



# Fish Passage Center

## Weekly Report #14 - 8

May 9, 2014

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### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 57% and 187% of average at individual sub-basins over May. Precipitation above The Dalles has been 108% of average over May. Over the 2014 water year, precipitation has ranged between 81% and 100% of average.

**Table 1.** Summary of May precipitation and cumulative October through May 8, 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 1–8, 2014		October 1, 2013 to	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.09	127	24.6	94
Snake River Above Ice Harbor	0.51	85	14.0	85
Columbia Above The Dalles	0.69	108	17.3	86
Kootenai	1.20	134	26.2	100
Clark Fork	0.46	57	16.1	85
Flathead	0.69	73	25.0	100
Pend Oreille River Basin above Waneta Dam	0.62	71	21.0	91
Salmon River Basin	0.58	76	16.7	81
Upper Snake Tributaries	0.76	101	18.6	95
Clearwater	0.82	81	29.6	97
Willamette River above Portland	1.90	187	47.2	85

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 137% of average. For Snake River Basins the average snowpack is 101% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 63% of average.

Table 2 displays the May 8<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The May 8<sup>th</sup> ESP forecast at The Dalles between January and July is 109,558 Kaf (108% of average).

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

Location	May 8, 2014 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	108	109558
Grand Coulee (Jan–July)	110	65304
Libby Res. Inflow, MT (Apr–Aug)	119	7010 6996*
Hungry Horse Res. Inflow, MT (Jan–July)	118	2475
Lower Granite Res. Inflow (Apr–July)	111	22017
Brownlee Res. Inflow (Apr–July)	65	3531
Dworshak Res. Inflow (Apr–July)	139	3356 3183*

\* Denotes COE May Forecast

Grand Coulee Reservoir is at 1233.6 feet (5-8-14) and has refilled 1.5 feet over the last week. Outflows at Grand Coulee have ranged between 147.7 and 165.8 Kcfs over the last week.

The Libby Reservoir is at elevation 2386.4 feet (5-7-14) and has held steady over the previous week. Daily average outflows at Libby Dam have been reduced from 24.3 to 16.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3497.8 feet (5-7-14) and has refilled 3.2 feet over the previous week. Outflows at Hungry Horse have been 8.5 Kcfs over the last week.

Dworshak is currently at an elevation of 1507.1 feet (5-8-14) and has refilled 15.7 feet over the previous week. Outflows from Dworshak began the week at 10.7 Kcfs and have been reduced to 2.4 Kcfs.

The Brownlee Reservoir was at an elevation of 2057.0 feet on May 8<sup>th</sup>, 2014, refilling 1.7 feet over the last week. Inflows to Brownlee Dam have ranged between 13.9 and 14.6 Kcfs last week.

The Biological Opinion flow period began on April 3<sup>rd</sup> 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 89.9 Kcfs over the last week and 77.3 Kcfs between April 3 and May 8, 2014.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (which began April 10<sup>th</sup>) and 135 Kcfs at Priest Rapids Dam (which began April 10<sup>th</sup>). Flows at McNary Dam averaged 287.2 Kcfs over the last week and 260.2 over the spring period. Flows at Priest Rapids Dam have averaged 188.1 Kcfs over the last week and 167.7 Kcfs over the spring period.

### Spill

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

All of the lower Snake River projects have spilled at or above the 2014 Fish Operations Plan (FOP) levels. Excess generation spill occurred during some periods at Lower Granite and Little Goose dams earlier in the week. At Lower Monumental Dam the spill cap was reduced by 2 Kcfs on May 3<sup>rd</sup> 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, no excess generation spill has occurred at the project. On April 28<sup>th</sup> 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.

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 the 40% due to limited hydraulic capacity and excess generation spill; John Day Dam spilled close to the objectives; The Dalles Dam spilled much less than the 40% objective due to the reduction of spill to meet the 115% TDG criteria at the Bonneville Dam forebay; and Bonneville Dam spilled at or above the 100 Kcfs.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	<b>Pre-test:</b> 30%/30% <b>Testing:</b> 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 Lower Monumental Dam were observed with signs of GBT on 05/03 and 05/05. At Rock Island Dam 2% of fish were detected with signs on 05/08. 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 21<sup>st</sup> sample and sampling at the Snake River Trap (LEW) was terminated after the May 8<sup>th</sup> sample.

This week's samples at Bonneville Dam (BON) were dominated by subyearling Chinook juveniles. On the morning of May 6<sup>th</sup>, Spring Creek NFH released about 4.6 million subyearling fall Chinook tules into Bonneville pool. According to SMP personnel at BON, these subyearling Chinook tules began arriving at BON at about 0015 on Wednesday, May 7<sup>th</sup>. The passage indices for subyearling Chinook on May 7<sup>th</sup> and 8<sup>th</sup> were about 280,000 and 463,000, respectively. Overall, the daily average passage index for subyearling Chinook at BON this week was nearly 107,000 per day. Passage of subyearling Chinook at BON is expected to decrease substantially over the next few days as this hatchery release continues to pass. Passage of yearling Chinook and steelhead at BON also increased this week, when compared to last week. This week's daily average passage indices for yearling Chinook and steelhead were about 65,000 and 25,000 per day, respectively. Last week's daily average passage indices for these two species were about 45,000 and 4,500 per day,

respectively. Coho and sockeye passage also increased this week, when compared to last week. The daily average passage indices for these two species were about 20,000 and nearly 1,000 per day, respectively. So far, no Pacific lamprey ammocoetes have been sampled at BON. Pacific lamprey macrophthalmia were encountered in only one of this week's samples (May 5<sup>th</sup>).

Yearling Chinook continued to dominate the collections at John Day (JDA) this week. In fact yearling Chinook passage increased again this week, when compared to the previous week. This week's daily average passage index for yearling Chinook at JDA was about 88,000 per day. Last week's daily average passage index was about 39,000 per day. Passage of coho, steelhead, and sockeye also increased this week. This week's daily average passage indices for these three species were about 9,600, 52,000, and 1,420 per day, respectively. Last week's daily average passage indices for these three species were about 1,600, 16,750, and 1,200 per day, respectively. Passage of subyearling Chinook remained relatively low this week. Pacific lamprey ammocoetes were encountered in only one of this week's samples (May 3<sup>rd</sup>) while Pacific lamprey macrophthalmia were encountered in five 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 this week, when compared to last week. This week's daily average passage index for yearling Chinook at MCN was about 121,000 per day. Last week's daily average passage index for yearling Chinook at MCN was about 68,500 per day. Steelhead, coho, and subyearling Chinook passage also increased this week when compared to last week. This week's daily average passage indices for these three species were about 56,500, 5,050, and 1,140 per day, respectively. So far, all subyearling Chinook collected at MCN this season have been fry. This week's daily average passage index for sockeye at MCN was nearly 17,000 per day, which is a decrease from last week's daily average passage index of about 23,300 per day. Finally, only Pacific lamprey macrophthalmia have been collected so far this year. The daily average collection of Pacific macrophthalmia this week was about 130 per day.

