



# Fish Passage Center

## Weekly Report #14 - 17

July 11, 2014

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### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 2% and 32% of average at individual sub-basins over the first nine days of July. Precipitation above The Dalles has been 12% of average over early July. Over the 2014 water year, precipitation has ranged between 75% and 99% of average.

**Table 1.** Summary of July precipitation and cumulative October through July 9, 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	
	July 1-9, 2014		October 1, 2013 to July 9, 2014	
	Observed (inches)	% Avg	Observed (inches)	% Avg
Columbia above Coulee	0.11	14	30.2	93
Sneke River above Ice Harbor	0.03	9	15.7	78
Columbia above The Dalles	0.05	12	20.2	83
Kootenai	0.12	15	32.0	96
Clark Fork	0.01	2	19.6	81
Flathead	0.03	4	31.3	99
Pend Oreille River Basin above Waneta Dam	0.02	3	25.8	89
Salmon River Basin	0.03	7	19.2	75
Upper Snake Tributaries	0.14	32	20.8	87
Clearwater	0.01	2	33.5	90
Willamette River above Portland	0.00	2	51.0	84

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

Location	July 10, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	107	108265
Grand Coulee (Jan–July)	109	65162
Libby Res. Inflow, MT (Apr–Aug)	119	7002
Hungry Horse Res. Inflow, MT (Jan–July)	133	2786
Lower Granite Res. Inflow (Apr–July)	99	19729
Brownlee Res. Inflow (Apr–July)	63	3432
Dworshak Res. Inflow (Apr–July)	124	3011

Grand Coulee Reservoir is at 1288.5 feet (7-10-14) and has refilled 2.6 feet over the last week (1.5 feet from full). Outflows at Grand Coulee have ranged between 149.5 and 158.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2450.9 feet (7-10-14) and has refilled 3.3 feet over the previous week (8.1 feet from full). Libby Dam is projected to refill by late July or early August. The daily average outflows at Libby Dam have been 15.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3559.4 feet (7-10-14) and has refilled 0.6 feet over the previous week (0.6 feet from full). Outflows at Hungry Horse have been 6.6 to 7.9 Kcfs over the last week.

Dworshak is currently at an elevation of 1596.4 feet (7-10-14) and has drafted 3.1 feet over the previous week (3.6 feet from full). Outflows at Dworshak have been increased from 7.4 to 12.9 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2073.3 feet on July 10, 2014 (3.7 feet from full) and drafted 1.9 feet last week. Inflows to Brownlee Dam have ranged between 13.0 and 13.9 Kcfs last week.

The Spring Biological Opinion flow period began on April 3<sup>rd</sup> and ended June 20<sup>th</sup> in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2014), the flow objective this spring was 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 91.8 Kcfs over the spring season.

The Summer Biological Opinion flow period began on June 21<sup>st</sup> in the lower Snake River (Lower Granite). According to the June Final Water Supply Forecast (June 6, 2014), the flow objective this summer is 52 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 57.8 Kcfs over the last week and 64.8 Kcfs over the summer flow period.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives were 260 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam (both began April 10<sup>th</sup> and ended June 30<sup>th</sup>). Flows at McNary Dam averaged 286.3 Kcfs over the spring period. Flows at Priest Rapids Dam averaged 185.9 Kcfs over the spring period.

The Summer Biological Opinion flow period began on July 1<sup>st</sup> in the lower Columbia River (McNary), the flow objective this summer is 200 Kcfs at McNary. Flows at McNary have averaged 245.1 Kcfs over the last week and 256.3 Kcfs over the summer flow period.

## Spill

The Snake River projects transitioned to the summer spill program on June 21<sup>st</sup>. At the lower Columbia projects summer spill was initiated on June 16<sup>th</sup>. Summer spill operations throughout the FCRPS will continue until August 31<sup>st</sup>.

All of the Snake River projects met the summer spill levels specified in the Fish Operations Plan (FOP). Spill equal to 18 Kcfs occurred at Lower Granite Dam. Spill at Little Goose Dam averaged the 30% of total flow volume specified in the FOP. At Lower Monumental Dam spill was a 17 Kcfs daily average. The summertime “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, were initiated at Ice Harbor Dam on June 16<sup>th</sup> and continue until July 13<sup>th</sup>.

Project	Spill Level Day/Night
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	June 16 to July 13: 30%/30% vs. 45 Kcfs/Gas Cap

At the Middle Columbia River projects, McNary Dam spilled 50% of daily average flow. At John Day Dam the testing of the 30% and 40% spill levels occurred over the past week. Spill at The Dalles Dam averaged 40% of total daily flow, with some periods of higher spill due to excess generation spill over the weekend. Bonneville Dam spilled an alternating 85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs

Project	Spill Level Day/Night
McNary	50%/50%
John Day	<b>Testing:</b> 30%/30% vs. 40%/40% until July 20 <sup>th</sup>
The Dalles	40%/40%
Bonneville	85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs

New in 2014 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 (since Oregon does not have a forebay TDG requirement). 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 Little Goose, Lower Monumental, McNary, Bonneville, and Rock Island dams over the past week. One fish was observed with minor (Rank 1) signs of GBT at Rock Island Dam on 7/8 and at Bonneville Dam one fish with minor signs was detected in the sample on 7/5 and again on 7/8. The action criterion for GBT is 15% of total fish with any signs of GBT in the fins, or 5% with severe signs (Rank 3 or greater).

### **Smolt Monitoring**

Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, LGR). The Imnaha River Trap (IMN) is the only trap from the SMP that is still operating for the 2014 season.

Passage of spring migrants (e.g., yearling Chinook, steelhead, coho, and sockeye) was low all of the SMP sites this week. Subyearling Chinook dominated the collections at all the SMP dam sites this week. When compared to last week, subyearling Chinook passage increased at Bonneville (BON), John Day (JDA), and Rock Island (RIS) dams and decreased at McNary Dam (MCN) and all of the Snake River sites.

Subyearling Chinook passage at Bonneville Dam (BON) increased substantially this week, when compared to the previous week. The daily average passage index for subyearling Chinook at BON this week was about 115,700 per day. Last week's daily average passage index was only 62,300 per day. The increase in subyearling Chinook passage is largely due to the release of about 6.0 million hatchery subyearling fall Chinook into the Little White Salmon

River that began earlier this month. Pacific lamprey macrophthalmia were encountered in only three of this week's samples at BON.

Subyearling Chinook passage at John Day Dam (JDA) increased again this week. This week's daily average passage index for subyearling Chinook was about 104,300 per day. Last week's daily average passage index for subyearling Chinook was about 83,000 per day. No Pacific lamprey ammocoetes were encountered in this week's samples but Pacific lamprey macrophthalmia were present every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was about 270 per day, which is a decrease from last week's daily average collection of about 740 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Subyearling Chinook passage decreased slightly this week when compared to the previous week. The daily average passage index for subyearling Chinook at MCN this week was about 314,000 per day. Last week's daily average passage index for subyearling Chinook was about 340,000. Pacific lamprey macrophthalmia were encountered nearly every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was about 2,150 per day, which is an increase from last week's daily average collection of about 1,100 per day.

This week's daily average passage index for subyearling Chinook at Lower Granite Dam (LGR) was about 5,400 per day, which is a decrease from last week's daily average passage index of about 9,800 per day. Six Pacific lamprey ammocoetes were sampled this week at LGR, one on July 5<sup>th</sup>, two on July 6<sup>th</sup>, and three on July 10<sup>th</sup>. Only one Pacific lamprey macrophthalmia was sampled at LGR this week, on July 4<sup>th</sup>.

