



# Fish Passage Center

## Weekly Report #14 - 16

July 3, 2014

847 NE 19th Ave., Suite 250  
 Portland, OR 97232  
 phone: (503) 833-3900  
 fax: (503) 232-1259

### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 0% and 7% of average at individual sub-basins over the first 2 days of July. Precipitation above The Dalles has been 4% of average over early July. Over the 2014 water year, precipitation has ranged between 76% and 101% of average.

**Table 1.** Summary of July precipitation and cumulative October through July 2, 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 1–2, 2014		October 1, 2013 to July 2, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.00	1	30.1	94
S Snake River above Ice Harbor	0.00	7	15.7	79
Columbia above The Dalles	0.00	4	20.2	84
Kootenai	0.00	0	31.9	98
Clark Fork	0.00	0	19.6	82
Flathead	0.00	0	31.3	101
Pend Oreille River Basin above Waneta Dam	0.00	0	25.8	91
Salmon River Basin	0.00	4	19.1	76
Upper Snake Tributaries	0.00	0	20.7	88
Clearwater	0.00	1	33.5	91
Willamette River above Portland	0.00	7	51.0	84

Table 2 displays the July 2<sup>nd</sup> ESP runoff volume forecasts for multiple reservoirs along with the June COE forecasts at Libby and Dworshak. The July 2<sup>nd</sup> ESP forecast at The Dalles between January and July is 108,015 Kaf (107% of average).

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

Location	July 2, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	107	108015
Grand Coulee (Jan–July)	109	64948
Libby Res. Inflow, MT (Apr–Aug)	119	6977 7074*
Hungry Horse Res. Inflow, MT (Jan–July)	130	2731
Lower Granite Res. Inflow (Apr–July)	100	19831
Brownlee Res. Inflow (Apr–July)	63	3460
Dworshak Res. Inflow (Apr–July)	124	3004 2933*

\* Denotes COE June Forecast

Grand Coulee Reservoir is at 1285.9 feet (7-2-14) and has drafted 0.9 feet over the last week (4.1 feet from full). Outflows at Grand Coulee have ranged between 175.7 and 187.3 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2446.1 feet (7-2-14) and has refilled 4.5 feet over the previous week (12.9 feet from full). Libby Dam is projected to refill by late July or early August. The daily average outflows at Libby Dam have been 15.0–17.0 over the last week.

Hungry Horse is currently at an elevation of 3558.2 feet (7-2-14) and has refilled 3.4 feet over the previous week (1.8 feet from full). Outflows at Hungry Horse have been 5.7 to 7.9 Kcfs over the last week.

Dworshak is currently at an elevation of 1599.5 feet (7-2-14) and has held steady over the previous week (0.5 feet from full). Outflows at Dworshak have been 1.5–11.5 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2075.9 feet on July 2, 2014 (1.1 feet from full). Inflows to Brownlee Dam have ranged between 14.7 and 15.1 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 70.4 Kcfs over the last week and 68.9 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 288.4 Kcfs over the first 2 days of 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 had some level of excess generation spill over the weekend of June 28<sup>th</sup> and 29<sup>th</sup>, which resulted in the projects exceeding the summer spill levels specified in the Fish Operations Plan (FOP). Spill equal or greater than 18 Kcfs

occurred at Lower Granite Dam. Spill at Little Goose Dam averaged at least the 30% of total flow volume specified in the FOP. At Lower Monumental Dam spill ranged between the summertime 17 Kcfs, and a daily average of 32 Kcfs. 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>. At times spill exceeded those levels.

<b>Project</b>	<b>Spill Level Day/Night</b>
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, again with a few higher spill hours over the past weekend.

<b>Project</b>	<b>Spill Level Day/Night</b>
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. No sites reported GBT signs this past week. 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 for 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 all of the Lower Columbia (BON, JDA, and MCN), Upper Columbia (RIS), and most of the Snake River (LGS and LMN) sites. The only site where subyearling Chinook passage decreased this week, when compared to last week, was Lower Granite Dam.

Subyearling Chinook passage at Bonneville Dam (BON) increased again this week, when compared to the previous week. The daily average passage index for subyearling Chinook at BON this week was about 60,000 per day. Last week's daily average passage index was only 11,000 per day. Only Pacific lamprey macrophthalmia were collected in this week's samples. This week's daily average collection for Pacific lamprey macrophthalmia at BON was about 50 per day, which is a decrease over last week's daily average collection of about 100 per day.

