Wanapum Dam. Both fishways at Priest Rapids Dam are operational to full ladder criteria.

The drawdown of Wanapum pool has also had a significant impact on the adult fishways at Rock Island Dam, operated by Chelan PUD. With the lower than normal tailrace levels, Chelan PUD has constructed extensions or denils at several ladder entrances. Chelan County PUD currently has two denils in place at the right bank fishway. A denil extension is also planned to be in place at the left bank fishway in June.

Hatchery Releases Last Two Weeks

Agency	Hatchery	Hatchery Release Summary							RelRiver	
		From:	Species	Race	MigYr	NumRel	RelStart	RelEnd		RelSite
Colville Tribe	Chief Joseph Hatchery	5/2/2014	CH0	SU	2014	180,000	05-15-14	06-01-14	Omak Creek	Okanogan River
Colville Tribe	Chief Joseph Hatchery	to	CH0	SU	2014	240,000	05-15-14	06-01-14	Chief Joseph Hatchery	Mid-Columbia River
Colville Tribe Total						420,000				
Idaho Dept. of Fish and Game	Oxbow-Oregon		SO	UN	2014	110,000	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery		SO	UN	2014	1,320	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery		SO	UN	2014	165,000	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)
Idaho Dept. of Fish and Game Total						276,320				
Nez Perce Tribe	Nez Perce Tribal Hatchery		CH0	FA	2014	470,000	05-14-14	05-14-14	Lapwai Creek	Clearwater River M F
Nez Perce Tribe Total						470,000				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex		ST	SU	2014	120,000	05-04-14	05-04-14	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex		ST	SU	2014	160,000	05-08-14	05-08-14	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery		CH1	SP	2014	240,000	05-11-14	05-11-14	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife Total						520,000				
U.S. Fish and Wildlife Service	Spring Creek NFH		CH0	FA	2014	4,598,822	05-06-14	05-06-14	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Winthrop NFH		ST	SU	2014	53,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH		ST	SU	2014	96,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service Total						4,747,822				
Umatilla Tribe	Bonneville Hatchery		CH0	FA	2014	600,000	05-14-14	05-14-14	Umatilla River	Umatilla River
Umatilla Tribe Total						600,000				
Warm Springs Tribe	Parkdale Acclim. Pond		ST	WI	2014	12,500	05-14-14	05-14-14	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total						12,500				
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery		ST	SU	2014	205,000	04-25-14	05-15-14	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP		CH0	FA	2014	175	05-15-14	05-15-14	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP		CH0	FA	2014	4,700	05-01-14	05-31-14	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP		CH0	FA	2014	18,975	05-15-14	05-15-14	Yakama River	Yakima River
Washington Dept. of Fish and Wildlife	COOP		CH0	SU	2014	175	05-01-14	05-31-14	Methow River	Methow River
Washington Dept. of Fish and Wildlife	COOP		CH0	SU	2014	225	05-01-14	05-31-14	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery		ST	SU	2014	25,000	04-20-14	05-20-14	Blackbird Island Acc Pond	Wenatchee River
Washington Dept. of Fish and Wildlife	Methow Hatchery		ST	SU	2014	100,000	05-05-14	06-15-14	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Similkameen Hatchery		CH1	SU	2014	114,000	04-15-14	05-06-14	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Skamania Hatchery		ST	SU	2014	90,000	05-01-14	05-10-14	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Wells Hatchery		CH1	SU	2014	320,000	04-15-14	05-15-14	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery		ST	SU	2014	25,000	05-15-14	05-15-14	Omak Creek	Okanogan River
Washington Dept. of Fish and Wildlife	Wells Hatchery		ST	SU	2014	80,000	04-25-14	05-10-14	Okanogan River	Okanogan River
Washington Dept. of Fish and Wildlife Total						983,250				

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/2/2014		to		05/15/14				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,841	05-01-14	05-30-14	Methow River	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,892	05-01-14	05-30-14	Winthrop Hatchery	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	64,822	05-01-14	05-30-14	Biddle Pond	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	89,748	05-01-14	05-30-14	Twisp Acclim Pond	Methow River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	258,316	03-15-14	05-15-14	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	270,653	03-15-14	05-15-14	Jack Creek Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	277,151	03-15-14	05-15-14	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	72,750	04-15-14	06-15-14	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,105	04-15-14	06-15-14	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,376	04-15-14	06-15-14	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	94,680	04-15-14	06-15-14	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	140,342	04-15-14	06-15-14	Easton Pond	Yakima River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2014	117,000	05-15-14	05-15-14	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2014	450,000	05-14-14	05-14-14	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	43,408	04-15-14	06-15-14	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	108,570	04-15-14	06-15-14	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	221,567	04-15-14	06-15-14	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2014	17,280	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	33,608	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	62,997	05-01-14	05-30-14	Coulter Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	72,081	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	101,921	05-01-14	05-30-14	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	109,688	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2014	279,377	05-01-14	05-30-14	Winthrop Hatchery	Methow River
Yakama Tribe Total					3,170,173				
Grand Total					11,200,065				