Passage of subyearling Chinook at Little Goose Dam also decreased this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at LG was about 6,200 per day. Last week's daily average passage index for subyearling Chinook was nearly 12,000 per day. Pacific lamprey ammocoetes were encountered in two of this week's samples while macrophthalmia were encountered in three of this week's samples.

This week's daily average passage index for subyearling Chinook at Lower Monumental Dam (LMN) was about 2,300 per day, which is a decrease from last week's daily average passage index of about 5,500 per day. Only Pacific lamprey macrophthalmia have been collected so far this year at LMN. Pacific macrophthalmia were encountered in three of this week's samples, July 5<sup>th</sup>, July 6<sup>th</sup>, and July 10<sup>th</sup>.

Passage of subyearling Chinook at Rock Island Dam (RIS) increased again this week, when compared to last week. This week's daily average passage index for subyearling Chinook was about 500 per day whereas that for last week was about 300 per day. So far this year, only Pacific lamprey macrophthalmia have been collected at RIS. Three Pacific lamprey macrophthalmia were encountered this week, one on July 5<sup>th</sup> and two on July 8<sup>th</sup>.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Summer trapping operations began on June 22<sup>nd</sup>, which means that the Imnaha Trap is operated only on weekdays. To date, the FPC has received data through July 3<sup>rd</sup>. Steelhead dominated the collections over the period of June 30 to July 3. The daily average collection for steelhead during this period was 11 per day. This is a decrease from the previous week's collection period (June 23-27) when the daily average steelhead collection was 32 per day. Yearling Chinook were also present in the most recent sampling period, but in low numbers. The daily average collection for yearling Chinook during the June 30 to July period was about 5 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. There were no new releases scheduled for this zone this week. In addition, no new releases are 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. There were no releases scheduled for this zone this week and no releases are scheduled for this zone 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. There were no new releases scheduled for this zone this week. There are also no releases scheduled for this zone over the next 2 weeks.

### Adult Passage

Daily adult summer Chinook passage numbers at Bonneville Dam ranged between 1,328 and 2,495 in the last week. The 2014 summer Chinook count of 92,396 is about 1.2 times greater than the 2013 count and about 1.3 times greater than the 10-year average. The 2014 Bonneville Dam summer Chinook jack count of 19,424 is 84.7% of the 2013 count, while being 1.2 times greater than the 10-year average count. At McNary Dam 66,698 adult summer Chinook have been counted. The 2014 adult summer Chinook count at McNary Dam is about 1.1 times greater than the 2013 count and is about 1.4 times greater than the 10-year average. The 2014 McNary Dam summer Chinook jack count of 11,137 is about 94.5% of the 2013 count, while being about 1.3 times greater than the 10-year average count. The 2014 adult summer Chinook count at Lower Granite Dam in the Snake River of 10,140 is about 1.6 times greater than the 2013 count, while being 79.3% of the 10-year average count. The 2014 Lower Granite summer Chinook jack count of 4,650 is about 86.4% of the 2013 count, while having 105 more fish than the 10 year average count.

The 2014 Bonneville Dam adult steelhead count of 32,210 is about 2.6 times greater than the 2013 count of 12,482 and has 2,774 more fish than the 10-year average count of 29,436. The 2014 Bonneville Dam adult wild steelhead count of 14,859 is about 3.1 times greater than the 2013 count of 4,845 and about 1.3 times greater than the 10-year average count of 11,778. Daily adult steelhead counts at Lower Granite Dam ranged from 44 to 81 adults per day last week. This year's Lower Granite steelhead count of 8,374 has 665 more fish than the 2013 count of 7,709, while being about 87% of the 10-year average count of 9,631. The 2014



Lower Granite Dam adult wild steelhead count of 3,816 has 508 more fish than the 2013 count of 3,308 and has 440 more fish than the 10-year average count of 3,376. At Willamette Falls, the 2014 count for steelhead was 23,171 as of July 8th. This year's steelhead count is about 1.4 times greater than the 2013 count of 16,534, while being about 99.7% of the 10-year average count of 23,240.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 12,305 and 34,549 last week. The 2014 adult sockeye count at Bonneville Dam of 551,530 is about 3.4 times greater than the 2013 count and about 3 times greater than the 10-year average count. The 2014 McNary Dam adult sockeye count of 409,106 is about 3.9 times greater than the 2013 count of 104,892 and about 3.5 times greater than the 10-year average count of 118,171. The Lower Granite Dam 2014 adult sockeye count of 740 has 461 more fish than the 2013 count of 279 and 444 more fish than the 10-year average of 296. As of July 10th at Bonneville Dam, the adult shad count was 2,593,259. This year's shad count is about 69.6% of the 2013 count of 3,726,309 and 94.2% of the 10-year average count of 2,751,352.

### *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. 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 had 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 PUD installed a spiral flume on the left bank fishway that reduces the elevation of the chute outflow from approximately 10 feet down to several feet. At the time of installing the spiral flume at the left bank fishway exit, Grant County also installed a ramp structure leading up to the weir and barriers to prevent jumping outside the structure. Grant PUD has also completed the installation of the spiral flume at the right bank fishway.

Visual observations of the exit retrofits have been promising. During Wanapum Dam site visits on May 7, May 21, June 4, June 18, and July 2, 2014, many fish have been seen passing the left bank fishway weir and chute. On July 2, 2014, over a several hour period, the left bank weir successfully passed well over a thousand fish (predominantly sockeye and Chinook). On July 2, 2014, a very large majority of the fish passed via the left bank ladder; only two sockeye were seen passing the right bank ladder weir. Although the right bank ladder passed only 5%–10% of fish last year at this time, based on visual observations on July 2<sup>nd</sup>, it was estimated that less than 1% are currently passing at the right bank ladder. A sizeable eddy that brings flow back up toward the right bank entrance could be limiting the attraction of the fishway flow at the entrance. Although several spillbays are not operable this year, it may be worthwhile to adjust the pattern of spill (volume per operable bay) to see if the eddy could be minimized and attraction to the right bank ladder enhanced. Over the next several weeks, fish passage at Wanapum will be very high and increased passage at the right bank ladder would help to reduce pressure on the left bank ladder. It should be pointed out that although the left bank ladder was passing the vast majority of fish on July 2, 2014, the ladder did not appear to be overly crowded, and the weir was quite easily handling the numbers of fish passing.

As of July 8, 2014, a total of 302,061 sockeye and 44,191 adult summer Chinook had passed Priest Rapids Dam. As of the same date, 208,491 sockeye and 39,182 summer Chinook had passed Rock Island Dam. Although, the difference in the number of sockeye at the two projects is greater than 93,000, recent daily totals at Rock Island have been greater than 30,000 sockeye per day.

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 all three denils in place, two at the right bank fishway and one of the left bank fishway.

A little over a month and a half ago, the WDFW had noticed an unusually large percentage of adult fish at the Wells Dam Trap with significant injuries. More recently, the significant injuries seen prior have diminished. The source of these injuries continues to be investigated.

In recent weeks there has been some speculation that the trap at Rocky Reach Dam could have been contributing to the injuries seen at Wells Dam. Over the spring of 2014, Chelan PUD identified 106 PIT-tagged fish that were targeted to be trapped at Rocky Reach Dam. Of the 106 PIT-tagged fish that were targeted by Chelan PUD, most passed the Rocky Reach project during periods when the trap was not being operated. In total only 25 PIT-tagged fish were trapped in 2014 at the Rocky Reach Dam Trap. According to Chelan PUD, the pneumatic door to the trap was opened/closed a total of 43 times in 2014, to capture the 25 fish trapped and collected. Chelan PUD has reported three mortalities in 2014 that they have been in the vicinity of the trap. Two of the three had injuries consistent with being crushed by the pneumatic door as it opened/closed. The third mortality did not have the same type of injury (was reported to have significant fungal growth). Although there were several mortalities associated with the Rocky Reach Trap in 2014, it is unlikely that this trap was a significant source to elevated injury levels seen at the Wells Dam West Ladder Trap.