Subyearling Chinook passage at John Day Dam (JDA) increased again this week. This week's daily average passage index for subyearling Chinook was nearly 90,000 per day. Last week's daily average passage index for subyearling Chinook was about 33,700 per day. Pacific lamprey ammocoetes were encountered in only one of this week's samples while Pacific lamprey macrophthalmia were present every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was about 730 per day, which is an increase from last week's daily average collection of about 400 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Subyearling Chinook passage increased again this week when compared to the previous week. The daily average passage index for subyearling Chinook at MCN this week was about 340,000 per day. Last week's daily average passage index for subyearling Chinook was about 230,000. Pacific lamprey macrophthalmia were encountered every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was about 1,100 per day, which is a decrease from last week's daily average collection of about 2,800 per day.

This week's daily average passage index for subyearling Chinook at Lower Granite Dam (LGR) was about 10,500 per day, which is a slight decrease from last week's daily average passage index of about 11,300 per day. Four Pacific lamprey ammocoetes and one macrophthalmia were sampled at LGR on July 2<sup>nd</sup>.

This week's daily average passage index for subyearling Chinook was about 13,000 per day, which is an increase over last week's daily average passage index of about 10,800 per day. Pacific lamprey ammocoetes and macrophthalmia were collected in three of this week's samples.

Subyearling Chinook passage also increased at Lower Monumental Dam (LMN) this week. This week's daily average passage index for subyearling Chinook at LMN was about 6,200 per day. Last week's daily average passage index was about 3,500 per day. Only Pacific lamprey macrophthalmia have been collected so far this year at LMN. However, no lamprey juveniles were collected this week at LMN.

Passage of subyearling Chinook at Rock Island Dam (RIS) increased slightly this week, when compared to last week. This week's daily average passage index for subyearling Chinook was about 245 per day, whereas that for last week was about 200 per day. So far this year, only Pacific lamprey macrophthalmia have been collected at RIS. One Pacific lamprey macrophthalmia was encountered on each of two separate days this week.

The Imnaha River Trap (IMN) is located at river kilometer seven and is operated by the Nez Perce Tribe. Sampling at IMN is year-round, however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. Due to high temperatures, collections were suspended after the June 24<sup>th</sup> sample.

In their sample from June 26<sup>th</sup>, SMP personnel at John Day Dam reported seeing clipped subyearling Chinook with signs of what looked like *Ichthyophthirius (Ich)*, a common disease in freshwater fish. In all, 132 clipped subyearling Chinook were examined for condition in the June 27<sup>th</sup> sample and 41.7% had signs of *Ich*. Sample mortality of subyearling Chinook at JDA on June 27<sup>th</sup> was 4.0% overall (clipped 6.0%, unclipped 0%). All subyearling Chinook mortalities at JDA had signs of *Ich*. FPC staff confirmed on June 27<sup>th</sup> that subyearling Chinook with *Ich* were from the 9-acre pond at Ringold Springs Hatchery. In all, approximately 2.5 million fish were released from this pond between June 20<sup>th</sup> and June 23<sup>rd</sup>. *Ich* levels among clipped subyearling Chinook at JDA have steadily decreased over the past week. Sample mortality of subyearling Chinook at JDA peaked on June 28<sup>th</sup> (at 4.1%) and has decreased since. In fact, sample mortality in the latest sample (July 2<sup>nd</sup>) was 0.4%, which is more typical for this project. SMP personnel at Bonneville Dam began seeing clipped subyearling Chinook with signs of *Ich* in their July 1<sup>st</sup> sample. SMP personnel at McNary Dam confirmed that they too have seen clipped subyearling Chinook with signs of *Ich*. However, they did not begin recording these fish in their condition sample until the June 28<sup>th</sup> sample but suspect they were present as far back as the June 24<sup>th</sup> sample, which coincided with a daily sample mortality rate of 5.0% among subyearling Chinook.

## 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 300,000 spring Chinook parr were scheduled for release into the Upper Selway River this week. All of these spring Chinook parr are 100% unmarked and are not expected to out-migrate until the spring of 2015. 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 new releases scheduled for this zone this week. Furthermore, there are no new releases 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. Approximately 6.55 million subyearling fall Chinook brights were scheduled for release into the Little White River this week. There are no releases scheduled for this zone over the next 2 weeks.