Hatchery Releases Next Two Weeks

Agency	Hatchery	Species	Race	MigYr	Hatchery Release Summary					RelRiver
					From:	5/16/2014	to	5/29/2014	RelStart	
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2014	180,000	05-15-14	06-01-14	Omak Creek	Okanogan River	
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2014	240,000	05-15-14	06-01-14	Chief Joseph Hatchery	Mid-Columbia River	
Colville Tribe Total					420,000					
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2014	400,000	05-20-14	05-20-14	Pittsburg Landing Acclim Pond	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2014	500,000	05-21-14	05-21-14	Cpt John Acclim Pond Big Canyon	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2014	500,000	05-22-14	05-22-14	(Clearwater River)	Clearwater River M F	
Nez Perce Tribe Total					1,400,000					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2014	400,000	05-21-14	05-21-14	Grande Ronde River	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	CH0	FA	2014	1,000,000	05-19-14	05-23-14	Hells Canyon Dam	Snake River	
Oregon Dept. of Fish and Wildlife Total					1,400,000					
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2014	225	05-25-14	05-31-14	Crab Creek	Mid-Columbia River	
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2014	4,700	05-01-14	05-31-14	Above McNary Dam	Mid-Columbia River	
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2014	175	05-01-14	05-31-14	Methow River Similkameen Acclim	Methow River	
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2014	225	05-01-14	05-31-14	Pd Blackbird Island Acc	Okanogan River	
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2014	25,000	04-20-14	05-20-14	Pond	Wenatchee River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2014	100,000	05-05-14	06-15-14	Methow Hatchery	Methow River	
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2014	484,000	05-20-14	05-20-14	Wells Hatchery	Mid-Columbia River	
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2014	160,000	05-20-14	05-25-14	Wells Hatchery	Mid-Columbia River	
Washington Dept. of Fish and Wildlife Total					774,325					
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,841	05-01-14	05-30-14	Methow River	Methow River	
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,892	05-01-14	05-30-14	Winthrop Hatchery	Methow River	
Yakama Tribe	Cascade Hatchery	CO	UN	2014	64,822	05-01-14	05-30-14	Biddle Pond	Methow River	
Yakama Tribe	Cascade Hatchery	CO	UN	2014	89,748	05-01-14	05-30-14	Twisp Acclim Pond	Methow River	
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	72,750	04-15-14	06-15-14	Easton Pond	Yakima River	
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,105	04-15-14	06-15-14	Holmes Pond	Yakima River	
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,376	04-15-14	06-15-14	Stiles Pond Lost Creek Acclim	Yakima River	
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	94,680	04-15-14	06-15-14	Pond	Yakima River	
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	140,342	04-15-14	06-15-14	Easton Pond	Yakima River	
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	43,408	04-15-14	06-15-14	Yakama River	Yakima River	
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	108,570	04-15-14	06-15-14	Stiles Pond	Yakima River	
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	221,567	04-15-14	06-15-14	Prosser Acclim Pond Butcher Creek Acclim.	Yakima River	
Yakama Tribe	Willard Hatchery	CO	UN	2014	17,280	05-01-14	05-30-14	Pond Butcher Creek Acclim.	Wenatchee River	
Yakama Tribe	Willard Hatchery	CO	UN	2014	33,608	05-01-14	05-30-14	Pond	Wenatchee River	
Yakama Tribe	Willard Hatchery	CO	UN	2014	62,997	05-01-14	05-30-14	Coulter Creek Butcher Creek Acclim.	Wenatchee River	
Yakama Tribe	Willard Hatchery	CO	UN	2014	72,081	05-01-14	05-30-14	Pond	Wenatchee River	
Yakama Tribe	Willard Hatchery	CO	UN	2014	101,921	05-01-14	05-30-14	Rolfings Acclim Pond	Wenatchee River	

Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	5/16/2014		to		5/29/2014				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Yakama Tribe	Willard Hatchery	CO	UN	2014	109,688	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2014	279,377	05-01-14	05-30-14	Winthrop Hatchery	Methow River
Yakama Tribe Total					1,797,053				
Grand Total					5,791,378				

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
05/02/2014	155.4	4.9	158.6	25.1	169.0	22.6	152.4	17.0	154.5	26.8	158.2	48.2	173.6	43.1
05/03/2014	165.8	8.2	163.4	24.9	182.1	25.1	176.4	17.4	182.0	32.8	181.4	59.9	189.9	76.7
05/04/2014	164.7	8.2	161.5	25.1	181.9	30.1	175.5	1.7	184.2	33.3	179.5	60.6	190.8	80.1
05/05/2014	159.7	8.2	157.7	25.1	182.2	36.3	179.6	17.5	187.0	37.1	185.8	66.1	204.0	79.5
05/06/2014	147.7	8.2	149.8	25.3	166.7	23.6	169.0	6.0	177.7	33.3	174.7	57.1	189.6	60.9
05/07/2014	157.3	8.2	157.7	25.2	176.2	33.4	163.0	0.0	169.4	27.0	166.0	52.2	171.3	47.3
05/08/2014	160.5	8.2	163.7	25.0	191.4	39.4	184.8	15.3	187.3	39.6	185.8	60.9	197.5	85.2
05/09/2014	141.1	3.2	137.4	17.1	154.0	18.3	152.4	9.7	162.2	23.3	162.5	35.4	177.8	49.3
05/10/2014	152.1	0.0	154.5	21.8	172.5	10.6	164.8	9.0	170.4	30.5	168.1	50.7	173.9	55.1
05/11/2014	149.6	0.0	149.4	20.4	172.9	19.9	167.7	8.5	176.6	31.9	177.5	48.8	190.2	75.6
05/12/2014	156.1	0.0	154.2	24.9	175.6	10.0	169.7	18.6	176.3	32.0	174.1	55.6	183.3	50.0
05/13/2014	159.7	0.0	158.8	24.9	177.2	10.0	169.3	13.5	176.6	32.4	174.2	57.4	186.2	56.2
05/14/2014	165.2	0.0	164.8	25.1	183.1	20.5	176.3	11.7	180.2	37.1	177.7	50.9	182.6	59.4
05/15/2014	165.1	0.0	157.1	25.0	185.8	26.0	180.2	21.6	188.1	40.4	187.6	57.9	199.6	76.9

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

Date	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/02/2014	10.7	0.0	14.6	16.2	74.0	20.4	72.9	21.8	71.7	28.4	75.6	56.7
05/03/2014	5.1	0.0	13.9	12.9	78.8	28.8	77.6	28.9	78.5	27.6	79.6	60.5
05/04/2014	2.4	0.0	14.1	13.2	89.3	20.6	87.7	26.4	89.8	27.4	92.7	38.4
05/05/2014	2.4	0.0	14.0	17.3	102.0	26.2	100.2	33.3	98.6	27.0	100.1	44.6
05/06/2014	2.4	0.2	14.5	12.0	103.9	36.2	101.5	34.9	101.1	27.3	106.0	71.1
05/07/2014	2.4	0.0	14.3	12.5	93.4	20.7	91.3	27.5	91.1	26.8	95.2	61.6
05/08/2014	2.4	0.0	14.3	14.0	87.7	20.3	86.2	25.9	85.6	27.0	89.3	39.9
05/09/2014	2.4	0.0	14.4	12.2	83.3	20.3	79.7	23.9	79.6	26.9	81.3	24.4
05/10/2014	2.4	0.0	15.0	11.7	87.0	22.7	86.3	25.9	88.3	28.5	90.9	35.6
05/11/2014	2.4	0.0	15.4	11.4	83.4	20.2	81.4	24.5	81.9	27.9	83.4	24.9
05/12/2014	2.4	0.0	15.7	13.1	76.9	20.3	74.4	22.3	75.2	26.4	77.3	44.8
05/13/2014	2.4	0.0	15.3	10.8	72.5	20.4	71.5	21.4	72.1	28.0	73.9	54.4
05/14/2014	4.2	0.0	15.2	10.7	70.3	20.3	67.3	20.2	68.0	26.3	69.8	28.5
05/15/2014	4.8	0.0	15.0	12.4	73.6	20.7	70.1	20.9	72.2	26.9	72.9	23.1