1. When the Rocky Reach Trap was operated, two operators were watching as the pneumatic door was opening/closing and the PUD had video footage of each entry to trap with door opening/closing. Chelan PUD reported the mortalities associated with trap operation and has stated that there were no other injuries associated with the trapping operation. Again, there were multiple observers and video footage of this

operation. If injuries were occurring it should have been apparent.

2. The Rocky Reach Trap door closed a total of 43 times in 2014. If the Rocky Reach Trap were causing the injuries seen at the Wells West ladder, each trap door closing at Rocky Reach would need to have injured several fish. With two observers and video footage, this injury rate would have been very obvious.
3. The two mortalities that Chelan stated were caused by the pneumatic door opening/closing were from being crushed, which is a different type of injury than has been reported at other locations (lacerations, gouges, etc).
4. If the Rocky Reach Trap were causing the increased injury rates at Wells, injuries would be expected to be uniform at both Well ladders. The West ladder was recording the majority of the injuries seen in 2014.

### Hatchery Releases Last Two Weeks

<b>Hatchery Release Summary</b>									
<b>From:</b>		<b>6/27/2014</b>			<b>to</b>		<b>07/10/14</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>
Nez Perce Tribe	Dworshak NFH	CH0	SP	2015	300,000	07-01-14	07-05-14	Selway River	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	SP	2015	400,000	06-25-14	07-01-14	Meadow Creek - SELW	Selway River
<b>Nez Perce Trive Total</b>					<b>700,000</b>				
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2014	1,859,849	07-02-14	07-02-14	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2014	2,546,543	07-01-14	07-01-14	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Willard Hatchery	CH0	FA	2014	2,145,000	07-01-14	07-01-14	Willard Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Total				<b>6,551,392</b>				
<b>Grand Total</b>					<b>7,251,392</b>				

### Hatchery Releases Next Two Weeks

**Hatchery Release Summary**

**From:** 7/11/2014 to 7/24/2014

<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>
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No Releases Scheduled

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
06/27/2014	177.6	0.7	172.5	49.6	191.9	29.8	184.4	18.9	192.9	38.0	189.3	60.0	203.7	70.0
06/28/2014	178.3	0.8	175.2	50.1	191.5	26.8	182.6	22.8	191.5	39.1	186.2	61.7	196.7	83.1
06/29/2014	176.8	6.8	178.0	49.9	199.4	30.0	195.9	37.4	202.3	38.7	200.7	70.9	223.1	104.3
06/30/2014	178.4	3.9	176.7	52.7	189.8	18.4	182.0	22.8	189.1	38.5	183.1	48.5	197.1	65.0
07/01/2014	187.3	10.0	189.6	54.5	205.9	35.3	199.6	41.6	205.5	37.9	201.1	68.5	215.6	83.4
07/02/2014	180.5	10.0	174.1	45.1	191.9	25.1	187.8	25.5	196.2	37.8	193.1	69.9	208.8	77.9
07/03/2014	179.7	4.2	180.6	45.6	195.6	30.3	190.9	22.8	195.9	40.2	194.2	72.5	208.0	83.4
07/04/2014	154.4	0.2	159.4	24.0	168.4	12.7	169.3	19.8	179.1	32.3	177.7	51.7	192.9	71.2
07/05/2014	155.6	0.1	154.2	0.0	157.8	10.3	149.4	15.2	158.9	30.8	151.9	31.1	159.2	31.9
07/06/2014	158.7	0.1	157.9	0.0	173.5	14.6	167.9	16.8	176.6	30.7	171.6	42.1	188.6	61.8
07/07/2014	153.7	0.1	152.5	0.0	173.4	14.1	172.2	18.2	180.1	34.3	179.1	49.8	185.3	64.5
07/08/2014	149.5	0.1	148.2	0.0	151.3	10.0	147.2	14.9	158.5	34.8	154.3	19.9	166.2	29.5
07/09/2014	150.8	0.1	150.0	0.0	155.0	10.0	148.3	15.1	156.3	33.9	149.7	20.6	157.2	29.6
07/10/2014	152.2	0.2	149.3	0.0	158.2	10.0	154.3	14.7	162.5	33.0	159.0	26.6	170.0	34.4

**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
06/27/2014	4.0	0.0	14.8	14.6	65.9	18.6	64.4	19.3	64.2	16.8	67.1	42.4		
06/28/2014	11.5	2.1	14.7	13.1	77.9	30.9	77.0	26.2	76.3	30.0	79.1	62.1		
06/29/2014	10.7	1.2	14.9	13.9	78.5	27.2	76.4	26.1	75.9	31.9	80.5	52.7		
06/30/2014	9.5	0.0	14.9	16.1	71.6	18.6	71.0	21.1	68.9	17.0	70.7	21.3		
07/01/2014	9.5	0.0	15.1	17.6	68.1	18.6	65.3	19.5	67.1	17.6	68.9	44.6		
07/02/2014	8.3	0.0	14.8	17.0	65.5	18.5	63.4	18.9	64.3	17.0	67.8	53.6		
07/03/2014	7.4	0.3	14.4	17.9	64.6	25.1	63.3	23.4	63.3	22.6	64.6	29.1		
07/04/2014	7.4	0.0	13.8	14.9	62.7	18.6	60.4	18.1	61.4	17.0	64.1	19.2		
07/05/2014	7.4	0.0	13.9	16.2	58.4	18.6	57.9	17.3	58.1	16.9	60.1	41.2		
07/06/2014	7.5	0.0	13.7	16.3	58.1	18.6	56.6	16.9	55.9	17.0	59.3	44.2		
07/07/2014	11.8	2.3	13.7	15.7	59.6	18.6	58.2	17.5	58.7	16.6	60.2	26.8		
07/08/2014	11.9	2.4	13.4	16.4	56.6	18.5	56.7	16.9	56.4	17.0	57.8	18.7		
07/09/2014	12.2	2.7	13.0	13.9	56.1	18.5	53.6	16.0	54.0	17.0	56.6	39.6		
07/10/2014	12.9	3.3	---	14.6	52.9	18.5	49.9	14.9	51.2	16.9	54.3	44.4		

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
06/27/2014	259.9	137.6	267.5	102.1	248.2	98.4	277.9	95.3	67.5	102.2
06/28/2014	224.6	138.6	261.8	78.5	248.5	105.7	266.0	101.8	48.9	102.4
06/29/2014	238.4	144.6	286.9	91.1	265.5	118.7	280.7	102.6	60.4	104.7
06/30/2014	247.2	149.9	299.9	120.3	285.2	114.8	297.5	91.5	68.2	124.9
07/01/2014	229.8	144.5	279.6	107.3	265.8	106.2	294.3	94.7	67.1	119.7
07/02/2014	219.7	144.1	276.6	83.3	262.8	105.3	280.2	99.3	63.2	105.3
07/03/2014	67.5	135.4	268.6	85.3	256.6	110.2	270.2	100.4	53.4	104.1
07/04/2014	48.9	137.3	268.9	107.4	255.5	102.2	273.8	90.0	65.0	106.4
07/05/2014	60.4	127.7	256.6	98.7	245.7	97.6	259.9	95.1	49.4	102.9
07/06/2014	68.2	119.2	222.5	66.9	200.8	80.3	224.6	99.4	23.1	89.7
07/07/2014	67.1	122.7	244.6	77.4	226.8	90.6	238.4	95.8	32.5	97.7
07/08/2014	63.2	123.3	241.4	96.2	224.1	89.9	247.2	90.3	44.3	100.2
07/09/2014	53.4	117.8	223.3	85.7	210.0	83.9	229.8	95.1	29.4	92.9
07/10/2014	65.0	95.4	165.1	49.4	146.5	58.6	219.7	100.4	28.5	78.3