## Adult Passage

Daily passage numbers at Bonneville Dam ranged between 1,753 and 2,868 adult summer Chinook in the last week. The 2014 summer Chinook count of 77,474 is about 1.2 times greater than both the 2013 count and the 10-year average. The 2014 Bonneville Dam summer Chinook jack count of 15,238 is 77.3% of the 2013 count, while having 1,859 more fish than the 10-year average count. At McNary Dam 50,435 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 1.3 times greater than the 10-year average. The 2014 McNary Dam summer Chinook jack count of 8,674 is about 91.4% of the 2013 count, while being about 1.3 times greater than the 10-year average count. The 2014 adult summer Chinook count of 6,963 at Lower Granite Dam in the Snake River is about 1.5 times greater than the 2013 count, while being 69.3% of the 10-year average count. The 2014 Lower Granite summer Chinook jack count of 2,993 is about 77% of the 2013 count and about 93.8% of the 10-year average count.

The 2014 Bonneville Dam adult steelhead count of 17,923 is about 2.2 times greater than the 2013 count of 8,065 and has 70 more fish than the 10-year average count of 17,853. The 2014 Bonneville Dam adult wild steelhead count of 6,618 is about 2.7 times greater than the 2013 count of 2,433 and has 691 more fish than the 10-year average count of 5,927. Daily adult steelhead counts at Lower Granite Dam ranged from 16 to 35 adults per day last week. This year's Lower Granite steelhead count of 7,871 has 304 more fish than the 2013 count of 7,567, while being about 86.3% of the 10-year average count of 9,121. The 2014 Lower Granite Dam adult wild steelhead count of 3,566 has 304 more fish than the 2013 count of 3,262 and has 353 more fish than the 10-year average count of 3,213. At Willamette Falls, the 2014 count for steelhead was 20,552 as of June 26<sup>th</sup>. This year's steelhead count is about 1.3 times greater than the 2013 count of 15,792, while being about 96.4% of the 10-year average count of 21,312.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 19,588 and 30,262 last week. The 2014 adult sockeye count at Bonneville Dam of 363,853 is about 2.8 times greater than the 2013 count and about 2.4 times greater than the 10-year average count. The 2014 McNary Dam adult sockeye count of 221,197 is about 3.1 times greater than the 2013 count of 71,240 and about 2.6 times greater than the 10-year average count of 83,985. The Lower Granite Dam 2014 adult sockeye count of 149 has 75 more fish than the 2013 count of 74 and 98 more fish than the 10-year average of 51. As of July 2<sup>nd</sup> at Bonneville Dam, the adult shad count was 2,581,641. This year's shad count is about 69.9% of the 2013 count of 3,694,143 and 96% of the 10-year average count of 2,687,836.

## *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 fishway 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<sup>nd</sup>, 2014, over a several hour period, the left bank weir successfully passed well over a thousand fish (predominantly sockeye and Chinook). On July 2<sup>nd</sup>, 2014, a very large majority of the fish passed via 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.

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 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.

### Hatchery Releases Last Two Weeks

Agency	Hatchery	Species	Race	MigYr	Hatchery Release Summary		RelStart	RelEnd	RelSite	RelRiver
					From:	to				
Nez Perce Tribe	Dworshak NFH	CH0	SP	2015	300,000	6/19/2014	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 Tribe 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
<b>U.S. Fish and Wildlife Service Total</b>					<b>6,551,392</b>					
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2014	3,450,000	06-16-14	06-27-14		Ringold Springs Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>3,450,000</b>					
<b>Grand Total</b>					<b>10,701,392</b>					

### Hatchery Releases Next Two Weeks

#### Hatchery Release Summary

From: 7/3/2014 to 7/16/2014

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CH0	SP	2015	300,000	07-01-14	07-05-14	Selway River	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>300,000</b>				
<b>Grand Total</b>					<b>300,000</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
06/19/2014	173.5	1.7	173.3	43.4	197.1	28.7	191.5	32.4	194.4	37.4	188.8	61.7	203.4	78.8
06/20/2014	177.2	2.6	174.2	50.2	193.6	21.4	187.2	23.8	191.0	36.8	180.3	60.4	190.9	73.9
06/21/2014	175.7	0.1	173.7	49.7	195.4	19.3	192.9	24.8	198.6	36.9	194.4	67.9	208.5	84.2
06/22/2014	175.8	0.1	180.8	49.8	199.1	16.1	191.8	17.8	196.4	36.8	191.4	69.8	204.9	80.0
06/23/2014	173.2	0.1	174.9	44.3	195.0	21.4	193.0	27.2	196.9	36.7	196.4	68.4	213.7	81.9
06/24/2014	177.3	6.2	173.6	47.9	183.2	10.0	184.4	17.8	190.6	38.3	188.1	61.9	204.3	76.1
06/25/2014	175.7	4.7	170.8	50.3	191.0	23.3	188.5	16.6	196.5	37.8	188.9	60.4	198.0	72.8
06/26/2014	175.8	0.1	178.1	47.6	195.3	30.2	186.2	16.4	195.9	38.9	191.7	60.4	205.9	75.4
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