As with previous weeks, this week's samples at Lower Granite Dam were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook at LGR was nearly 230,000 per day, which is an increase over last week's daily average passage index of about 150,000 per day. Overall, steelhead passage decreased this week, when compared to last week. The daily average passage index for steelhead this week was about 97,000 per day. Last week's daily average passage index for steelhead was about 128,000 per day. However, it appears that steelhead passage at LGR has increased over the last three days, when compared to the May 1–May 5 period. Sockeye and coho passage at LGR increased this week. This week's daily average passage indices for these two species were about 7,850 and about 2,200 per day, respectively. Passage of subyearling Chinook fry increased this week. No lamprey juveniles have been sampled at Lower Granite Dam this year.

With the start of collections for transportation on May 1<sup>st</sup>, this was the first week of full sampling at Little Goose Dam (LGS) for the 2014 season. This week's samples at LGS were dominated by yearling Chinook and steelhead. This week's daily average passage indices for these two species were about 160,000 and 103,000 per day, respectively. Sockeye and coho juveniles passed in lower numbers, with daily average passage indices of about 4,350 and 1,700 per day, respectively. Finally, only Pacific lamprey macrophthalmia have been collected so far this year at LGS. Pacific macrophthalmia were encountered in two of this week's samples.

As with Little Goose Dam, this was the first week of full sampling at Lower Monumental Dam (LMN) for the 2014 season. This week's samples at LMN were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was about 128,400 per day. The second most dominant species in this week's sample was steelhead, with a daily average passage index of about 66,000 per day. Sockeye and coho juveniles passed in relatively lower numbers, with daily average passage indices of about 3,400 and 430 per day, respectively. Finally, only Pacific lamprey macrophthalmia have been collected so far this year at LMN. Pacific macrophthalmia were encountered in three of this week's samples at LMN.

Yearling Chinook dominated this week's samples at Rock Island Dam (RIS). This week's daily average passage index for yearling Chinook at RIS was about 1,050 per day, which is an increase over last week's daily average of about 375 per day. Passage of sockeye remained relatively similar to last week. This week's daily average passage index for sockeye at RIS was about 270 per day. Steelhead passage increased this week when compared to last week. This week's daily average passage index for steelhead at RIS was about 450 per day. Coho and subyearling Chinook passage at RIS remained relatively low this week. All subyearling Chinook juveniles that were sampled this week were fry. Finally, no lamprey juveniles were sampled at RIS this week.

The Grande Ronde Trap (GRN) is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer 2 in the Grande Ronde River. Yearling Chinook continued to dominate the collections this week with a daily average collection of just over 200 per day. This week's daily average collection is a decrease over the previous week's daily average collection of about 580 per day. For the past week, about 61%–74% of the daily yearling Chinook collection was of known hatchery origin. Steelhead collections at GRN this week were very similar to the previous week, with a daily average collection of about 75 per day.

The Snake River Trap (LEW) is located at river kilometer 225 and operated by Idaho Department of Fish and Game. Collections of yearling Chinook increased this week, when compared to last week. This week's daily average collection for yearling Chinook was nearly 800 per day. Last week's daily average collection for yearling Chinook was about 180 per day. On average, daily steelhead collections this week were similar to last week. However, a large number (2,543) of steelhead were collected in the May 5<sup>th</sup> sample. Collections of coho and subyearling Chinook also increased this week when compared to last week. Most of the subyearling Chinook that were sampled this week were fry. Due to a higher than usual sampling efficiency and, thus, increased sample counts at this trap, sampling at the Snake River Trap for 2014 was terminated after the May 8<sup>th</sup> sample.



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 3<sup>rd</sup>. For the period of April 28–May 3, the average daily collection for yearling Chinook was about 180 per day, which is a decrease from the previous week's daily average collection of about 320 per day. Steelhead collections over the April 28–May 3 period increased when compared to the previous 7-day period. The daily average collection for steelhead for the period of April 28–May 3 was nearly 1,000 per day. Approximately 75% of the steelhead collected over the period of April 28–May 3 were clipped.

### 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 276,000 sockeye juveniles were scheduled to be released into Redfish Lake Creek this week. The only other releases that were scheduled for this week were of summer steelhead. In all, about 280,000 summer steelhead were scheduled for release this week. Of these, about 57% were scheduled for release into the Grande Ronde River and 43% were scheduled for release into the Wallowa River.

Approximately 3.27 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 58% are scheduled to be released into the Snake River, 30% are scheduled to be released into the Clearwater River and its tributaries, and 12% 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 15% 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. Approximately 100,000 summer steelhead were scheduled to be released into the Methow River this week. This steelhead release was the only new release that was scheduled for this zone this week.

Four releases of subyearling fall Chinook juveniles are scheduled for this zone over the next 2 weeks. Two of these four releases are Yakama Tribal releases to the Yakima River that are expected to total about 567,000 fall Chinook juveniles. The other two releases are part of the WDFW Cooperative Program and are expected to total about 19,150 fall Chinook juveniles. The vast majority (99%) of these fall Chinook juveniles are scheduled to be released into the Yakima River, with just a small proportion (1%) scheduled for release into the Wenatchee River. In addition, about 904,000 subyearling summer Chinook juveniles are scheduled for release to this zone over the next 2 weeks. Of these, about 80% are scheduled to be released directly to the Mid-Columbia River while the remaining 20% are scheduled to be released into the Okanogan River. About 185,000 summer steelhead are scheduled for release into this zone over the next 2 weeks. Of these, about 86% are scheduled to be released directly into the Mid-Columbia River while 14% are scheduled to be released into the Okanogan River. Finally, several volitional releases of yearling spring Chinook, yearling and subyearling summer Chinook, and summer steelhead that began in March and April are scheduled to end over the next 2 weeks.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. On May 6<sup>th</sup>, Spring Creek NFH released about 4.6 million subyearling fall Chinook tules into Bonneville Pool. This was the second and final release of fall Chinook tules from Spring Creek NFH this year. This was the only new release that was scheduled for this zone this week.

Approximately 600,000 subyearling fall Chinook juveniles are scheduled to be released into the Umatilla River, on or around May 14<sup>th</sup>. Approximately 240,000 yearling spring Chinook juveniles are scheduled to be

released into the Deschutes River, on or around May 11<sup>th</sup>. Finally, about 12,500 winter steelhead juveniles are scheduled for release into Hood River in mid-May.