## 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>											
<b>Little Goose Dam</b>											
	06/30/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	07/02/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/09/14	Chinook + Steelhead	63	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	06/27/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/29/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/03/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	06/29/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/01/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/05/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/08/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Rock Island Dam</b>											
	07/01/14	Chinook + Steelhead	54	0	0	0.00%	0.00%	0	0	0	0
	07/03/14	Chinook + Steelhead	89	0	0	0.00%	0.00%	0	0	0	0
	07/08/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	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	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/27	106.2	106.3	106.4	24	---	---	---	0	119.3	119.4	119.6	24	116.8	117.0	117.4	24	116.7	117.0	117.1	24
6/28	105.9	106.0	106.1	24	---	---	---	0	118.5	118.6	118.8	24	115.9	116.1	116.4	24	115.9	116.2	116.4	24
6/29	105.4	105.5	105.7	24	---	---	---	0	117.7	117.9	118.3	24	114.7	115.5	116.0	24	114.9	115.1	115.2	24
6/30	105.0	105.1	105.2	24	---	---	---	0	116.9	117.0	117.3	24	114.0	114.2	114.4	24	114.5	115.0	115.4	24
7/1	105.2	105.6	106.0	24	---	---	---	0	116.9	117.1	117.4	24	114.3	114.8	115.2	24	115.5	116.1	116.4	24
7/2	106.1	106.3	106.5	24	---	---	---	0	116.8	117.3	117.5	24	114.5	114.8	115.1	24	115.8	116.1	116.3	24
7/3	106.4	106.7	106.8	24	---	---	---	0	117.1	117.2	117.3	24	114.4	114.8	115.1	24	114.8	115.0	115.5	23
7/4	106.8	107.0	107.4	24	---	---	---	0	116.7	116.8	117.0	24	113.1	113.5	114.0	24	114.3	114.5	114.8	24
7/5	106.5	106.6	106.8	24	---	---	---	0	116.6	116.7	116.8	24	112.7	113.1	113.5	24	113.8	114.0	114.1	24
7/6	106.2	106.4	106.6	24	---	---	---	0	116.4	116.5	116.8	24	112.6	113.1	113.5	24	113.9	114.1	114.4	24
7/7	106.5	106.7	106.9	24	---	---	---	0	116.3	116.5	116.8	24	112.4	113.0	113.6	24	113.8	114.1	114.3	24
7/8	107.0	107.4	107.6	24	---	---	---	0	116.7	117.0	117.1	24	113.1	113.8	114.4	24	114.4	114.8	115.2	24
7/9	107.7	108.0	108.3	24	---	---	---	0	117.1	117.4	117.6	24	113.7	114.3	115.1	24	115.0	115.4	115.7	24
7/10	108.0	108.4	108.8	23	---	---	---	0	117.2	117.4	117.6	23	113.7	114.2	114.8	23	114.8	115.0	115.3	21

### 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	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/27	115.8	116.0	116.2	24	115.2	115.3	115.4	18	117.7	118.0	118.9	18	117.1	117.4	117.6	24	119.4	119.7	120.0	24
6/28	115.9	116.1	116.2	24	114.4	114.5	114.9	19	116.8	116.9	117.3	19	115.7	115.9	116.0	24	118.9	119.4	120.0	24
6/29	115.8	115.9	116.1	24	113.5	113.8	114.1	21	116.3	116.7	117.1	21	114.1	114.5	114.9	24	119.5	119.9	120.4	24
6/30	115.6	115.8	116.1	24	113.2	113.5	113.9	18	115.0	115.3	116.6	18	114.1	114.6	114.8	24	118.0	118.2	118.6	24
7/1	115.4	115.9	116.2	24	114.9	115.4	115.7	21	118.6	118.9	119.9	21	115.1	115.3	115.5	24	120.3	120.8	121.5	24
7/2	115.0	115.3	116.0	24	115.5	115.7	116.0	20	117.8	118.4	119.6	20	117.0	117.5	117.6	24	120.0	120.4	121.0	24
7/3	115.3	115.7	116.2	23	114.4	114.7	115.4	21	117.2	118.2	118.8	21	116.8	117.1	117.2	24	119.7	120.4	120.9	24
7/4	112.0	113.0	114.7	24	113.5	113.7	113.9	22	114.8	115.3	116.6	22	115.6	115.8	116.1	24	118.2	118.5	118.7	24
7/5	113.1	113.3	113.6	24	112.8	113.1	113.4	20	113.9	114.1	114.5	20	113.9	114.2	114.9	24	116.5	117.3	117.7	24
7/6	112.9	113.1	113.3	24	113.2	113.2	113.6	12	115.0	115.0	116.1	12	112.8	113.0	113.2	24	116.3	116.5	116.6	24
7/7	112.8	113.1	113.6	24	---	---	---	0	---	---	---	0	113.3	114.0	114.2	24	116.9	117.4	117.7	24
7/8	113.6	114.2	114.5	24	114.5	114.5	114.9	9	115.4	115.4	116.1	9	114.6	115.5	115.8	24	116.5	117.6	118.3	24
7/9	114.2	114.7	115.1	24	114.6	114.8	115.1	17	115.3	115.6	116.5	17	114.8	115.2	115.4	24	116.5	117.6	117.8	24
7/10	114.3	114.8	115.4	21	114.4	114.4	114.9	11	115.3	115.3	116.4	11	114.1	114.5	114.8	23	116.3	117.0	117.4	23