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH2	
05/02/2014	264.1	125.6	252.9	96.8	240.8	94.1	253.1	100.9	62.3	77.6
05/03/2014	264.8	122.1	268.4	105.8	250.2	97.4	267.3	100.6	77.8	76.5
05/04/2014	289.1	145.7	279.9	106.1	260.7	97.5	295.8	100.3	96.8	86.3
05/05/2014	301.5	167.3	292.6	117.5	275.2	96.6	286.5	106.6	89.6	78.0
05/06/2014	320.1	169.7	327.7	120.6	312.7	94.4	326.6	130.4	96.8	87.1
05/07/2014	284.1	136.9	297.1	89.3	281.3	94.9	307.3	105.7	95.3	93.8
05/08/2014	286.8	135.3	290.8	90.6	278.2	97.4	302.0	105.2	95.0	89.4
05/09/2014	291.3	139.3	284.9	113.3	265.6	101.8	291.2	103.7	97.2	77.9
05/10/2014	263.0	111.8	249.9	96.0	231.1	93.0	277.6	99.9	89.4	76.0
05/11/2014	270.3	119.3	285.6	85.6	272.5	107.7	280.0	100.7	89.4	77.5
05/12/2014	288.9	139.6	292.5	98.1	276.3	109.1	299.5	115.6	94.6	77.0
05/13/2014	278.5	147.5	285.1	113.6	265.8	106.2	300.8	115.0	96.1	77.3
05/14/2014	262.2	151.1	254.2	97.1	241.4	96.4	277.3	100.7	88.2	76.0
05/15/2014	266.1	149.7	261.4	82.8	246.9	96.6	272.0	111.8	73.1	74.7

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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
Lower Granite Dam											
	05/08/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/15/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	05/03/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/05/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/14/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	05/02/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/04/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/08/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/12/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	05/03/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/06/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/10/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/13/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Rock Island Dam											
	05/08/14	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	05/13/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/15/14	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	Hungry H. Dnst			Boundary			Grand Coulee			Grand C. Tlwr			Chief Joseph							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
5/2	99.6	99.7	99.9	24	---	---	---	0	109.1	109.7	110.0	24	114.1	116.3	116.5	24	111.4	115.0	116.3	24
5/3	98.7	99.0	99.4	24	---	---	---	0	109.1	109.2	109.4	24	115.5	116.7	116.9	24	116.7	116.9	117.2	24
5/4	99.1	99.4	99.9	24	---	---	---	0	108.9	109.0	109.1	24	116.6	116.8	116.9	24	113.1	115.2	116.4	24
5/5	100.0	100.3	100.6	24	---	---	---	0	108.4	108.7	108.8	24	115.7	116.3	116.6	24	114.8	115.1	115.3	24
5/6	99.8	100.2	100.7	24	---	---	---	0	108.2	108.3	108.4	24	116.5	116.9	117.2	24	115.4	115.8	116.2	24
5/7	99.2	99.4	99.7	24	---	---	---	0	108.6	108.9	109.1	24	116.9	117.2	117.7	24	116.1	116.6	116.9	24
5/8	99.9	100.1	100.3	18	---	---	---	0	110.1	110.7	111.0	24	117.4	117.7	118.3	24	116.9	117.1	117.3	17
5/9	100.5	100.7	101.0	23	---	---	---	0	110.4	110.9	111.3	24	114.7	117.9	118.2	24	117.0	117.3	117.5	24
5/10	99.7	100.1	100.6	24	---	---	---	0	109.3	109.5	109.6	24	108.4	108.9	109.4	24	116.2	116.6	117.0	24
5/11	98.3	98.5	98.8	24	---	---	---	0	108.4	108.5	108.9	24	107.7	108.1	108.4	24	111.7	114.4	115.4	24
5/12	107.8	112.8	113.0	24	---	---	---	0	108.9	109.4	109.5	24	107.6	108.2	108.5	24	107.2	107.5	107.8	24
5/13	112.7	112.8	113.0	24	---	---	---	0	109.9	110.4	110.6	24	108.5	109.0	109.3	24	107.6	108.1	108.4	24
5/14	112.8	112.9	113.1	24	---	---	---	0	111.3	111.6	111.7	24	109.5	110.0	110.3	24	108.8	109.4	109.7	24
5/15	104.2	109.3	113.0	23	---	---	---	0	112.5	113.0	113.2	23	110.6	111.3	111.6	23	110.3	110.8	111.1	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	Chief J. Dnst			Wells			Wells Dwnstrm			Rocky Reach			Rocky R. Tlwr							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
5/2	111.2	111.9	112.1	24	---	---	---	0	---	---	---	0	111.1	111.6	112.1	22	114.1	114.7	115.9	18
5/3	112.2	112.4	112.8	24	---	---	---	0	---	---	---	0	111.9	112.0	112.1	21	115.6	117.6	119.8	19
5/4	111.2	111.5	112.1	24	---	---	---	0	---	---	---	0	111.9	112.3	114.1	16	111.9	111.9	114.5	7
5/5	111.4	111.7	112.0	24	---	---	---	0	---	---	---	0	114.5	114.6	114.9	19	117.4	117.8	118.8	16
5/6	111.5	111.8	112.0	24	---	---	---	0	---	---	---	0	114.4	114.4	114.7	21	115.8	116.8	117.2	18
5/7	111.7	111.9	112.2	24	---	---	---	0	---	---	---	0	114.5	114.7	114.9	21	113.4	113.7	113.9	18
5/8	112.0	112.2	112.6	24	114.7	114.7	114.7	2	111.8	111.8	111.8	2	115.9	116.5	116.6	22	117.1	118.6	119.9	18
5/9	111.0	111.4	111.8	24	113.8	113.8	114.1	9	114.7	114.7	115.1	9	116.4	116.5	116.6	24	117.5	119.1	120.9	22
5/10	111.4	111.7	112.0	24	113.5	113.5	113.8	13	114.4	114.5	115.1	13	115.0	115.8	116.0	22	115.0	115.5	116.2	21
5/11	110.8	111.7	113.4	24	113.2	113.2	113.7	10	115.2	115.2	115.5	10	112.3	112.5	112.9	14	113.5	113.5	116.1	7
5/12	109.8	110.0	110.3	24	109.4	109.9	112.9	16	111.3	111.9	113.9	16	113.6	114.3	114.7	20	115.3	115.3	117.7	12
5/13	109.7	109.9	110.2	24	108.2	108.3	108.5	17	109.7	109.8	110.5	17	113.0	113.5	114.1	18	116.1	116.8	118.5	16
5/14	109.7	109.8	109.9	24	109.3	109.4	110.0	13	112.1	112.3	113.6	13	110.7	111.0	111.3	19	113.5	113.8	115.6	13
5/15	110.0	110.2	110.4	23	110.2	110.2	110.9	12	113.3	113.3	114.5	12	111.6	112.1	113.3	20	116.3	116.8	118.2	16