**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
06/19/2014	1.5	0.0	16.4	17.6	68.6	20.3	66.1	19.7	66.5	29.4	67.7	42.2		
06/20/2014	1.5	0.0	16.3	15.9	67.0	20.5	63.5	19.1	63.0	30.0	64.8	51.2		
06/21/2014	1.5	0.0	16.3	16.0	64.3	19.8	63.9	19.1	63.1	17.6	65.9	29.2		
06/22/2014	1.5	0.0	16.0	16.9	67.8	18.8	67.9	20.3	67.5	17.0	68.6	20.6		
06/23/2014	1.5	0.0	15.8	17.7	67.1	18.8	65.0	19.4	65.8	16.9	69.5	44.2		
06/24/2014	1.5	0.0	15.6	16.4	68.1	18.8	66.5	19.9	63.9	16.9	66.0	48.8		
06/25/2014	1.5	0.0	15.4	15.4	66.0	19.0	64.1	19.1	65.4	16.7	68.8	30.8		
06/26/2014	1.5	0.0	14.8	14.2	65.5	18.8	63.3	19.0	63.8	17.0	65.1	19.4		
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	---	17.1	65.5	18.5	63.4	18.9	64.3	17.0	67.8	53.6		

**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		
06/19/2014	261.9	131.1	251.9	95.9	235.0	93.8	252.6	96.1	41.0	103.1
06/20/2014	260.4	130.5	239.1	72.1	222.2	89.1	245.9	100.3	31.5	101.6
06/21/2014	265.3	133.1	264.7	84.1	246.4	98.4	266.8	95.2	56.0	103.2
06/22/2014	299.0	149.5	299.4	119.4	285.2	113.6	285.4	91.6	74.2	107.1
06/23/2014	291.4	145.9	275.1	105.6	260.7	103.8	284.6	95.1	74.1	102.9
06/24/2014	279.8	140.1	270.0	81.1	253.3	106.6	264.7	99.5	50.1	102.7
06/25/2014	271.2	135.7	281.3	89.0	260.9	104.7	282.0	95.2	72.4	102.0
06/26/2014	278.3	139.3	260.7	104.0	246.2	98.0	266.8	90.9	62.5	100.9
06/27/2014	274.7	137.6	267.5	102.1	248.2	98.4	277.9	95.3	67.5	102.2
06/28/2014	276.5	138.6	261.8	78.5	248.5	105.7	266.0	101.8	48.9	102.4
06/29/2014	288.5	144.6	286.9	91.1	265.5	118.7	280.7	102.6	60.4	104.7
06/30/2014	299.4	149.9	299.9	120.3	285.2	114.8	297.5	91.5	68.2	124.9
07/01/2014	288.8	144.5	279.6	107.3	265.8	106.2	294.3	94.7	67.1	119.7
07/02/2014	288.0	144.1	276.6	83.3	262.8	105.3	280.2	99.3	63.2	105.3

## 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>											
	06/23/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/30/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	06/25/14	Chinook + Steelhead	38	0	0	0.00%	0.00%	0	0	0	0
	07/02/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	06/19/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/23/14	Chinook + Steelhead	100	1	0	0.00%	0.00%	0	0	0	0
	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
<b>Bonneville Dam</b>											
	06/21/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/24/14	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
	07/01/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	06/19/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/01/14	Chinook + Steelhead	54	0	0	0.00%	0.00%	0	0	0	0

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

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

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>	
6/19	104.2	104.6	105.0	24	---	---	---	0	118.4	118.8	119.2	24	115.5	115.8	116.0	24	115.7	116.0	116.4	24
6/20	104.3	104.8	105.2	24	---	---	---	0	118.7	119.1	119.3	24	115.7	116.0	116.1	24	115.2	115.3	115.5	24
6/21	104.7	105.0	105.3	24	---	---	---	0	118.0	118.3	118.8	24	115.7	116.3	116.8	24	115.1	115.4	115.7	24
6/22	104.8	105.2	105.6	24	---	---	---	0	118.2	118.8	119.0	24	115.7	116.2	116.4	24	115.8	116.5	117.1	24
6/23	105.1	105.5	106.0	24	---	---	---	0	117.9	118.0	118.2	24	115.9	116.4	116.8	24	116.9	117.3	117.5	24
6/24	105.5	105.7	106.2	24	---	---	---	0	118.1	118.6	118.8	24	115.8	116.1	116.4	24	116.4	116.6	117.0	24
6/25	105.1	105.4	105.7	24	---	---	---	0	118.5	118.8	119.0	24	115.9	116.7	117.4	24	116.4	116.8	117.2	24
6/26	105.6	105.7	106.1	24	---	---	---	0	118.8	119.0	119.4	24	116.7	117.2	117.6	24	116.8	116.9	117.1	24
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	23	---	---	---	0	116.8	117.3	117.5	23	114.5	114.8	115.1	23	115.9	116.1	116.3	23