### Adult Passage

Adult counts at Bonneville Dam have been updated through May 8<sup>th</sup>. Last week, daily adult spring Chinook counts at Bonneville Dam ranged from 4,259 to 9,846 adult salmon per day. As of May 8<sup>th</sup>, a total of 134,527 adult spring Chinook have been counted at Bonneville Dam. In 2013, 58,147 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2014 adult spring Chinook count at Bonneville Dam is about 230% of the 2013 count and 160% of the 10-year average count of 82,441. The 2014 spring Chinook jack count of 7,978 is 50% of the 2013 spring Chinook jack count of 15,847, while being 144% of the 10-year average count of 5,547. At Willamette Falls, 4,717 adult spring Chinook have been counted so far this year. In 2013, 8,341 adult spring Chinook were counted at Willamette Falls. This year's count is about 57% of the 2013 count and 46% of the 10-year average count of 10,362. As of May 8<sup>th</sup>, a total of 91,807 adult spring Chinook have been counted at The Dalles Dam and 51,892 have been counted at McNary Dam. The Dalles Dam 2014 adult spring Chinook count is 222% of the 2013 count and 177% of the 10-year average count. The 2014 McNary Dam adult spring Chinook count is 255% of the 2013 count, and 177% of the 10-year average count.

The 2014 Bonneville Dam adult steelhead count of 4,212 is 151% of the 2013 count of 2,785 and 108% of the 10-year average count of 3,908. The 2014 Bonneville Dam adult wild steelhead count of 1,225 is 148% of the 2013 count of 827 and 113% of the 10-year average count of 1,080. 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 12 to 36 adults per day last week. This year's Lower Granite steelhead count of 7,272 has 59 fewer fish than the 2013 count of 7,331 and is about 84% of the 10-year average count of 8,627. The 2014 Lower Granite Dam adult wild steelhead count of 3,333

has 167 more fish than the 2013 count of 3,166 and is about 110% of than the 10-year average count of 3,032. At Willamette Falls, the 2014 count for steelhead was 6,215 as of May 2<sup>nd</sup>. This year's steelhead count is about 87% of the 2013 count of 7,157 and about 72% of the 10-year average count of 8,610.

### *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.

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. Visual observations of the retrofit 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.

Grant County has also modified their Off Ladder Adult Fish Trap (OLAFT) at Priest Rapids Dam and has begun a Trap and Haul operation at Priest Rapids. Two hundred hatchery Chinook traveling through the trap are scheduled to be PIT-tagged and fifty additional hatchery Chinook will be acoustic-tagged; these fish will be returned to the ladder to migrate through the Priest Rapids reservoir and through the Wanapum project. This operation was delayed this week as adult fish were passing the Priest Rapids count station but not passing the OLAFT upstream of the count station. It was estimated that somewhere between 1,000 and 1,300 adult fish were holding up in the left bank fishway at Priest Rapids Dam. As a result, OLAFT operations were suspended beginning on Monday (5-5-14) evening and continuing through Friday (5-9-14). Based on observations seen at Wanapum Dam on Wednesday morning, the suspension of OLAFT operations was successful in moving adult fish through the left bank fishway at Priest Rapids dam. As a result of the delays caused by the OLAFT, the right bank fish ladder at Priest Rapids is now operating at full ladder criteria, to provide an additional route of passage around Priest Rapids Dam.

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

<b>Hatchery Release Summary</b>									
<b>From:</b>	<b>4/25/2014</b>		<b>to</b>		<b>05/08/14</b>				
<b>Agency</b>	<b>Hatchery</b>	<b>Species</b>	<b>Race</b>	<b>MigYr</b>	<b>NumRel</b>	<b>RelStart</b>	<b>RelEnd</b>	<b>RelSite</b>	<b>RelRiver</b>
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	CH1	SP	2014	193,000	04-29-14	04-29-14	Yankee Fk (Salmon R)	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)
<b>Idaho Dept. of Fish and Game Total</b>					<b>469,320</b>				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	50,000	04-30-14	04-30-14	Big Sheep Creek	Imnaha River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	120,000	05-04-14	05-04-14	Wallowa Acclim Pond Big Canyon Acclim.Pd	Wallowa River
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	160,000	05-08-14	05-08-14	(Grande Ronde)	Grande Ronde River
Oregon Dept. of Fish and Wildlife <b>Oregon Dept. of Fish and Wildlife Total</b>	Irrigon Hatchery Complex	ST	SU	2014	165,000	04-30-14	04-30-14	Little Sheep Creek	Imnaha River
					<b>495,000</b>				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2014	61,500	04-28-14	04-30-14	East Fk Salmon River	Salmon River (ID)
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	CH1	SP	2014	560,000	04-15-14	04-30-14	Winthrop Hatchery	Methow River
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
<b>U.S. Fish and Wildlife Service Total</b>					<b>5,369,322</b>				
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2014	25,000	04-30-14	04-30-14	E Fk Irrig Dist Sand Trap	Hood River
Warm Springs Tribe	Parkdale Acclim. Pond	ST	WI	2014	12,500	04-30-14	04-30-14	Parkdale Acclim Pond	Hood River
<b>Warm Springs Tribe Total</b>					<b>37,500</b>				
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	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	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	Lyons Ferry Hatchery	ST	SU	2014	210,000	04-08-14	04-30-14	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2014	49,162	04-15-14	04-30-14	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2014	50,000	04-10-14	04-30-14	Twisp Acclim Pond	Methow 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	Tucannon Hatchery	ST	SU	2014	50,000	04-20-14	04-30-14	Tucannon River	Tucannon 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 <b>Washington Dept. of Fish and Wildlife Total</b>	Wells Hatchery	ST	SU	2014	80,000	04-25-14	05-10-14	Okanogan River	Okanogan River
					<b>1,298,262</b>				



### Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	4/25/2014		to		05/08/14				
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	Klickitat Hatchery	CO	NO	2014	926,000	05-01-14	05-01-14	Klickitat Hatchery	Klickitat River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2014	22,000	04-29-14	04-29-14	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2014	1,700,000	04-26-14	04-26-14	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
<b>Yakama Tribe Total</b>					<b>5,251,173</b>				
<b>Grand Total</b>					<b>12,920,577</b>				

### Hatchery Releases Next Two Weeks

<b>Hatchery Release Summary</b>									
<b>From:</b>	<b>5/9/2014</b>		<b>to</b>		<b>5/22/2014</b>				
<b>Agency</b>	<b>Hatchery</b>	<b>Species</b>	<b>Race</b>	<b>MigYr</b>	<b>NumRel</b>	<b>RelStart</b>	<b>RelEnd</b>	<b>RelSite</b>	<b>RelRiver</b>
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
<b>Colville Tribe Total</b>					<b>420,000</b>				
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	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH0	FA	2014	500,000	05-22-14	05-22-14	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	470,000	05-14-14	05-14-14	Lapwai Creek	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>1,870,000</b>				
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	Round Butte Hatchery	CH1	SP	2014	240,000	05-11-14	05-11-14	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,640,000</b>				
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
<b>U.S. Fish and Wildlife Service Total</b>					<b>149,000</b>				
Umatilla Tribe	Bonneville Hatchery	CH0	FA	2014	600,000	05-14-14	05-14-14	Umatilla River	Umatilla River
<b>Umatilla Tribe Total</b>					<b>600,000</b>				
Warm Springs Tribe	Parkdale Acclim. Pond	ST	WI	2014	12,500	05-14-14	05-14-14	Parkdale Acclim Pond	Hood River
<b>Warm Springs Tribe Total</b>					<b>12,500</b>				
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	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	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	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	Wells Hatchery	ST	SU	2014	160,000	05-20-14	05-25-14	Wells Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>1,513,250</b>				