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	Rock Island			Rock I. Tlwr			Wanapum			Wanapum Tlwr			Priest Rapids							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
5/2	111.7	112.0	112.1	22	114.1	114.6	115.2	22	112.1	112.9	113.2	24	115.5	117.8	119.8	24	116.2	117.5	117.9	24
5/3	112.2	112.2	112.3	23	115.3	117.1	117.9	23	112.7	113.2	113.6	24	117.2	117.5	117.9	24	115.0	116.5	116.9	24
5/4	112.1	112.2	112.3	19	112.9	113.3	115.1	19	112.8	114.1	114.7	24	117.3	117.9	118.4	24	115.0	115.5	115.8	24
5/5	111.7	111.8	112.0	23	116.2	117.0	117.6	23	110.7	111.2	111.8	24	117.0	117.4	117.7	24	115.7	116.5	117.4	24
5/6	111.6	111.8	112.0	23	115.8	116.3	116.7	23	---	---	---	0	---	---	---	0	---	---	---	0
5/7	111.4	111.4	111.5	9	114.7	115.8	116.2	21	114.1	114.9	115.4	24	117.0	117.7	118.3	24	115.5	116.2	117.5	24
5/8	---	---	---	0	117.2	118.0	118.9	19	114.2	114.8	115.0	24	118.0	118.5	123.1	24	117.1	117.7	120.0	24
5/9	113.5	113.5	115.9	9	116.6	116.9	117.5	15	114.7	115.1	115.7	24	115.5	116.6	117.6	24	116.0	116.4	116.9	24
5/10	112.9	113.5	114.1	22	115.3	115.9	116.6	22	113.2	113.9	114.7	24	115.9	117.0	118.6	24	113.4	114.6	116.3	24
5/11	111.3	111.6	112.5	19	114.2	114.7	115.4	19	113.0	113.6	114.0	24	114.6	115.2	115.8	24	113.2	114.0	114.9	24
5/12	112.1	113.1	114.2	17	114.7	115.6	116.7	17	---	---	---	0	---	---	---	0	---	---	---	0
5/13	112.7	112.9	113.8	14	115.7	115.9	116.7	14	113.8	114.8	115.0	24	118.0	119.0	120.5	24	117.8	119.2	121.9	24
5/14	109.9	111.0	111.8	21	114.0	114.9	116.6	18	114.9	115.2	115.7	24	116.8	117.2	118.1	24	117.5	118.2	120.7	24
5/15	111.2	112.1	113.0	20	115.6	116.5	118.0	20	---	---	---	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	<u>Priest R. Dnst</u>				<u>Pasco</u>				<u>Dworshak</u>				<u>Clrwrtr-Peck</u>				<u>Anatone</u>			
	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	
5/2	116.2	116.9	118.0	24	---	---	---	0	100.5	100.8	101.2	24	101.5	102.3	102.9	24	103.3	104.3	105.0	24
5/3	116.9	118.1	118.5	24	---	---	---	0	101.0	101.3	101.7	24	101.3	101.8	102.0	24	102.8	103.2	103.6	24
5/4	117.0	117.3	117.5	24	---	---	---	0	101.2	101.8	102.3	24	101.9	102.4	102.9	24	103.4	104.0	104.5	24
5/5	117.4	117.8	118.1	24	---	---	---	0	101.1	101.8	102.4	24	102.1	102.7	103.1	24	104.2	104.9	105.3	24
5/6	---	---	---	0	---	---	---	0	102.9	104.3	106.3	24	102.2	102.7	103.1	24	104.5	105.1	105.6	24
5/7	114.9	115.3	116.3	24	---	---	---	0	101.2	101.8	102.3	24	101.8	102.4	103.0	24	104.7	105.4	106.1	23
5/8	118.3	119.2	119.8	24	---	---	---	0	101.6	102.7	103.6	24	102.1	103.1	103.7	24	104.5	105.4	106.2	24
5/9	116.3	117.9	118.8	24	---	---	---	0	102.5	103.1	103.6	24	101.5	102.0	102.4	24	103.9	104.4	105.1	24
5/10	114.4	115.2	116.1	24	---	---	---	0	102.3	102.9	103.6	24	101.6	102.2	102.6	24	103.6	104.2	104.9	23
5/11	116.1	116.6	117.0	24	---	---	---	0	101.2	101.7	102.3	24	101.0	101.4	102.0	24	103.6	104.3	104.8	24
5/12	---	---	---	0	---	---	---	0	100.4	101.1	101.7	24	101.6	102.8	103.6	24	103.8	104.9	105.8	24
5/13	116.5	116.9	117.4	24	---	---	---	0	99.9	100.8	101.6	24	101.6	102.6	103.4	24	103.9	104.9	105.7	24
5/14	117.0	117.2	117.5	24	---	---	---	0	99.7	100.3	100.7	24	101.6	102.6	103.4	24	104.0	104.9	105.6	24
5/15	---	---	---	0	---	---	---	0	100.3	100.9	101.5	23	101.9	102.8	103.4	23	104.3	105.2	105.9	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwrtr-Lewiston</u>				<u>Lower Granite</u>				<u>L. Granite Tlwr</u>				<u>Little Goose</u>				<u>L. Goose Tlwr</u>			
	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	
5/2	102.8	104.3	105.3	24	105.1	105.6	105.9	24	111.4	111.8	112.0	24	111.5	112.6	113.6	24	114.2	114.6	114.9	24
5/3	102.1	102.5	102.9	24	105.5	105.7	106.2	24	113.5	115.8	116.8	24	112.0	112.3	112.5	24	114.8	115.8	116.3	24
5/4	102.3	102.9	103.4	24	104.5	104.8	105.4	24	110.4	110.7	111.5	24	111.9	112.1	112.3	24	113.2	113.5	113.7	24
5/5	102.5	103.0	103.5	24	102.8	103.1	103.8	24	111.8	113.7	116.7	24	111.3	112.0	112.6	24	114.6	115.0	115.3	24
5/6	102.6	103.3	103.8	24	102.9	103.2	103.4	24	115.4	116.9	117.0	24	110.3	110.8	111.7	24	114.4	114.9	115.0	24
5/7	102.7	103.6	104.6	24	103.6	103.9	104.1	24	110.2	110.5	111.9	24	109.5	109.8	110.3	24	113.1	113.7	114.6	24
5/8	102.4	103.2	104.1	24	104.4	104.9	105.2	24	110.0	110.5	111.0	24	112.1	113.0	113.5	24	113.4	113.9	114.2	24
5/9	102.0	102.7	103.8	24	104.3	104.5	104.9	24	109.9	110.3	110.9	24	111.4	112.3	112.8	24	113.4	113.9	114.4	24
5/10	101.2	101.8	102.5	24	103.2	103.4	103.9	24	111.0	111.9	116.1	24	107.9	108.3	109.1	24	112.4	112.7	113.0	24
5/11	101.1	101.6	102.4	24	102.2	102.4	102.9	24	109.5	109.8	110.4	24	106.3	106.5	107.0	24	111.8	112.1	112.4	24
5/12	101.9	103.4	104.4	24	101.7	102.2	102.6	24	109.4	109.9	110.6	24	107.2	108.0	108.3	24	112.0	112.7	113.0	24
5/13	102.3	103.5	104.4	24	102.5	102.7	103.0	24	110.1	110.6	111.1	24	107.9	108.1	108.4	24	112.5	112.8	113.0	24
5/14	102.3	103.5	104.4	24	103.6	104.1	104.5	24	110.6	111.2	112.0	24	108.3	108.7	109.4	24	112.9	113.3	113.5	24
5/15	102.4	103.5	104.3	23	105.3	105.7	106.1	23	111.1	111.6	112.4	23	110.1	110.5	111.0	23	113.7	114.1	114.3	23