### 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	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
6/27	116.3	116.6	116.9	24	116.8	117.0	117.3	24	113.9	114.4	114.7	24	117.3	117.5	118.2	24	115.4	115.8	116.5	24
6/28	115.0	115.4	115.9	24	115.9	116.3	116.7	24	113.6	114.0	114.3	24	117.5	117.8	118.5	24	115.6	116.1	116.7	24
6/29	114.4	114.9	115.4	24	115.6	116.0	116.4	24	112.2	112.5	113.0	24	117.6	118.3	118.7	24	114.9	115.2	115.4	24
6/30	114.1	114.9	115.4	24	115.2	115.7	116.5	24	112.9	113.8	114.0	24	114.6	115.2	117.7	24	114.3	114.7	115.2	24
7/1	116.0	117.5	118.7	24	118.6	121.2	122.5	24	114.8	115.4	115.6	24	119.0	119.5	120.8	24	116.2	118.4	119.4	24
7/2	116.8	117.8	118.3	24	118.9	119.8	120.2	24	117.4	118.4	118.7	24	120.7	122.5	123.1	24	119.7	121.2	121.9	24
7/3	115.9	116.6	117.0	24	118.6	119.3	119.7	24	115.3	116.0	116.3	24	120.0	121.0	121.7	24	116.5	118.8	121.3	24
7/4	114.8	115.8	116.4	24	115.9	116.6	118.1	24	115.1	116.5	117.0	24	117.5	119.8	123.2	24	116.2	118.2	121.6	24
7/5	113.4	114.0	114.5	24	113.0	114.9	115.4	23	113.6	114.4	114.8	24	113.2	114.0	116.5	24	112.5	113.1	114.3	24
7/6	112.8	113.4	113.8	24	114.2	114.6	114.9	24	113.1	113.5	113.7	24	115.1	117.2	119.1	24	113.6	115.7	117.6	24
7/7	113.4	114.9	115.7	24	114.5	115.5	116.0	24	112.9	113.5	113.8	24	115.3	116.4	118.1	24	113.3	115.8	117.3	24
7/8	114.1	115.5	116.7	24	114.0	116.0	116.9	24	114.2	115.1	115.8	24	113.6	114.5	115.1	24	113.3	113.9	116.9	24
7/9	113.9	114.7	115.2	24	113.5	115.2	115.7	24	113.0	114.0	114.9	24	112.8	113.8	114.6	24	111.2	111.8	112.5	24
7/10	113.5	114.2	114.9	23	114.5	115.0	115.6	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst				Pasco				Dworshak				Clrwr-Peck				Anatone			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
6/27	116.9	117.3	118.1	24	---	---	---	0	104.4	106.1	107.4	24	101.8	102.3	103.9	24	103.1	103.7	104.4	24
6/28	117.3	117.9	118.4	24	---	---	---	0	104.1	105.4	107.7	24	102.6	103.5	103.9	24	103.2	103.9	104.6	24
6/29	118.2	118.8	119.1	24	---	---	---	0	102.4	104.2	104.4	24	102.4	102.7	103.2	24	103.3	104.0	104.9	23
6/30	115.7	116.1	116.5	24	---	---	---	0	99.9	100.2	100.5	24	101.6	102.5	103.0	24	103.5	104.5	105.3	24
7/1	118.3	119.4	120.0	24	---	---	---	0	100.4	100.7	101.0	24	102.0	102.9	103.5	24	103.8	104.8	105.6	24
7/2	119.0	119.5	120.1	24	---	---	---	0	100.9	101.4	101.7	24	102.2	102.9	103.4	24	103.5	104.3	105.0	24
7/3	117.9	118.4	118.9	24	---	---	---	0	101.9	103.0	108.4	24	102.5	103.1	103.7	24	103.1	104.0	104.9	24
7/4	117.4	118.3	118.6	24	---	---	---	0	100.6	100.9	101.1	24	101.8	102.3	102.6	24	102.7	103.5	104.2	24
7/5	113.8	114.1	114.8	24	---	---	---	0	100.4	100.7	101.0	24	101.8	102.5	103.1	24	102.8	103.8	104.6	24
7/6	116.2	117.1	118.2	24	---	---	---	0	100.4	100.9	101.3	24	102.1	103.0	103.7	24	103.0	104.1	105.1	24
7/7	115.8	116.5	116.9	24	---	---	---	0	104.8	105.3	105.5	24	104.0	104.9	105.5	24	103.1	104.2	105.2	24
7/8	114.4	114.9	116.0	24	---	---	---	0	105.5	105.8	106.0	24	104.5	105.3	105.9	24	103.1	104.3	105.2	24
7/9	113.4	113.7	114.0	24	---	---	---	0	106.5	107.7	108.9	24	104.9	105.9	107.2	24	102.8	103.8	104.7	24
7/10	---	---	---	0	---	---	---	0	108.5	109.0	109.5	23	106.2	107.1	107.8	23	102.7	103.8	104.8	21

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

Date	Clrwr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
6/27	101.6	102.5	103.5	24	102.8	102.9	103.2	24	113.4	114.1	115.2	24	113.5	113.9	114.4	24	112.7	113.1	113.4	24
6/28	102.1	103.2	104.1	24	101.9	102.2	102.4	24	116.3	119.2	120.1	24	111.8	112.1	112.7	24	113.1	113.8	114.4	24
6/29	102.4	103.4	104.1	24	100.9	101.1	101.3	24	114.5	118.0	120.0	24	109.8	110.1	110.9	24	112.2	113.3	114.2	24
6/30	102.2	103.6	104.7	24	101.0	101.4	101.9	24	110.9	111.3	111.8	24	109.2	109.7	110.1	24	110.9	111.2	111.4	24
7/1	102.7	104.3	105.4	24	102.7	103.2	103.6	24	112.0	112.5	113.3	24	111.8	113.2	114.6	24	112.5	112.9	113.2	24
7/2	102.6	104.0	104.8	24	103.7	103.8	103.9	24	112.7	113.1	113.8	24	114.3	114.6	114.9	24	112.9	113.4	114.0	24
7/3	102.8	104.4	106.3	24	103.4	103.6	104.0	24	115.2	117.2	118.5	24	113.2	113.3	113.4	24	113.2	114.1	115.0	24
7/4	102.0	103.3	104.1	24	103.1	103.3	103.7	24	113.9	114.2	114.5	24	112.7	112.8	112.9	24	112.4	112.6	112.8	24
7/5	102.3	103.9	105.1	24	102.0	102.3	103.0	24	114.4	114.7	114.9	24	112.1	112.3	112.6	24	111.8	112.3	112.7	24
7/6	102.7	104.4	105.7	24	101.4	101.7	101.9	24	114.2	114.8	115.3	24	112.4	112.7	112.9	24	111.8	112.0	112.4	24
7/7	103.4	105.5	106.9	24	101.0	101.3	101.7	24	113.9	114.3	114.8	24	113.4	114.1	114.5	24	112.1	112.5	113.0	24
7/8	104.1	106.0	107.2	24	102.3	102.9	103.2	24	114.2	114.5	114.7	24	115.5	116.3	116.7	24	113.0	113.3	113.7	24
7/9	104.0	105.6	106.8	24	102.7	102.9	103.2	24	114.4	114.6	114.8	24	115.6	115.8	116.7	24	113.2	113.7	113.9	24
7/10	104.9	106.8	108.1	23	102.6	102.9	103.3	23	114.9	115.1	115.2	23	115.0	115.1	115.5	23	113.9	114.4	114.7	23

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

Date	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
6/27	113.5	113.6	113.7	24	114.8	115.5	116.0	24	114.5	114.8	115.0	24	115.3	115.6	115.9	24	---	---	---	0
6/28	112.1	112.4	113.1	24	116.1	116.4	116.6	24	112.7	113.0	113.6	24	116.2	116.5	117.3	24	---	---	---	0
6/29	110.9	111.0	111.2	24	116.0	116.4	116.5	24	111.4	111.6	112.0	24	115.6	116.7	117.6	24	---	---	---	0
6/30	111.5	112.1	112.7	24	116.2	116.8	117.3	24	112.2	112.8	113.3	24	114.4	114.8	115.2	24	---	---	---	0
7/1	113.5	113.9	114.1	24	116.9	117.7	118.6	24	114.6	115.2	115.6	24	115.3	116.0	116.5	24	---	---	---	0
7/2	113.1	113.2	113.4	24	116.6	117.0	117.5	24	115.5	115.7	116.0	24	115.3	115.7	116.2	24	---	---	---	0
7/3	112.9	113.2	113.5	24	115.9	116.7	117.3	24	115.1	115.4	116.0	24	115.3	115.7	116.1	24	---	---	---	0
7/4	112.9	113.0	113.2	24	115.5	115.8	116.2	24	113.6	113.9	114.5	24	114.8	115.1	115.7	24	---	---	---	0
7/5	112.3	112.6	112.8	24	115.5	115.9	116.6	24	112.8	113.0	113.1	24	113.7	115.1	115.6	24	---	---	---	0
7/6	112.0	112.2	112.4	24	115.5	115.7	115.9	24	113.0	113.2	113.3	24	114.5	115.4	115.8	24	---	---	---	0
7/7	112.3	112.7	113.1	24	115.8	116.2	117.0	24	113.7	114.2	114.7	24	113.7	115.1	115.7	24	---	---	---	0
7/8	113.3	113.7	113.9	24	116.3	116.7	117.3	24	114.9	115.3	115.6	24	113.7	115.1	116.0	24	---	---	---	0
7/9	114.0	114.3	114.5	24	116.2	116.9	118.1	24	115.9	116.3	116.5	24	114.2	115.2	115.6	24	---	---	---	0
7/10	114.2	114.4	114.6	23	116.2	116.5	116.8	23	116.1	116.3	116.5	23	114.2	114.6	115.0	23	---	---	---	0