### Hatchery Releases Next Two Weeks

<b>Hatchery Release Summary</b>									
<b>From:</b>	<b>5/9/2014 to 5/22/2014</b>								
<b>Agency</b>	<b>Hatchery</b>	<b>Species</b>	<b>Race</b>	<b>MigYr</b>	<b>NumRel</b>	<b>RelStart</b>	<b>RelEnd</b>	<b>RelSite</b>	<b>RelRiver</b>
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
<b>Yakama Tribe Total</b>					<b>3,170,173</b>				
<b>Grand Total</b>					<b>9,374,923</b>				

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
04/25/2014	154.4	7.3	160.1	15.3	167.8	25.2	154.8	3.2	155.2	44.7	156.0	36.7	159.7	45.9
04/26/2014	154.7	0.0	151.0	15.1	162.5	25.3	162.0	0.0	166.4	24.6	168.4	59.1	179.9	65.1
04/27/2014	152.0	0.0	156.2	15.1	163.6	16.0	156.3	0.0	162.5	24.2	159.4	53.3	169.0	60.1
04/28/2014	154.9	0.0	147.9	15.0	160.5	12.8	162.6	0.0	170.1	26.2	168.8	64.2	184.0	62.7
04/29/2014	158.8	0.0	160.0	15.2	167.0	17.8	162.4	0.0	168.1	25.4	166.0	60.1	171.8	48.5
04/30/2014	154.8	4.0	159.6	21.4	167.9	18.7	160.1	0.0	165.6	28.1	164.6	56.8	175.0	57.6
05/01/2014	158.1	8.2	157.0	23.4	170.4	20.0	170.3	7.6	171.5	28.0	173.5	57.6	188.0	70.5
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

**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	Flow	Spill
04/25/2014	10.7	0.0	15.5	17.1	83.1	22.8	81.3	25.6	83.0	29.1	85.9	58.9		
04/26/2014	10.7	0.0	15.5	15.4	82.0	20.5	78.7	23.7	78.3	28.0	80.8	55.6		
04/27/2014	10.7	0.0	15.7	13.9	79.5	30.7	61.8	28.9	63.8	28.9	66.8	54.3		
04/28/2014	10.7	0.0	16.2	16.4	73.7	23.8	76.7	26.2	79.4	30.0	81.7	31.4		
04/29/2014	10.7	0.0	15.9	12.2	71.3	20.5	79.4	23.8	79.4	30.0	81.2	24.4		
04/30/2014	10.7	0.0	15.7	14.8	65.7	20.5	67.3	20.0	68.8	29.9	71.8	43.7		
05/01/2014	10.7	0.0	14.9	19.0	66.4	20.4	65.4	19.6	64.2	29.9	65.3	51.6		
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		

**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	PH1	PH2
04/25/2014	264.5	147.6	271.4	110.0	254.1	130.6	270.0	100.8	77.0	79.8
04/26/2014	265.7	150.3	268.9	105.4	254.1	122.6	272.9	101.2	81.3	78.0
04/27/2014	263.5	115.0	256.1	89.0	245.1	101.6	276.6	106.7	77.0	80.5
04/28/2014	258.9	108.2	268.0	82.7	249.7	99.9	291.9	100.3	84.7	94.5
04/29/2014	282.8	133.7	290.6	87.2	276.3	110.6	276.0	101.0	83.9	78.7
04/30/2014	264.2	120.9	261.3	87.1	244.8	103.0	279.2	100.8	81.7	84.3
05/01/2014	252.1	114.7	254.4	102.1	239.0	95.7	273.1	100.1	81.9	78.7
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



## 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
<b>Lower Granite Dam</b>											
	05/01/14	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
<b>Little Goose Dam</b>											
	04/26/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/01/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	04/25/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/29/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	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
<b>McNary Dam</b>											
	04/28/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	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
<b>Bonneville Dam</b>											
	04/26/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/29/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	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
<b>Rock Island Dam</b>											
	04/29/14	Chinook + Steelhead	100	3	3	3.00%	0.00%	2	1	0	0
	05/01/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/08/14	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0

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

### Total Dissolved Gas Saturation Data at Upper Columbia River Sites

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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/25	114.9	115.0	115.1	24	---	---	---	0	108.1	108.3	109.0	24	116.1	116.6	116.7	24	114.2	114.4	114.8	24
4/26	114.9	114.9	115.2	24	---	---	---	0	108.3	108.4	108.6	24	108.9	110.3	114.8	24	114.8	115.1	115.4	24
4/27	114.8	114.9	115.1	24	---	---	---	0	108.0	108.2	108.3	24	106.9	107.2	107.4	24	114.5	115.8	116.1	24
4/28	114.6	114.7	114.7	24	---	---	---	0	106.4	106.7	107.0	24	105.1	105.4	106.1	24	106.1	107.1	108.6	24
4/29	114.4	114.6	114.7	24	---	---	---	0	105.7	106.0	106.3	24	104.1	104.3	104.5	24	104.2	104.4	104.6	24
4/30	114.6	114.7	116.0	24	---	---	---	0	106.3	106.7	106.9	24	106.8	109.6	113.9	24	104.9	105.4	105.7	24
5/1	105.1	111.0	114.5	24	---	---	---	0	107.8	108.6	108.9	24	115.4	116.1	116.5	24	106.2	106.6	106.9	24
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	110.0	110.7	111.0	23	117.4	117.6	118.3	23	116.9	117.1	117.3	17

### 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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/25	111.2	111.5	112.0	24	---	---	---	0	---	---	---	0	113.8	114.0	114.2	24	114.0	114.6	115.7	24
4/26	111.0	111.2	111.4	24	---	---	---	0	---	---	---	0	114.3	114.6	114.6	24	113.9	114.3	114.5	24
4/27	110.8	111.8	112.6	24	---	---	---	0	---	---	---	0	114.2	114.4	114.5	24	114.1	114.3	114.5	24
4/28	107.0	107.3	107.7	24	---	---	---	0	---	---	---	0	111.6	112.5	113.5	24	111.2	111.8	112.8	24
4/29	106.2	106.4	106.6	24	---	---	---	0	---	---	---	0	111.1	111.5	111.8	24	110.9	111.4	111.7	24
4/30	108.2	109.0	109.8	24	---	---	---	0	---	---	---	0	109.5	110.0	110.7	24	109.3	109.8	110.5	23
5/1	109.5	110.3	110.6	24	---	---	---	0	---	---	---	0	110.5	111.1	111.8	22	111.7	113.0	113.8	19
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	112.1	112.2	112.6	18	---	---	---	0	---	---	---	0	115.9	116.5	116.6	21	116.9	118.2	119.2	17