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

Date	<u>Lower Mon.</u>				<u>L. Mon. Tlwr</u>				<u>Ice Harbor</u>				<u>Ice Harbor Tlwr</u>				<u>McNary-Oregon</u>			
	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	
5/2	115.1	115.4	116.0	24	119.1	120.0	120.8	23	119.2	119.8	120.0	24	115.9	116.0	116.2	24	---	---	---	0
5/3	115.5	115.7	115.9	24	118.5	119.3	119.8	24	119.0	119.4	119.9	24	115.9	116.1	116.4	24	---	---	---	0
5/4	114.3	114.4	114.6	24	118.7	119.3	120.0	24	116.7	117.2	118.1	24	116.5	117.0	117.3	24	---	---	---	0
5/5	113.8	114.1	114.6	24	119.3	120.1	120.6	24	114.5	114.8	115.2	24	116.2	116.6	117.7	24	---	---	---	0
5/6	113.5	114.2	114.7	24	118.3	120.2	120.7	24	114.4	115.0	115.2	24	118.0	119.0	120.1	24	---	---	---	0
5/7	114.9	115.5	115.9	24	118.2	120.4	121.0	24	114.8	115.2	115.6	24	116.8	117.4	117.9	24	---	---	---	0
5/8	115.0	115.2	115.6	24	119.5	120.6	121.0	24	115.6	116.0	116.3	24	115.7	116.1	116.3	24	---	---	---	0
5/9	113.1	113.9	114.7	24	118.3	118.9	119.3	24	114.9	115.6	116.5	24	114.6	115.1	116.4	24	---	---	---	0
5/10	111.0	111.2	111.7	24	117.6	118.7	119.0	24	111.9	112.4	113.3	24	115.2	115.9	117.0	24	---	---	---	0
5/11	110.4	110.7	110.8	24	118.1	118.7	119.1	24	110.8	111.1	111.5	24	113.5	113.9	114.3	24	---	---	---	0
5/12	110.6	111.0	111.1	24	117.9	118.7	119.7	24	112.1	112.6	113.0	24	115.0	115.7	116.0	24	---	---	---	0
5/13	111.1	111.4	111.6	24	119.2	119.9	120.6	24	113.1	113.3	113.5	24	115.5	115.8	116.9	24	---	---	---	0
5/14	112.4	113.0	113.8	24	118.3	119.3	119.6	24	114.5	115.1	115.7	24	115.0	115.3	115.9	24	---	---	---	0
5/15	114.3	114.6	115.0	23	119.0	119.5	119.8	23	116.9	117.6	117.9	23	115.8	116.0	116.3	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	McNary-Wash			# hr	McNary Tlwr			# hr	John Day			# hr	John Day Tlwr			# hr	The Dalles			# hr
	24 h	12 h	High		24 h	12 h	High		24h	12h	High		24h	12h	High		24h	12h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	AVG		
5/2	116.3	117.1	117.7	24	116.3	116.9	117.6	24	111.6	112.6	113.0	24	116.2	117.6	118.1	24	113.6	113.8	113.9	24
5/3	115.4	116.1	117.1	24	116.0	116.3	117.0	24	113.8	114.4	114.7	24	117.2	117.3	117.5	24	113.4	114.3	115.2	24
5/4	113.7	114.1	114.5	24	117.5	117.8	118.1	24	113.9	114.2	114.6	24	117.0	118.3	118.6	24	114.1	114.3	114.6	24
5/5	111.8	112.2	112.4	24	118.1	118.4	118.7	24	113.2	113.4	113.8	24	118.0	118.2	118.4	24	113.7	114.0	114.6	24
5/6	111.4	111.9	112.1	24	118.3	118.4	118.6	24	111.8	112.1	112.6	24	118.1	118.3	118.4	24	112.3	112.6	113.0	24
5/7	112.5	113.3	114.2	24	117.1	117.2	117.6	24	110.6	111.0	111.3	24	115.8	116.1	116.7	24	111.7	112.3	112.6	24
5/8	113.9	114.1	114.6	24	117.2	117.3	118.2	24	111.7	112.3	112.6	24	115.7	116.4	117.0	24	112.2	112.4	112.6	24
5/9	111.4	112.5	114.0	24	116.9	117.3	117.5	24	111.4	111.6	112.2	24	116.8	117.5	118.0	24	111.3	111.8	112.4	24
5/10	108.4	108.7	109.2	24	114.3	114.5	114.7	24	110.4	110.6	110.9	24	115.5	116.1	116.4	24	111.1	111.4	111.6	24
5/11	108.7	109.3	110.1	24	115.2	115.9	116.1	24	109.6	109.8	110.1	24	114.5	114.8	115.2	24	110.6	111.3	111.9	24
5/12	110.0	110.9	111.6	24	116.5	116.9	117.2	24	109.1	109.4	109.6	24	115.4	117.3	118.3	24	111.1	111.4	111.8	24
5/13	112.0	113.4	114.3	24	116.9	118.4	118.8	24	108.5	108.9	109.4	24	117.6	117.8	118.1	24	111.9	112.8	113.3	24
5/14	113.8	114.5	115.2	24	117.2	117.4	118.2	24	110.5	111.3	112.2	24	116.4	117.5	118.0	24	113.3	113.9	114.2	24
5/15	115.7	116.6	117.8	23	117.3	117.4	117.6	23	113.4	114.3	115.0	23	114.8	115.7	117.9	23	113.9	114.1	114.5	21