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

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

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>AVG</u>	<u>High</u>	
6/27	112.2	112.6	113.8	24	118.5	118.8	119.4	24	111.1	111.3	111.6	24	116.4	117.7	118.4	24	112.0	112.6	112.9	24
6/28	110.8	111.2	111.6	24	118.5	118.9	119.0	24	110.2	110.4	110.6	24	113.9	114.6	114.8	24	110.6	111.0	111.7	24
6/29	109.8	110.2	110.6	24	118.8	119.0	119.1	24	108.4	108.8	109.7	24	114.8	116.1	117.0	24	109.3	109.5	109.9	24
6/30	111.1	112.5	114.0	24	118.9	119.2	119.4	24	107.6	108.2	109.0	24	116.7	117.1	117.4	24	110.7	112.8	113.9	24
7/1	114.4	115.8	116.4	24	118.6	118.9	119.3	24	109.1	110.0	110.6	24	116.0	117.0	117.6	24	113.2	113.6	114.1	24
7/2	114.9	115.3	116.0	24	118.6	118.9	119.2	24	110.2	110.5	110.8	24	113.6	114.7	116.0	24	111.3	112.6	113.7	24
7/3	114.4	114.7	115.2	24	118.8	119.0	119.4	24	110.7	111.1	111.6	24	113.7	115.1	116.4	24	108.7	109.2	109.7	24
7/4	112.7	113.2	113.9	24	118.3	118.6	118.9	24	111.2	111.6	111.9	24	115.8	117.1	117.4	24	110.3	111.4	112.2	24
7/5	112.3	112.8	113.2	24	117.8	118.3	118.5	24	110.2	110.4	110.8	24	114.7	116.5	117.2	24	111.9	112.5	113.5	24
7/6	112.8	113.3	113.7	24	117.5	118.5	119.0	24	109.1	109.4	109.7	24	112.7	113.3	114.6	24	111.9	112.9	113.3	24
7/7	113.9	114.5	115.6	24	117.6	118.1	118.7	24	109.0	109.8	110.4	24	112.9	113.9	115.6	24	110.7	111.5	112.1	24
7/8	114.1	115.3	116.5	24	117.4	117.8	118.2	24	111.0	111.8	112.3	24	114.4	115.8	116.5	24	111.9	112.6	113.0	24
7/9	115.4	116.1	116.9	24	117.3	117.4	118.3	24	111.9	112.7	113.0	24	114.0	115.4	116.7	24	111.0	111.6	112.7	24
7/10	114.7	115.3	116.2	22	117.0	117.6	118.8	22	112.4	113.0	113.8	21	113.7	114.1	114.8	21	110.4	111.0	112.1	22

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

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>CamasWashougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/27	117.2	117.7	118.3	24	113.7	113.9	114.2	24	114.9	115.6	116.5	24	113.1	113.9	114.8	24	117.3	118.4	120.0	24
6/28	117.8	118.7	121.3	24	113.0	113.2	113.3	24	115.7	116.5	117.1	24	112.5	113.7	114.3	24	118.7	119.1	119.5	24
6/29	118.1	119.9	121.9	24	112.9	113.2	113.7	24	115.0	115.8	116.8	24	112.8	113.9	115.1	24	119.0	119.4	120.7	24
6/30	117.3	118.8	119.3	24	114.9	115.7	116.1	24	115.2	115.9	116.6	24	112.5	112.5	113.2	12	117.9	118.7	120.7	24
7/1	118.8	119.2	119.5	24	116.3	117.3	118.7	24	116.3	116.8	117.3	24	---	---	---	0	118.1	119.0	121.1	24
7/2	117.4	118.1	118.7	24	116.4	118.2	119.2	24	117.0	118.0	118.6	24	---	---	---	0	119.1	119.7	120.3	24
7/3	116.5	117.5	120.2	24	111.0	111.6	112.8	24	114.2	114.9	116.2	24	---	---	---	0	118.5	118.9	119.3	24
7/4	116.6	117.5	118.1	24	110.7	111.3	112.0	24	112.8	113.3	113.5	24	---	---	---	0	116.5	117.3	119.4	24
7/5	117.1	117.9	118.4	24	112.0	112.9	113.8	24	114.6	115.2	116.6	24	---	---	---	0	116.8	117.8	119.4	24
7/6	117.2	117.7	118.2	24	114.1	114.3	114.6	24	116.7	117.1	117.8	24	---	---	---	0	117.6	118.0	119.2	24
7/7	116.8	117.3	117.7	24	114.6	115.2	115.5	24	116.5	117.2	117.8	24	---	---	---	0	117.6	117.8	118.1	24
7/8	117.3	118.0	118.6	24	114.4	114.8	115.2	24	115.7	116.0	116.3	24	---	---	---	0	116.5	117.3	119.2	24
7/9	116.6	116.9	117.4	24	111.5	112.0	112.8	24	114.9	115.7	116.7	24	---	---	---	0	116.3	117.4	119.1	24
7/10	116.2	116.8	117.3	22	109.9	110.3	110.7	23	114.9	115.4	115.8	23	---	---	---	0	117.3	117.9	118.8	23



## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/11/2014 11:33

### 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/smolqueries/currentsmppsubmitdata.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)	
06/27/2014	*	---	6	---	142	86	27	0	---	167	103	
06/28/2014	*	---	---	---	246	87	153	0	0	156	0	
06/29/2014	*	---	---	---	0	127	98	0	---	286	508	
06/30/2014	*	---	3	---	138	58	82	0	1,632	153	0	
07/01/2014	*	---	6	---	170	29	55	2	---	251	0	
07/02/2014	*	---	2	---	14	0	102	0	407	389	49	
07/03/2014	*	---	5	---	329	64	0	0	---	359	0	
07/04/2014	*	---	---	---	56	29	0	0	0	228	718	
07/05/2014	*	---	---	---	0	29	14	0	---	406	0	
07/06/2014	*	---	---	---	0	14	131	2	0	158	0	
07/07/2014	*	---	---	---	30	0	102	0	---	192	0	
07/08/2014	*	---	---	---	0	0	0	0	0	837	0	
07/09/2014	*	---	---	---	0	14	0	0	---	0	0	
07/10/2014	*	---	---	---	0	0	0	0	0	0	0	
07/11/2014	*	---	---	---	---	---	---	---	---	---	0	
<b>Total:</b>		<b>0</b>	<b>22</b>	<b>0</b>	<b>1,125</b>	<b>537</b>	<b>764</b>	<b>4</b>	<b>2,039</b>	<b>3,582</b>	<b>1,378</b>	
<b># Days:</b>		<b>0</b>	<b>5</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>	
<b>Average:</b>		<b>0</b>	<b>4</b>	<b>0</b>	<b>80</b>	<b>38</b>	<b>55</b>	<b>0</b>	<b>291</b>	<b>256</b>	<b>92</b>	
<b>YTD</b>		<b>65,404</b>	<b>63,536</b>	<b>25,420</b>	<b>10,159</b>	<b>4,807,464</b>	<b>2,838,718</b>	<b>1,969,480</b>	<b>26,427</b>	<b>2,022,048</b>	<b>2,317,962</b>	<b>2,150,255</b>