### 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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg		High	hr	Avg	Avg	High
4/25	112.8	113.3	113.8	24	114.6	116.3	120.2	24	114.0	114.6	115.0	24	114.9	116.0	117.8	24	115.4	116.8	117.1	24
4/26	112.9	113.9	114.4	24	114.1	114.8	115.4	24	114.1	114.6	115.1	24	117.8	118.8	119.5	24	114.9	116.8	118.4	24
4/27	113.1	113.4	113.6	24	114.3	114.5	114.8	24	112.1	112.5	112.6	24	115.9	116.7	117.2	24	115.3	116.3	117.6	24
4/28	110.7	111.6	112.0	23	112.7	113.4	115.0	24	111.0	111.6	112.1	24	116.5	117.2	117.8	24	114.5	116.2	117.1	24
4/29	108.6	111.3	112.0	23	111.8	113.7	114.3	24	110.8	111.1	111.4	24	116.4	116.7	117.0	24	115.6	116.3	117.4	24
4/30	110.6	111.7	111.8	23	111.5	112.2	113.8	23	111.9	113.3	113.6	24	116.4	117.7	118.2	24	116.3	117.0	118.7	24
5/1	110.2	110.5	111.4	16	112.0	113.2	114.1	22	112.2	112.5	112.8	24	116.7	118.2	119.5	24	117.6	118.6	120.0	24
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	117.1	117.9	118.9	18	---	---	---	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>Clrwtr-Peck</u>			#	<u>Anatone</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/25	115.5	115.8	116.2	24	---	---	---	0	101.1	101.2	101.6	24	101.4	102.0	102.4	24	102.4	102.6	102.8	24
4/26	116.3	116.9	117.6	24	---	---	---	0	101.1	101.3	101.5	24	101.1	101.5	101.8	24	102.2	102.6	103.0	24
4/27	116.0	116.4	116.9	24	---	---	---	0	101.1	101.4	101.7	24	100.9	101.3	101.6	24	102.0	102.4	103.1	24
4/28	115.6	116.0	116.5	24	---	---	---	0	99.7	99.9	100.0	24	100.5	100.9	101.4	24	101.8	102.6	103.2	24
4/29	115.3	116.5	116.9	24	---	---	---	0	98.8	99.0	99.6	24	100.7	101.8	102.4	24	102.4	103.5	104.9	24
4/30	116.6	117.2	117.7	24	---	---	---	0	99.4	100.0	100.4	24	101.2	102.0	102.7	24	102.9	104.0	104.9	24
5/1	117.9	118.6	119.0	24	---	---	---	0	100.3	100.8	101.2	24	101.4	102.3	103.0	24	103.3	104.3	105.1	24
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	---	---	---	0	---	---	---	0	101.6	102.7	103.6	23	102.0	103.1	103.7	23	104.5	105.4	106.2	23

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-Lewiston</u>			#	<u>Lower Granite</u>			#	<u>L. Granite Tlwr</u>			#	<u>Little Goose</u>			#	<u>L. Goose Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/25	100.1	100.4	100.6	24	101.8	102.0	102.3	24	110.9	111.9	116.7	24	107.8	108.2	108.6	24	112.2	112.7	115.9	24
4/26	100.9	101.2	101.4	24	102.3	102.5	102.7	24	110.0	110.2	110.7	24	108.7	109.0	109.3	24	112.3	112.7	113.0	24
4/27	100.2	100.8	101.3	24	101.9	102.2	102.4	24	113.2	116.1	116.8	24	108.5	108.7	108.9	24	115.2	117.1	118.0	24
4/28	98.7	99.4	99.6	24	100.1	100.4	101.0	24	110.1	111.3	116.0	24	106.1	106.5	107.2	24	114.4	115.6	117.3	24
4/29	99.1	101.0	102.0	24	99.6	100.1	100.6	24	109.4	109.8	110.4	24	104.6	104.8	105.0	24	111.9	112.1	112.3	24
4/30	101.8	103.7	104.9	24	100.9	101.6	102.0	24	110.1	110.8	112.2	24	106.8	108.5	109.5	24	111.8	112.3	112.7	24
5/1	102.7	104.3	105.4	24	103.2	103.9	104.4	24	110.9	111.4	112.1	24	110.4	110.9	111.7	24	113.5	114.0	114.3	24
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	23	104.4	104.8	105.2	23	109.9	110.4	111.0	23	112.0	113.0	113.5	23	113.3	113.8	114.2	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>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
4/25	110.7	110.9	110.9	24	119.6	120.2	120.4	24	113.2	113.6	113.8	24	116.0	116.1	116.3	24	---	---	---	0
4/26	111.2	111.3	111.4	24	118.6	118.8	119.1	24	113.5	113.7	113.8	24	115.9	116.2	116.4	24	---	---	---	0
4/27	111.2	111.4	111.6	24	118.7	118.9	119.6	24	112.9	113.7	114.2	24	115.5	115.9	116.2	24	---	---	---	0
4/28	109.2	109.5	110.3	24	119.4	119.9	120.5	24	110.1	110.3	110.8	24	114.4	115.0	115.6	24	---	---	---	0
4/29	110.2	111.6	112.6	24	120.1	120.4	120.7	24	110.5	111.4	111.9	24	113.9	114.3	114.7	24	---	---	---	0
4/30	113.9	114.3	114.4	24	120.1	120.4	120.8	24	113.3	114.0	114.6	24	115.0	115.6	115.8	24	---	---	---	0
5/1	114.6	114.9	115.1	24	119.8	120.2	120.9	24	116.3	117.5	118.1	24	115.4	115.7	116.0	24	---	---	---	0
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	115.1	115.2	115.6	23	119.5	120.6	121.0	23	115.6	116.0	116.3	23	115.7	116.1	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	<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>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
4/25	109.9	110.8	111.6	24	116.7	117.8	118.0	24	109.6	109.8	110.0	24	118.0	118.1	118.3	24	111.9	112.4	112.6	24
4/26	110.8	111.0	111.2	24	117.3	117.9	118.0	24	108.4	108.7	108.9	24	117.6	118.1	118.3	24	111.3	111.6	112.0	24
4/27	110.0	110.6	111.1	24	114.7	115.3	116.4	24	108.6	108.9	109.1	24	115.5	116.9	118.0	24	110.7	111.7	112.1	24
4/28	107.4	107.9	108.8	24	113.8	114.4	116.2	24	107.3	107.4	107.8	24	114.5	114.9	116.4	24	110.0	110.4	110.9	24
4/29	107.7	108.8	109.7	24	116.2	116.5	116.7	24	107.7	108.3	108.8	24	115.2	115.5	115.9	24	109.8	110.3	110.7	24
4/30	111.3	113.0	113.7	24	115.4	116.6	116.9	24	108.6	108.9	109.2	24	114.9	116.2	117.8	24	110.9	111.5	111.9	24
5/1	114.2	115.5	116.3	24	115.3	115.8	116.6	24	109.3	109.8	110.2	24	116.8	117.5	118.1	24	112.8	113.6	114.0	24
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	113.8	114.1	114.6	23	117.2	117.3	118.2	23	111.7	112.2	112.6	23	115.7	116.4	117.0	23	112.1	112.4	112.6	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>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
4/25	120.9	121.7	122.4	24	115.9	116.4	117.5	24	116.3	116.9	117.3	24	115.4	115.8	116.1	24	118.6	118.7	118.8	24
4/26	119.2	119.8	120.2	24	117.1	117.5	117.7	24	117.2	117.5	117.7	24	115.8	116.7	117.3	24	118.9	119.0	119.2	24
4/27	116.7	117.4	118.2	24	115.8	116.3	116.9	24	116.5	117.1	118.2	24	114.7	115.2	116.2	24	119.1	119.6	121.5	24
4/28	115.8	116.5	116.9	24	113.8	114.7	115.1	24	114.8	115.3	115.5	24	114.7	115.6	116.4	24	118.9	119.3	119.7	24
4/29	116.3	116.7	117.3	24	114.1	114.4	114.6	24	115.2	115.6	116.0	24	113.4	114.1	114.5	24	118.4	118.5	118.6	24
4/30	117.2	118.4	119.0	24	114.8	115.4	116.1	24	115.9	116.4	116.6	24	113.1	114.1	114.7	24	118.6	118.7	118.8	24
5/1	117.9	118.4	119.0	24	116.1	117.1	118.0	24	116.7	117.1	117.5	24	114.3	115.7	116.6	24	118.6	118.7	119.0	24
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	116.2	116.6	117.1	23	114.2	114.7	114.9	23	115.2	115.6	115.9	23	114.1	114.4	114.7	23	119.6	119.9	120.1	23



## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 5/9/2014 7:37

### 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												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/25/2014	*	---	130	2,592	519	190,608	---	2,350	414	52,654	29,850	44,599
04/26/2014	*	---	155	863	302	217,065	---	---	294	---	23,897	36,618
04/27/2014	*	---	183	240	154	181,630	97,458	---	251	58,670	29,246	32,073
04/28/2014	*	---	199	176	89	184,189	---	---	269	---	39,574	47,100
04/29/2014	*	---	189	67	122	134,302	---	139,515	524	58,358	39,242	53,244
04/30/2014	*	---	100	50	12	86,963	---	142,889	434	---	58,164	41,050
05/01/2014	*	---	114	57	40	51,724	---	34,362	457	104,182	52,344	60,877
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	*	---	---	408	108	169,168	134,600	92,192	1,356	---	70,601	40,800
05/05/2014	*	---	---	243	3,947	315,685	184,066	114,590	1,418	110,836	91,977	54,498
05/06/2014	*	---	---	313	642	456,185	290,732	141,636	704	---	92,386	61,683
05/07/2014	*	---	---	133	81	266,594	226,824	160,038	915	115,658	126,642	91,912
05/08/2014	*	---	---	143	601	194,848	96,409	---	1,089	---	113,080	110,102
05/09/2014		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>1,550</b>	<b>5,541</b>	<b>6,791</b>	<b>2,648,377</b>	<b>1,214,179</b>	<b>1,089,620</b>	<b>9,948</b>	<b>637,331</b>	<b>890,159</b>	<b>768,584</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>172</b>	<b>396</b>	<b>485</b>	<b>189,170</b>	<b>151,772</b>	<b>108,962</b>	<b>711</b>	<b>91,047</b>	<b>63,583</b>	<b>54,899</b>
<b>YTD</b>		<b>65,404</b>	<b>61,392</b>	<b>23,214</b>	<b>10,159</b>	<b>3,752,560</b>	<b>1,377,106</b>	<b>1,094,544</b>	<b>11,375</b>	<b>739,049</b>	<b>1,011,613</b>	<b>1,052,576</b>

COMBINED SUBYEARLING CHINOOK												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/25/2014	*	---	0	0	1	284	---	0	16	0	0	1,082
04/26/2014	*	---	0	0	1	0	---	---	19	---	0	1,821
04/27/2014	*	---	0	0	1	545	0	---	13	626	0	3,113
04/28/2014	*	---	0	0	0	1,748	---	---	7	---	0	659
04/29/2014	*	---	0	0	1	279	---	0	15	727	36	1,389
04/30/2014	*	---	0	0	0	286	---	0	12	---	0	1,213
05/01/2014	*	---	0	0	0	0	---	0	2	1,149	105	1,714
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	2	0	0	0	13	---	127	719
05/05/2014	*	---	---	0	82	558	0	285	18	3,024	0	0
05/06/2014	*	---	---	0	96	819	0	0	39	---	0	973
05/07/2014	*	---	---	0	28	288	0	0	30	0	0	279,679
05/08/2014	*	---	---	0	55	773	0	---	62	---	0	463,233
05/09/2014		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>4</b>	<b>0</b>	<b>267</b>	<b>7,696</b>	<b>3</b>	<b>285</b>	<b>262</b>	<b>5,914</b>	<b>495</b>	<b>758,432</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>550</b>	<b>0</b>	<b>29</b>	<b>19</b>	<b>845</b>	<b>35</b>	<b>54,174</b>
<b>YTD</b>		<b>0</b>	<b>14</b>	<b>1</b>	<b>332</b>	<b>16,601</b>	<b>327</b>	<b>285</b>	<b>1,575</b>	<b>8,379</b>	<b>772</b>	<b>1,508,522</b>

### Two-Week Summary of Passage Indices

COMBINED COHO												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
04/25/2014	*	---	0	0	28	284	---	0	5	905	33	18,360
04/26/2014	*	---	0	0	7	1,056	---	---	5	---	29	9,681
04/27/2014	*	---	0	0	2	545	583	---	2	1,670	338	11,830
04/28/2014	*	---	0	0	11	699	---	---	4	---	347	11,857
04/29/2014	*	---	0	0	9	557	---	0	2	2,551	1,971	33,336
04/30/2014	*	---	0	0	1	858	---	0	16	---	3,080	8,148
05/01/2014	*	---	0	0	7	292	---	390	18	6,895	5,432	15,003
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	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	13	2,732	598	0	67	---	13,084	16,028
05/07/2014	*	---	---	0	3	2,306	4,145	1,706	85	6,330	10,949	30,291
05/08/2014	*	---	---	0	53	3,608	2,870	---	183	---	6,338	34,463
05/09/2014	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>235</b>	<b>19,827</b>	<b>12,716</b>	<b>2,975</b>	<b>594</b>	<b>27,189</b>	<b>78,218</b>	<b>248,078</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>1,416</b>	<b>1,590</b>	<b>298</b>	<b>42</b>	<b>3,884</b>	<b>5,587</b>	<b>17,720</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>267</b>	<b>21,000</b>	<b>13,003</b>	<b>2,975</b>	<b>687</b>	<b>30,313</b>	<b>78,570</b>	<b>325,070</b>