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	The Dalles Dnst			# hr	Bonneville			# hr	Warrendale			# hr	Camas\Washougal			# hr	Cascade Island			# hr
	24 h	12 h	High		24 h	12 h	High		24h	12h	High		24h	12h	High		24h	12h	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
5/2	118.3	118.7	119.0	24	117.5	117.9	118.1	24	118.1	118.6	119.1	24	117.1	118.7	119.6	24	118.2	118.4	118.6	24
5/3	117.9	118.3	119.0	24	115.2	115.6	115.8	24	116.3	116.5	116.8	24	116.2	116.6	117.5	24	118.5	118.6	118.8	24
5/4	118.0	118.2	118.7	24	115.7	115.9	116.3	24	116.1	116.3	116.5	24	114.9	115.1	115.3	24	119.4	119.8	120.3	24
5/5	117.4	117.9	118.4	24	115.3	115.5	115.7	24	116.3	116.7	117.5	24	115.2	116.3	116.9	24	119.3	119.8	122.0	24
5/6	115.6	115.9	116.5	24	114.0	114.3	115.0	24	116.1	116.4	116.8	24	115.8	116.8	117.7	24	121.5	122.4	122.9	24
5/7	115.6	116.1	116.7	24	113.0	113.3	113.5	24	114.7	114.9	115.2	24	115.4	116.3	117.1	24	119.9	120.1	120.1	24
5/8	116.3	116.7	117.1	24	114.2	114.7	114.9	24	115.2	115.6	115.9	24	114.1	114.4	114.7	24	119.6	119.9	120.1	24
5/9	116.4	116.6	117.0	24	112.5	113.2	114.3	24	113.9	114.3	115.3	24	112.6	113.0	113.4	24	118.7	119.0	119.6	24
5/10	116.4	116.8	117.2	24	112.4	112.5	112.7	24	113.7	114.0	114.2	24	112.3	113.2	113.7	24	118.3	118.5	118.6	24
5/11	116.5	116.8	117.3	24	112.4	112.8	113.2	24	114.1	114.3	114.7	24	113.8	115.2	116.2	24	118.2	118.4	118.5	24
5/12	116.9	117.2	117.5	24	114.6	115.3	115.6	24	115.8	116.6	116.8	24	113.7	114.8	115.4	24	119.1	119.3	119.4	24
5/13	117.4	118.1	118.7	24	115.7	116.1	116.4	24	116.7	116.9	117.2	24	115.3	116.4	117.1	24	119.3	119.7	120.0	24
5/14	118.4	119.0	119.4	24	116.6	117.1	118.0	24	116.8	117.1	117.4	23	115.6	116.7	117.6	24	118.7	118.9	119.8	24
5/15	118.7	119.1	119.5	23	118.1	118.2	118.4	23	118.2	118.9	119.3	23	116.4	117.9	118.9	23	119.4	119.7	119.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/16/2014 7:31

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)	
05/02/2014	*	---	208	102	69	71,854	79,552	159,122	773	---	58,794	52,145
05/03/2014	*	---	272	154	105	127,562	104,538	102,926	1,050	136,973	64,362	41,883
05/04/2014	*	---	325	408	108	169,168	134,600	92,192	1,356	---	70,601	40,800
05/05/2014	*	---	129	243	3,947	315,685	184,066	114,590	1,418	110,836	91,977	54,498
05/06/2014	*	---	408	313	642	456,185	290,732	141,636	704	---	92,386	61,683
05/07/2014	*	---	88	133	81	266,594	226,824	160,038	915	115,658	126,642	91,912
05/08/2014	*	---	64	143	601	194,848	96,409	80,105	1,089	---	113,080	110,102
05/09/2014	*	---	58	62	---	179,360	153,752	92,086	507	118,649	108,032	91,875
05/10/2014	*	---	60	149	---	151,632	207,681	102,649	1,149	---	111,757	59,885
05/11/2014	*	---	70	274	---	71,770	172,649	49,042	1,030	344,892	66,557	40,370
05/12/2014	*	---	56	186	---	59,398	195,675	27,779	822	---	72,440	43,155
05/13/2014	*	---	44	91	---	47,332	94,217	23,577	784	280,678	70,202	36,172
05/14/2014	*	---	---	66	---	22,258	37,840	14,893	877	---	77,314	51,828
05/15/2014		---	---	56	---	18,943	42,464	13,320	823	120,903	62,838	73,940
05/16/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		0	1,782	2,380	5,553	2,152,589	2,020,999	1,173,955	13,297	1,228,589	1,186,982	850,248
# Days:		0	12	14	7	14	14	14	14	7	14	14
Average:		0	149	170	793	153,756	144,357	83,854	950	175,513	84,784	60,732
YTD		65,404	62,694	24,098	10,159	4,303,253	2,281,384	1,497,995	17,367	1,604,171	1,580,753	1,449,801

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)	
05/02/2014	*	---	0	0	0	285	3	0	9	---	112	1,548
05/03/2014	*	---	4	0	0	1,831	0	0	7	388	115	1,289
05/04/2014	*	---	0	0	2	0	0	0	13	---	127	719
05/05/2014	*	---	0	0	82	558	0	285	18	3,024	0	0
05/06/2014	*	---	1	0	96	819	0	0	39	---	0	973
05/07/2014	*	---	0	0	28	288	0	0	30	0	0	279,679
05/08/2014	*	---	0	0	55	773	0	290	62	---	0	463,233
05/09/2014	*	---	1	0	---	784	0	0	0	771	0	139,535
05/10/2014	*	---	0	0	---	1,660	1,147	0	31	---	0	39,053
05/11/2014	*	---	1	0	---	518	574	0	34	1,065	0	18,618
05/12/2014	*	---	0	0	---	266	0	0	7	---	117	4,280
05/13/2014	*	---	0	0	---	1,384	0	0	9	2,336	209	3,848
05/14/2014	*	---	---	1	---	282	573	0	36	---	175	3,370
05/15/2014		---	---	0	---	0	0	162	23	476	155	704
05/16/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		0	7	1	263	9,448	2,297	737	318	8,060	1,010	956,849
# Days:		0	12	14	7	14	14	14	14	7	14	14
Average:		0	1	0	38	675	164	53	23	1,151	72	68,346
YTD		0	17	2	332	21,495	2,621	737	1,715	13,027	1,428	1,717,930