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)	
06/27/2014	*	---	0	---	14,297	7,508	1,561	114	---	119,093	27,157	
06/28/2014	*	---	---	---	13,040	14,836	4,161	118	213,495	172,771	35,237	
06/29/2014	*	---	---	---	11,067	18,931	4,616	238	---	98,393	58,022	
06/30/2014	*	---	3	---	8,191	15,547	8,613	416	266,322	63,038	93,431	
07/01/2014	*	---	1	---	8,678	14,994	11,317	301	---	49,650	83,046	
07/02/2014	*	---	0	---	7,810	6,298	7,019	284	537,627	35,806	63,197	
07/03/2014	*	---	0	---	5,784	5,423	1,260	528	---	41,918	76,024	
07/04/2014	*	---	---	---	3,235	7,536	2,453	867	283,619	178,476	82,097	
07/05/2014	*	---	---	---	11,378	8,108	1,412	614	---	87,858	107,050	
07/06/2014	*	---	---	---	7,950	7,701	2,440	439	456,607	53,801	128,182	
07/07/2014	*	---	---	---	2,846	5,890	2,178	472	---	79,300	108,541	
07/08/2014	*	---	---	---	4,680	4,701	3,479	382	200,577	172,959	99,582	
07/09/2014	*	---	---	---	4,797	4,355	2,713	343	---	104,660	129,087	
07/10/2014	*	---	---	---	2,859	5,138	1,653	470	316,848	53,204	155,248	
07/11/2014	*	---	---	---	---	---	---	---	---	---	122,949	
<b>Total:</b>		<b>0</b>	<b>4</b>	<b>0</b>	<b>106,612</b>	<b>126,966</b>	<b>54,875</b>	<b>5,586</b>	<b>2,275,095</b>	<b>1,310,927</b>	<b>1,368,850</b>	
<b># Days:</b>		<b>0</b>	<b>5</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>	
<b>Average:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>7,615</b>	<b>9,069</b>	<b>3,920</b>	<b>399</b>	<b>325,014</b>	<b>93,638</b>	<b>91,257</b>	
<b>YTD</b>		<b>0</b>	<b>26</b>	<b>4</b>	<b>332</b>	<b>834,150</b>	<b>915,112</b>	<b>330,538</b>	<b>21,589</b>	<b>3,547,161</b>	<b>1,787,702</b>	<b>3,416,620</b>

### 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)
06/27/2014 *	---	0	---	---	35	0	7	18	---	238	103
06/28/2014 *	---	---	---	---	0	0	0	4	816	156	173
06/29/2014 *	---	---	---	---	0	0	0	16	---	0	254
06/30/2014 *	---	0	---	---	0	0	0	7	0	0	508
07/01/2014 *	---	0	---	---	0	0	0	9	---	0	0
07/02/2014 *	---	0	---	---	0	0	0	0	0	0	0
07/03/2014 *	---	0	---	---	0	0	0	4	---	0	0
07/04/2014 *	---	---	---	---	0	0	0	7	0	0	0
07/05/2014 *	---	---	---	---	0	0	0	6	---	0	0
07/06/2014 *	---	---	---	---	0	0	0	2	0	0	363
07/07/2014 *	---	---	---	---	0	0	0	2	---	0	0
07/08/2014 *	---	---	---	---	0	0	0	2	0	0	0
07/09/2014 *	---	---	---	---	0	0	0	2	---	0	0
07/10/2014 *	---	---	---	---	0	0	0	0	0	0	0
07/11/2014 *	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>7</b>	<b>79</b>	<b>816</b>	<b>394</b>	<b>1,401</b>
<b># Days:</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>117</b>	<b>28</b>	<b>93</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>267</b>	<b>74,168</b>	<b>59,431</b>	<b>27,316</b>	<b>66,410</b>	<b>147,455</b>	<b>225,116</b>	<b>776,537</b>

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)
06/27/2014 *	---	17	---	---	389	258	178	5	---	644	309
06/28/2014 *	---	---	---	---	703	522	51	7	408	0	258
06/29/2014 *	---	---	---	---	646	317	196	9	---	0	508
06/30/2014 *	---	7	---	---	173	376	55	15	817	3	254
07/01/2014 *	---	7	---	---	204	346	192	8	---	167	236
07/02/2014 *	---	3	---	---	110	172	179	5	1,222	156	347
07/03/2014 *	---	1	---	---	197	159	39	0	---	72	0
07/04/2014 *	---	---	---	---	84	401	40	2	0	0	0
07/05/2014 *	---	---	---	---	188	258	43	4	---	0	0
07/06/2014 *	---	---	---	---	59	201	29	2	409	0	0
07/07/2014 *	---	---	---	---	0	14	0	7	---	0	0
07/08/2014 *	---	---	---	---	59	44	97	2	409	0	0
07/09/2014 *	---	---	---	---	74	57	32	4	---	0	708
07/10/2014 *	---	---	---	---	45	57	44	11	0	157	360
07/11/2014 *	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>2,931</b>	<b>3,182</b>	<b>1,175</b>	<b>81</b>	<b>3,265</b>	<b>1,199</b>	<b>2,980</b>
<b># Days:</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>
<b>Average:</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>227</b>	<b>84</b>	<b>6</b>	<b>466</b>	<b>86</b>	<b>199</b>
<b>YTD</b>	<b>2,080</b>	<b>43,452</b>	<b>4,243</b>	<b>12,842</b>	<b>3,376,004</b>	<b>1,975,168</b>	<b>1,183,069</b>	<b>27,388</b>	<b>586,066</b>	<b>1,032,890</b>	<b>458,880</b>

### 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)	
06/27/2014	*	---	0	---	---	0	29	27	2	---	0	257
06/28/2014	*	---	---	---	---	35	29	22	0	408	0	129
06/29/2014	*	---	---	---	---	46	0	20	0	---	0	846
06/30/2014	*	---	0	---	---	0	29	27	4	817	76	521
07/01/2014	*	---	0	---	---	68	57	41	0	---	84	0
07/02/2014	*	---	0	---	---	41	0	0	0	407	78	73
07/03/2014	*	---	0	---	---	33	64	39	2	---	144	366
07/04/2014	*	---	---	---	---	0	29	0	2	0	76	0
07/05/2014	*	---	---	---	---	87	14	14	4	---	0	0
07/06/2014	*	---	---	---	---	30	29	0	3	412	158	388
07/07/2014	*	---	---	---	---	30	0	0	2	---	0	330
07/08/2014	*	---	---	---	---	15	43	14	4	409	0	0
07/09/2014	*	---	---	---	---	30	14	0	5	---	0	25
07/10/2014	*	---	---	---	---	0	29	15	0	410	0	0
07/11/2014	*	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>415</b>	<b>366</b>	<b>219</b>	<b>28</b>	<b>2,863</b>	<b>616</b>	<b>2,935</b>
<b># Days:</b>		<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>26</b>	<b>16</b>	<b>2</b>	<b>409</b>	<b>44</b>	<b>196</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>181,870</b>	<b>88,275</b>	<b>69,673</b>	<b>37,861</b>	<b>1,495,357</b>	<b>577,122</b>	<b>589,309</b>

COMBINED LAMPREY JUVENILES												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
06/27/2014	*	---	0	---	---	0	20	0	1	---	800	120
06/28/2014	*	---	---	---	---	0	0	0	0	200	600	67
06/29/2014	*	---	---	---	---	0	120	0	0	---	900	100
06/30/2014	*	---	0	---	---	0	20	0	0	1,800	802	5
07/01/2014	*	---	0	---	---	0	0	0	1	---	750	0
07/02/2014	*	---	0	---	---	5	50	0	0	1,400	650	10
07/03/2014	*	---	0	---	---	3	0	0	0	---	750	286
07/04/2014	*	---	---	---	---	1	0	0	0	1,200	400	0
07/05/2014	*	---	---	---	---	1	40	10	1	---	300	286
07/06/2014	*	---	---	---	---	2	0	10	0	600	400	0
07/07/2014	*	---	---	---	---	0	40	0	0	---	133	143
07/08/2014	*	---	---	---	---	0	0	0	2	6,800	400	0
07/09/2014	*	---	---	---	---	0	10	0	0	---	143	10
07/10/2014	*	---	---	---	---	3	10	10	0	0	100	0
07/11/2014	*	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>310</b>	<b>30</b>	<b>5</b>	<b>12,000</b>	<b>7,128</b>	<b>1,027</b>
<b># Days:</b>		<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>15</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>1,714</b>	<b>509</b>	<b>68</b>
<b>YTD</b>		<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>119</b>	<b>19,823</b>	<b>29,442</b>	<b>40</b>	<b>52,855</b>	<b>94,266</b>	<b>17,683</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:

7/11/14 11:34 AM

**06/27/14 TO 07/11/14**

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	72,665	770		25	1,950	280	75,690
	Sum of NumberBarged	82,452	886		25	2,436	351	86,150
	Sum of NumberBypassed	37	0		0	0	0	37
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	53	4		0	2	1	60
	Sum of FacilityMorts	105	5		0	7	2	119
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	158	9		0	9	3	179
<b>LGS</b>	Sum of NumberCollected	86,790	360			2,184	250	89,584
	Sum of NumberBarged	89,771	500			2,540	228	93,039
	Sum of NumberBypassed	15	0			0	0	15
	Sum of Numbertrucked	0	0			0	0	0
	Sum of SampleMorts	8	0			0	1	9
	Sum of FacilityMorts	59	0			4	1	64
	Sum of ResearchMorts	0	0			0	0	0
	Sum of TotalProjectMorts	67	0			4	2	73
<b>LMN</b>	Sum of NumberCollected	38,349	520		5	804	150	39,828
	Sum of NumberBarged	37,972	529		5	790	170	39,466
	Sum of NumberBypassed	154	0		0	9	0	163
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	7	0		0	1	0	8
	Sum of FacilityMorts	38	1		0	2	1	42
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	45	1		0	3	1	50
Total Sum of NumberCollected		197,804	1,650		30	4,938	680	205,102
Total Sum of NumberBarged		210,195	1,915		30	5,766	749	218,655
Total Sum of NumberBypassed		206	0		0	9	0	215
Total Sum of Numbertrucked		0	0		0	0	0	0
Total Sum of SampleMorts		68	4		0	3	2	77
Total Sum of FacilityMorts		202	6		0	13	4	225
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		270	10		0	16	6	302



### YTD Transportation Summary

Source: Fish Passage Center

Updated: 7/11/14 11:34 AM

TO: 07/11/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	589,315	3,442,332	52,722	130,880	2,404,134	6,619,383
	Sum of NumberBarged	574,214	1,939,435	48,991	70,784	1,326,739	3,960,163
	Sum of NumberBypassed	11,716	1,501,375	3,722	59,638	1,077,085	2,653,536
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	186	138	1	45	58	428
	Sum of FacilityMorts	1,295	1,305	8	413	116	3,137
	Sum of ResearchMorts	2	79	0	0	107	188
	Sum of TotalProjectMorts	1,483	1,522	9	458	281	3,753
<b>LGS</b>	Sum of NumberCollected	648,231	1,951,705	41,832	61,122	1,369,314	4,072,204
	Sum of NumberBarged	643,419	1,768,363	40,932	54,755	1,149,119	3,656,588
	Sum of NumberBypassed	315	182,657	890	6,109	220,102	410,073
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	42	34	1	14	16	107
	Sum of FacilityMorts	883	651	9	224	167	1,934
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	925	685	10	238	183	2,041
<b>LMN</b>	Sum of NumberCollected	230,667	1,326,133	19,905	48,293	792,063	2,417,061
	Sum of NumberBarged	227,538	1,138,491	17,505	45,021	686,074	2,114,629
	Sum of NumberBypassed	363	177,066	0	2,568	89,955	269,952
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	12	25	0	1	17	55
	Sum of FacilityMorts	237	963	0	300	191	1,691
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	249	988	0	301	208	1,746
Total Sum of NumberCollected		1,468,213	6,720,170	114,459	240,295	4,565,511	13,108,648
Total Sum of NumberBarged		1,445,171	4,846,289	107,428	170,560	3,161,932	9,731,380
Total Sum of NumberBypassed		12,394	1,861,098	4,612	68,315	1,387,142	3,333,561
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		240	197	2	60	91	590
Total Sum of FacilityMorts		2,415	2,919	17	937	474	6,762
Total Sum of ResearchMorts		2	79	0	0	107	188
Total Sum of TotalProjectMorts		2,657	3,195	19	997	672	7,540

Cumulative Adult Passage at Mainstem Dams Through: 07/10

DAM	ENDDATE	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	07/10	188083	26094	83345	33820	130283	22257	92396	19424	77193	22937	72253	15779	0	0	0	0	0	0
TDA	07/10	143142	21080	69202	32311	99813	18973	78558	14012	69607	17625	60213	11981	0	0	0	0	0	0
JDA	07/10	123224	19103	56991	28957	87036	17743	68457	12180	60134	16165	52928	12008	0	0	0	0	0	0
MCN	07/10	107147	16033	52176	22279	79413	14950	66698	11137	59241	11784	47238	8520	0	0	0	0	0	0
IHR	07/10	79298	12428	38017	18611	54814	9602	13554	3697	9717	5624	14738	3874	0	0	0	0	0	0
LMN	07/10	79942	14020	36470	19053	54458	8539	11989	6219	9122	6614	15888	3824	0	0	0	0	0	0
LGS	07/10	77966	13649	35072	19443	49920	9660	11835	5449	7211	6059	14415	4353	0	0	0	0	0	0
LGR	07/10	79167	13732	35031	19940	49728	11001	10140	4650	6160	5384	12776	4545	0	0	0	0	0	0
PRD	07/08	23742	2649	13725	1298	14700	1468	44191	1414	42059	1302	28743	1071	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	07/08	23247	2934	13345	3100	13890	2468	39182	918	34978	1116	22124	1751	0	0	0	0	0	0
RRH	07/08	12376	2377	6841	2101	5576	1020	24912	523	25482	922	12701	982	0	0	0	0	0	0
WEL	07/06	15376	2544	7133	2980	4880	1164	9992	395	11345	915	4883	247	0	0	0	0	0	0
WFA	07/08	27777	1252	26521	1446	38775	977	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	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	07/10	5	-2	0	0	0	0	551530	163898	182665	32210	12482	29436	14859	4845	11778	16072	11127	11741
TDA	07/10	0	0	0	0	0	0	509339	138753	148385	14245	5237	13984	7328	2130	6041	2862	2193	1728
JDA	07/10	0	1	0	0	0	0	468101	130863	146370	11006	4644	14227	4945	1819	5115	1863	1454	1028
MCN	07/10	0	0	1	0	1	0	409106	104892	118171	6458	4093	10770	2762	1375	3460	164	190	191
IHR	07/10	0	0	0	0	0	0	1039	657	336	4942	5689	7139	1600	1831	1945	35	42	17
LMN	07/10	0	0	0	0	0	0	1011	647	375	4288	3845	9099	1700	1654	3370	12	7	2
LGS	07/10	0	0	0	0	0	0	954	477	311	2918	2670	7777	1512	1297	2593	3	7	1
LGR	07/10	0	0	0	0	0	0	740	279	296	8374	7709	9631	3816	3308	3376	1	4	1
PRD	07/08	0	0	0	0	0	0	302061	93032	110408	612	387	544	0	0	0	114	149	105
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	07/08	0	0	0	0	0	0	208491	70880	75522	492	285	369	295	204	245	6	9	5
RRH	07/08	0	0	0	0	0	0	140427	48608	52318	328	255	543	191	200	378	0	0	0
WEL	07/06	0	0	0	0	0	0	65647	24953	21717	164	112	118	99	94	79	0	0	2
WFA	07/08	9	0	2	0	0	0	0	0	0	23171	16534	23240	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.