COMBINED STEELHEAD												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	
04/25/2014	*	---	1,158	154	1,327	131,807	---	497	42	19,231	9,939	2,268
04/26/2014	*	---	911	251	1,207	128,074	---	---	55	---	7,357	4,500
04/27/2014	*	---	824	61	310	189,799	139,410	---	40	26,927	9,899	3,378
04/28/2014	*	---	1,060	50	536	171,607	---	---	61	---	14,619	4,776
04/29/2014	*	---	761	5	533	126,779	---	66,738	54	30,585	20,857	5,247
04/30/2014	*	---	479	15	233	86,963	---	77,202	99	---	26,790	4,703
05/01/2014	*	---	687	4	373	59,906	---	41,000	78	80,037	27,791	6,858
05/02/2014	*	---	970	6	596	74,461	76,961	107,020	131	---	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	*	---	---	91	366	89,774	75,071	47,573	214	---	35,675	17,101
05/05/2014	*	---	---	65	2,543	41,273	119,206	46,197	408	61,375	53,413	11,259
05/06/2014	*	---	---	117	169	128,934	120,237	58,655	566	---	60,525	29,630
05/07/2014	*	---	---	147	67	136,035	131,467	58,842	748	51,049	74,874	40,755
05/08/2014	*	---	---	84	171	146,136	130,242	---	966	---	65,230	42,070
05/09/2014	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>9,015</b>	<b>1,064</b>	<b>8,848</b>	<b>1,574,108</b>	<b>859,887</b>	<b>579,747</b>	<b>3,596</b>	<b>326,240</b>	<b>481,954</b>	<b>204,023</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>1,002</b>	<b>76</b>	<b>632</b>	<b>112,436</b>	<b>107,486</b>	<b>57,975</b>	<b>257</b>	<b>46,606</b>	<b>34,425</b>	<b>14,573</b>
<b>YTD</b>		<b>2,080</b>	<b>21,666</b>	<b>2,145</b>	<b>12,842</b>	<b>2,207,653</b>	<b>1,024,266</b>	<b>582,625</b>	<b>3,926</b>	<b>374,937</b>	<b>530,925</b>	<b>223,053</b>

### Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/25/2014	*	---	0	0	2,839	---	32	224	28,072	569	648
04/26/2014	*	---	0	0	5,017	---	---	525	---	733	683
04/27/2014	*	---	0	0	9,803	1,166	---	87	26,305	677	1,391
04/28/2014	*	---	0	0	9,786	---	---	282	---	1,234	659
04/29/2014	*	---	0	0	8,080	---	2,013	412	19,284	1,684	926
04/30/2014	*	---	0	0	3,433	---	1,737	101	---	2,364	55
05/01/2014	*	---	0	0	2,630	---	0	55	19,534	1,149	215
05/02/2014	*	---	0	0	2,849	2,870	5,985	44	---	783	663
05/03/2014	*	---	0	0	5,188	3,443	3,706	359	9,302	819	1,289
05/04/2014	*	---	---	0	7,575	4,402	2,955	498	---	764	245
05/05/2014	*	---	0	0	15,059	3,303	2,279	178	12,961	1,135	902
05/06/2014	*	---	0	0	10,653	5,982	2,973	120	---	1,977	1,457
05/07/2014	*	---	0	0	11,817	4,748	2,274	208	28,290	1,184	553
05/08/2014	*	---	0	0	1,804	5,734	---	462	---	3,067	1,344
05/09/2014	*	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>96,533</b>	<b>31,648</b>	<b>23,954</b>	<b>3,555</b>	<b>143,748</b>	<b>18,139</b>	<b>11,030</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>6,895</b>	<b>3,956</b>	<b>2,395</b>	<b>254</b>	<b>20,535</b>	<b>1,296</b>	<b>788</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>138,205</b>	<b>38,938</b>	<b>24,364</b>	<b>14,454</b>	<b>174,153</b>	<b>21,047</b>	<b>27,493</b>

COMBINED LAMPREY JUVENILES											
	WTB	IMN	GRN	LEW	LGR†	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Samp)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)
04/25/2014	*	---	0	0	0	---	0	0	100	160	67
04/26/2014	*	---	0	0	0	---	---	0	---	83	0
04/27/2014	*	---	0	0	0	0	---	0	0	229	0
04/28/2014	*	---	0	0	0	---	---	0	---	450	0
04/29/2014	*	---	0	0	0	---	0	0	400	950	50
04/30/2014	*	---	0	0	0	---	0	0	---	50	0
05/01/2014	*	---	0	0	0	---	0	0	0	0	0
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	200	0	0	---	0	0
05/05/2014	*	---	---	0	0	1	200	0	0	77	67
05/06/2014	*	---	---	0	0	0	200	0	---	100	0
05/07/2014	*	---	---	0	0	0	0	0	0	0	0
05/08/2014	*	---	---	0	0	0	---	0	---	143	0
05/09/2014	*	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>201</b>	<b>600</b>	<b>0</b>	<b>700</b>	<b>2,519</b>	<b>184</b>
<b># Days:</b>		<b>0</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>10</b>	<b>14</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>60</b>	<b>0</b>	<b>100</b>	<b>180</b>	<b>13</b>
<b>YTD</b>		<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>617</b>	<b>5</b>	<b>2,530</b>	<b>11,949</b>	<b>11,768</b>