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)	
05/02/2014	*	---	0	0	3	1,140	0	0	20	---	5,923	11,709
05/03/2014	*	---	0	0	4	1,831	1,252	309	52	5,814	6,619	11,386
05/04/2014	*	---	0	0	15	2,525	1,466	0	68	---	9,993	16,620
05/05/2014	*	---	0	0	79	1,394	1,802	570	67	3,024	14,082	19,366
05/06/2014	*	---	0	0	13	2,732	598	0	67	---	13,084	16,028
05/07/2014	*	---	0	0	3	2,306	4,145	1,706	85	6,330	10,949	30,291
05/08/2014	*	---	0	0	53	3,608	2,870	1,161	183	---	6,338	34,463
05/09/2014	*	---	0	0	---	5,227	2,868	0	56	9,254	9,463	19,160
05/10/2014	*	---	0	0	---	2,214	5,163	613	393	---	4,115	14,059
05/11/2014	*	---	0	0	---	1,036	1,147	584	459	14,202	4,568	17,335
05/12/2014	*	---	0	0	---	2,131	1,148	0	485	---	4,808	17,119
05/13/2014	*	---	0	0	---	277	1,148	0	676	10,512	6,363	13,853
05/14/2014	*	---	0	0	---	282	1,720	169	1,099	---	2,577	14,111
05/15/2014		---	0	0	---	0	287	162	1,659	1,427	1,010	15,024
05/16/2014		---	0	0	---	---	---	---	---	---	---	---
Total:		0	0	0	170	26,703	25,614	5,274	5,369	50,563	99,892	250,524
# Days:		0	12	14	7	14	14	14	14	7	14	14
Average:		0	0	0	24	1,907	1,830	377	384	7,223	7,135	17,895
YTD		0	0	0	267	32,167	26,484	5,664	5,514	65,708	111,474	435,731

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)	
05/02/2014	*	---	970	6	596	74,461	76,961	107,020	76	---	35,320	11,931
05/03/2014	*	---	2,165	14	417	62,560	67,293	76,023	134	57,036	39,665	19,547
05/04/2014	*	---	3,512	91	366	89,774	75,071	47,573	214	---	35,675	17,101
05/05/2014	*	---	2,361	65	2,543	41,273	119,206	46,197	408	61,375	53,413	11,259
05/06/2014	*	---	1,530	117	169	128,934	120,237	58,655	566	---	60,525	29,630
05/07/2014	*	---	990	147	67	136,035	131,467	58,842	748	51,049	74,874	40,755
05/08/2014	*	---	753	84	171	146,136	130,242	53,113	966	---	65,230	42,070
05/09/2014	*	---	523	49	---	104,330	103,262	62,293	307	23,538	83,017	17,196
05/10/2014	*	---	810	88	---	101,272	81,473	34,012	1,719	---	50,248	7,290
05/11/2014	*	---	844	305	---	50,265	65,969	43,496	1,615	44,737	39,682	21,390
05/12/2014	*	---	598	277	---	31,164	57,380	26,235	1,501	---	29,446	17,833
05/13/2014	*	---	819	140	---	23,528	42,518	26,807	1,386	65,762	24,710	7,696
05/14/2014	*	---	---	65	---	23,949	21,212	19,487	1,092	---	35,054	7,955
05/15/2014		---	---	84	---	22,451	18,363	14,132	986	11,898	22,514	11,031
05/16/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		0	15,875	1,532	4,329	1,036,132	1,110,654	673,885	11,718	315,395	649,373	262,684
# Days:		0	12	14	7	14	14	14	14	7	14	14
Average:		0	1,323	109	618	74,009	79,332	48,135	837	45,056	46,384	18,763
YTD		2,080	34,406	3,153	12,842	2,564,612	1,414,443	862,200	12,477	520,872	815,596	313,444

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)	
05/02/2014	*	---	0	0	0	2,849	2,870	5,985	44	---	783	663
05/03/2014	*	---	0	0	0	5,188	3,443	3,706	359	9,302	819	1,289
05/04/2014	*	---	0	0	0	7,575	4,402	2,955	498	---	764	245
05/05/2014	*	---	0	0	0	15,059	3,303	2,279	178	12,961	1,135	902
05/06/2014	*	---	0	0	0	10,653	5,982	2,973	120	---	1,977	1,457
05/07/2014	*	---	0	0	0	11,817	4,748	2,274	208	28,290	1,184	553
05/08/2014	*	---	0	0	0	1,804	5,734	871	462	---	3,067	1,344
05/09/2014	*	---	0	0	---	1,829	6,320	3,912	170	47,441	3,291	1,475
05/10/2014	*	---	0	0	---	553	9,771	3,064	996	---	6,930	3,124
05/11/2014	*	---	0	0	---	777	588	2,919	1,122	128,610	8,420	4,125
05/12/2014	*	---	0	0	---	0	3,451	1,235	761	---	8,710	6,063
05/13/2014	*	---	0	0	---	0	1,155	1,615	519	209,090	6,653	5,772
05/14/2014	*	---	0	0	---	845	582	1,011	1,629	---	5,436	8,950
05/15/2014		---	0	0	---	561	574	1,137	1,445	94,272	6,705	8,214
05/16/2014		---	0	0	---	---	---	---	---	---	---	---
Total:		0	0	0	0	59,510	52,923	35,936	8,511	529,966	55,874	44,176
# Days:		0	12	14	7	14	14	14	14	7	14	14
Average:		0	0	0	0	4,251	3,780	2,567	608	75,709	3,991	3,155
YTD		0	0	0	0	142,770	61,379	40,128	21,096	653,566	67,192	65,216

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)	
05/02/2014	*	---	0	0	0	0	200	0	---	67	0	
05/03/2014	*	---	0	0	0	0	0	0	200	210	0	
05/04/2014	*	---	0	0	0	0	200	0	---	0	0	
05/05/2014	*	---	0	0	0	0	1	200	0	77	67	
05/06/2014	*	---	1	0	0	0	200	0	---	100	0	
05/07/2014	*	---	0	0	0	0	0	0	0	0	0	
05/08/2014	*	---	0	0	0	0	0	0	---	143	0	
05/09/2014	*	---	0	0	---	2	0	0	1	0	0	
05/10/2014	*	---	0	0	---	2	0	0	---	0	0	
05/11/2014	*	---	0	0	---	2	800	0	0	0	0	
05/12/2014	*	---	0	0	---	1	0	0	---	0	0	
05/13/2014	*	---	0	0	---	53	0	200	0	210	0	
05/14/2014	*	---	0	0	---	0	0	0	---	50	0	
05/15/2014		---	0	0	---	0	0	0	0	150	0	
05/16/2014		---	0	0	---	---	---	---	---	---	---	
Total:		0	1	0	0	60	1,001	800	1	200	1,007	67
# Days:		0	12	14	7	14	14	14	7	14	14	14
Average:		0	0	0	0	4	72	57	0	29	72	5
YTD		1	1	0	0	60	1,163	817	6	2,530	12,359	11,768

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:

5/16/14 7:34 AM

05/02/14 TO 05/16/14

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	6,800	1,561,594	19,600	754,306	42,400	2,384,700
	Sum of NumberBarged	6,782	1,568,152	19,715	753,189	42,723	2,390,561
	Sum of NumberBypassed	29	7,396	0	17,219	0	24,644
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	4	54	0	19	5	82
	Sum of FacilityMorts	12	1,105	5	48	350	1,520
	Sum of ResearchMorts	0	25	0	80	0	105
	Sum of TotalProjectMorts	16	1,184	5	147	355	1,707
LGS	Sum of NumberCollected	1,602	1,382,022	17,602	759,355	36,257	2,196,838
	Sum of NumberBarged	1,596	1,381,825	17,600	759,310	36,093	2,196,424
	Sum of NumberBypassed	4	0	0	0	0	4
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	9	0	2	5	16
	Sum of FacilityMorts	2	188	2	43	159	394
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2	197	2	45	164	410
LMN	Sum of NumberCollected	500	783,961	3,600	443,339	23,500	1,254,900
	Sum of NumberBarged	499	800,826	3,600	464,107	23,248	1,292,280
	Sum of NumberBypassed	1	161	0	139	0	301
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	8	0	2	1	11
	Sum of FacilityMorts	0	566	0	91	251	908
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	574	0	93	252	919
Total Sum of NumberCollected		8,902	3,727,577	40,802	1,957,000	102,157	5,836,438
Total Sum of NumberBarged		8,877	3,750,803	40,915	1,976,606	102,064	5,879,265
Total Sum of NumberBypassed		34	7,557	0	17,358	0	24,949
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		4	71	0	23	11	109
Total Sum of FacilityMorts		14	1,859	7	182	760	2,822
Total Sum of ResearchMorts		0	25	0	80	0	105
Total Sum of TotalProjectMorts		18	1,955	7	285	771	3,036

YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/16/14 7:34 AM

TO: 05/16/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	15,400	3,084,839	23,470	103,050	1,827,021	5,053,780
	Sum of NumberBarged	6,810	1,588,580	19,743	43,006	766,611	2,424,750
	Sum of NumberBypassed	8,551	1,494,965	3,722	59,638	1,060,232	2,627,108
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	27	121	0	42	43	233
	Sum of FacilityMorts	12	1,131	5	364	51	1,563
	Sum of ResearchMorts	0	42	0	0	84	126
	Sum of TotalProjectMorts	39	1,294	5	406	178	1,922
LGS	Sum of NumberCollected	1,828	1,562,582	18,202	42,171	969,855	2,594,638
	Sum of NumberBarged	1,596	1,381,825	17,600	36,093	759,310	2,196,424
	Sum of NumberBypassed	229	180,543	600	5,910	210,493	397,775
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	15	0	9	4	28
	Sum of FacilityMorts	3	199	2	159	48	411
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3	214	2	168	52	439
LMN	Sum of NumberCollected	500	978,402	3,800	26,068	553,960	1,562,730
	Sum of NumberBarged	499	800,826	3,600	23,248	464,107	1,292,280
	Sum of NumberBypassed	1	176,985	0	2,568	89,747	269,301
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	18	0	1	12	31
	Sum of FacilityMorts	0	569	0	251	92	912
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	587	0	252	104	943
Total Sum of NumberCollected		17,728	5,625,823	45,472	171,289	3,350,836	9,211,148
Total Sum of NumberBarged		8,905	3,771,231	40,943	102,347	1,990,028	5,913,454
Total Sum of NumberBypassed		8,781	1,852,493	4,322	68,116	1,360,472	3,294,184
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		27	154	0	52	59	292
Total Sum of FacilityMorts		15	1,899	7	774	191	2,886
Total Sum of ResearchMorts		0	42	0	0	84	126
Total Sum of TotalProjectMorts		42	2,095	7	826	334	3,304

Cumulative Adult Passage at Mainstem Dams Through: 05/15

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	05/15	155557	16686	68022	25736	107687	13617	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/15	112859	11868	52948	22840	74063	9742	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/15	94754	9626	41685	18916	61118	8131	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/15	76325	5595	34859	12326	49045	4955	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/15	55326	3556	25927	8797	32030	2887	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/15	50762	3031	22757	6813	26915	1873	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/15	43372	2276	18689	5693	19416	1442	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/15	37679	1237	16449	4167	17949	1117	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/14	12231	243	4358	218	5756	88	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	05/13	4744	24	2627	130	3269	54	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/13	2183	11	865	66	933	10	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/14	1106	7	339	31	450	12	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/14	8653	131	14856	588	19446	270	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2014		2013		10-Yr Avg.		2014	2013	10-Yr Avg.	2014	2013	10-Yr Avg.	Wild 2014	Wild 2013	10-Yr Avg.	2014	2013	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	05/15	5	-2	0	0	0	0	9	0	0	4528	2914	4299	1259	835	1155	13	340	65
TDA	05/15	0	0	0	0	0	0	0	0	0	580	738	2313	176	340	885	0	0	0
JDA	05/15	0	1	0	0	0	0	4	0	0	2887	848	4706	1108	459	1562	20	11	18
MCN	05/15	0	0	1	0	1	0	0	0	0	646	1396	5413	334	687	1844	8	21	2
IHR	05/15	0	0	0	0	0	0	0	0	0	1622	3802	4563	764	1505	1367	2	8	0
LMN	05/15	0	0	0	0	0	0	1	0	0	1456	2435	6687	919	1367	2826	0	1	0
LGS	05/15	0	0	0	0	0	0	0	0	0	1440	2177	6703	966	1167	2311	0	1	0
LGR	05/15	0	0	0	0	0	0	0	0	0	7381	7401	8736	3404	3210	3109	0	1	0
PRD	05/14	0	0	0	0	0	0	2	0	0	100	41	35	0	0	0	0	2	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	05/13	0	0	0	0	0	0	0	0	0	250	71	78	134	50	45	0	0	0
RRH	05/13	0	0	0	0	0	0	0	0	0	229	134	314	146	111	237	0	0	0
WEL	05/14	0	0	0	0	0	0	0	0	0	92	40	44	57	34	32	0	0	2
WFA	05/14	9	0	2	0	0	0	0	0	0	7846	8289	10969	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.