## 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:

5/9/14 7:39 AM

**04/25/14 TO 05/09/14**

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	5,200	1,881,294	14,200	1,109,306	67,600	3,077,600
	Sum of NumberBarged	3,227	1,182,396	11,344	509,341	39,639	1,745,947
	Sum of NumberBypassed	1,955	699,339	2,852	600,129	27,627	1,331,902
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	6	31	0	25	10	72
	Sum of FacilityMorts	12	968	4	35	324	1,343
	Sum of ResearchMorts	0	20	0	81	0	101
	Sum of TotalProjectMorts	18	1,019	4	141	334	1,516
<b>LGS</b>	Sum of NumberCollected		818,393	8,602	582,953	21,410	1,431,358
	Sum of NumberBarged		751,460	8,200	487,281	20,585	1,267,526
	Sum of NumberBypassed		66,856	400	95,645	800	163,701
	Sum of Numbertrucked		0	0	0	0	0
	Sum of SampleMorts		9	0	1	2	12
	Sum of FacilityMorts		68	2	26	23	119
	Sum of ResearchMorts		0	0	0	0	0
	Sum of TotalProjectMorts		77	2	27	25	131
<b>LMN</b>	Sum of NumberCollected	200	708,767	2,000	368,333	15,520	1,094,820
	Sum of NumberBarged	200	534,502	1,800	280,359	13,074	829,935
	Sum of NumberBypassed	0	173,956	0	87,922	2,320	264,198
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	14	0	10	1	25
	Sum of FacilityMorts	0	295	0	42	125	462
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	309	0	52	126	487
<b>Total Sum of NumberCollected</b>		<b>5,400</b>	<b>3,408,454</b>	<b>24,802</b>	<b>2,060,592</b>	<b>104,530</b>	<b>5,603,778</b>
<b>Total Sum of NumberBarged</b>		<b>3,427</b>	<b>2,468,358</b>	<b>21,344</b>	<b>1,276,981</b>	<b>73,298</b>	<b>3,843,408</b>
<b>Total Sum of NumberBypassed</b>		<b>1,955</b>	<b>940,151</b>	<b>3,252</b>	<b>783,696</b>	<b>30,747</b>	<b>1,759,801</b>
<b>Total Sum of Numbertrucked</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Sum of SampleMorts</b>		<b>6</b>	<b>54</b>	<b>0</b>	<b>36</b>	<b>13</b>	<b>109</b>
<b>Total Sum of FacilityMorts</b>		<b>12</b>	<b>1,331</b>	<b>6</b>	<b>103</b>	<b>472</b>	<b>1,924</b>
<b>Total Sum of ResearchMorts</b>		<b>0</b>	<b>20</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>101</b>
<b>Total Sum of TotalProjectMorts</b>		<b>18</b>	<b>1,405</b>	<b>6</b>	<b>220</b>	<b>485</b>	<b>2,134</b>

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

5/9/14 7:39 AM

TO: 05/09/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	11,800	2,674,480	15,070	99,650	1,561,780	4,362,780
	Sum of NumberBarged	3,227	1,182,396	11,344	39,639	509,341	1,745,947
	Sum of NumberBypassed	8,536	1,490,973	3,722	59,638	1,052,282	2,615,151
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	25	91	0	40	36	192
	Sum of FacilityMorts	12	987	4	333	37	1,373
	Sum of ResearchMorts	0	33	0	0	84	117
	Sum of TotalProjectMorts	37	1,111	4	373	157	1,682
<b>LGS</b>	Sum of NumberCollected	228	932,088	8,802	26,524	697,805	1,665,447
	Sum of NumberBarged	0	751,460	8,200	20,585	487,281	1,267,526
	Sum of NumberBypassed	225	180,543	600	5,910	210,493	397,771
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	14	0	6	3	23
	Sum of FacilityMorts	3	71	2	23	28	127
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	3	85	2	29	31	150
<b>LMN</b>	Sum of NumberCollected	200	711,765	2,000	15,768	370,097	1,099,830
	Sum of NumberBarged	200	534,502	1,800	13,074	280,359	829,935
	Sum of NumberBypassed	0	176,948	0	2,568	89,684	269,200
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	16	0	1	10	27
	Sum of FacilityMorts	0	295	0	125	42	462
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	0	311	0	126	52	489
Total Sum of NumberCollected		12,228	4,318,333	25,872	141,942	2,629,682	7,128,057
Total Sum of NumberBarged		3,427	2,468,358	21,344	73,298	1,276,981	3,843,408
Total Sum of NumberBypassed		8,761	1,848,464	4,322	68,116	1,352,459	3,282,122
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		25	121	0	47	49	242
Total Sum of FacilityMorts		15	1,353	6	481	107	1,962
Total Sum of ResearchMorts		0	33	0	0	84	117
Total Sum of TotalProjectMorts		40	1,507	6	528	240	2,321

**Cumulative Adult Passage at Mainstem Dams Through: 05/08**

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	05/08	134527	7978	58147	15847	82441	5547	0	0	0	0	0	0	0	0	0	0	0	0
TDA	05/08	91807	3919	41446	10951	51942	3184	0	0	0	0	0	0	0	0	0	0	0	0
JDA	05/08	71324	2927	31072	6890	40465	2346	0	0	0	0	0	0	0	0	0	0	0	0
MCN	05/08	51892	1280	20339	2541	29513	1161	0	0	0	0	0	0	0	0	0	0	0	0
IHR	05/08	35894	908	14560	1490	18536	566	0	0	0	0	0	0	0	0	0	0	0	0
LMN	05/08	28824	621	10604	904	14126	336	0	0	0	0	0	0	0	0	0	0	0	0
LGS	05/08	16632	327	7996	685	10147	246	0	0	0	0	0	0	0	0	0	0	0	0
LGR	05/08	13383	176	5403	420	8803	150	0	0	0	0	0	0	0	0	0	0	0	0
PRD	05/07	4588	11	1432	17	2836	5	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	05/07	599	0	578	5	1534	8	0	0	0	0	0	0	0	0	0	0	0	0
RRH	05/07	225	0	147	7	392	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL	05/07	65	0	13	0	135	2	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/02	4717	39	8341	303	10362	86	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	05/08	5	-2	0	0	0	0	9	0	0	4212	2785	3908	1225	827	1080	3	-1	8
TDA	05/08	0	0	0	0	0	0	0	1	0	461	693	2242	160	326	867	0	0	0
JDA	05/08	0	1	0	0	0	0	1	0	0	2779	799	4600	1091	442	1528	0	1	6
MCN	05/08	0	0	1	0	1	0	0	0	0	566	1350	5351	319	673	1822	4	21	2
IHR	05/08	0	0	0	0	0	0	0	0	0	1546	3774	4517	736	1498	1346	0	8	0
LMN	05/08	0	0	0	0	0	0	1	0	0	1334	2409	6615	868	1359	2784	0	0	0
LGS	05/08	0	0	0	0	0	0	0	0	0	1340	2138	6619	906	1140	2258	0	1	0
LGR	05/08	0	0	0	0	0	0	0	0	0	7272	7331	8627	3333	3166	3032	0	1	0
PRD	05/07	0	0	0	0	0	0	0	0	0	85	35	29	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	05/07	0	0	0	0	0	0	0	0	0	232	57	69	124	39	40	0	0	0
RRH	05/07	0	0	0	0	0	0	0	0	0	204	114	285	130	94	216	0	0	0
WEL	05/07	0	0	0	0	0	0	0	0	0	61	25	26	42	23	17	0	0	2
WFA	05/02	9	0	2	0	0	0	0	0	0	6215	7157	8610	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.