**Total Dissolved Gas Saturation Data at Mid Columbia River Sites**

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>	
6/19	114.7	115.7	116.0	24	113.8	114.0	114.3	17	116.4	116.6	116.9	17	113.4	113.8	114.1	24	118.9	119.7	120.1	24
6/20	115.8	116.1	116.3	24	114.0	114.2	114.4	18	115.9	116.5	117.2	18	114.5	114.8	115.0	24	119.0	119.7	120.4	24
6/21	115.8	116.0	116.2	24	113.6	113.8	114.0	22	115.5	115.9	116.3	22	113.6	113.9	114.0	24	117.9	118.7	119.8	24
6/22	115.9	116.1	116.3	24	114.3	114.5	115.3	16	115.8	116.1	117.2	16	114.6	115.3	115.6	24	117.5	118.2	118.7	24
6/23	114.7	115.7	115.9	24	115.5	115.8	116.0	18	117.5	117.9	118.2	18	115.4	115.9	116.1	24	119.1	119.6	119.8	24
6/24	115.3	115.9	116.1	24	115.0	115.1	115.8	14	115.7	115.8	116.6	14	116.0	116.3	116.4	24	118.7	118.9	119.1	24
6/25	115.8	116.0	116.1	24	115.4	115.9	116.2	19	118.0	119.3	120.3	19	115.3	115.5	115.7	24	118.1	118.6	118.8	24
6/26	115.4	115.9	116.2	24	116.0	116.2	116.3	17	118.5	118.7	119.5	17	116.5	117.3	117.6	24	118.8	119.5	119.8	24
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	115.2	116.0	21	115.5	115.7	116.0	19	117.8	118.4	119.6	19	117.0	117.5	117.6	23	120.1	120.4	121.0	23

**Total Dissolved Gas Saturation at Mid Columbia River Sites**

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>		<u>24 h Avg</u>	<u>12 h Avg</u>	<u>High</u>	
6/19	113.5	114.8	116.0	24	116.7	118.6	119.1	24	113.8	115.1	115.7	24	117.2	117.8	118.3	24	114.2	117.0	118.4	24
6/20	113.9	114.6	115.1	24	117.0	118.6	119.0	24	113.7	114.5	114.8	24	117.5	118.6	119.5	24	115.3	116.3	117.2	24
6/21	113.7	114.8	116.0	24	116.9	118.7	119.6	24	113.9	115.5	115.9	24	117.6	118.7	118.9	24	115.2	116.5	118.2	24
6/22	113.7	115.0	115.6	24	116.9	119.3	119.8	24	115.4	116.4	117.0	24	119.0	119.4	119.6	24	118.2	119.0	119.5	24
6/23	115.1	115.8	116.2	24	117.3	119.6	119.9	24	115.6	116.8	117.7	24	119.2	119.8	120.4	24	118.2	118.8	119.1	24
6/24	114.8	115.5	116.0	24	118.1	119.7	120.0	24	114.3	115.3	115.7	24	118.0	118.3	118.7	24	116.0	116.4	117.9	24
6/25	114.7	115.4	115.8	24	116.4	117.0	119.2	24	116.2	117.5	117.8	24	118.7	119.4	119.8	24	116.9	118.2	119.2	24
6/26	115.1	116.1	116.8	24	116.3	117.0	118.5	24	115.2	115.8	116.7	24	117.9	118.5	118.8	24	117.8	118.2	118.5	24
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	---	---	---	0	---	---	---	0	---	---	---	0
7/2	116.8	117.8	118.3	23	118.9	119.8	120.2	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst			Pasco			Dworshak			Clrwtr-Peck			Anatone							
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr				
6/19	116.4	116.9	117.3	24	---	---	---	0	106.2	107.5	108.5	24	102.3	103.3	104.1	24	104.4	105.3	106.1	24
6/20	117.0	117.6	118.1	24	---	---	---	0	106.1	107.4	108.6	24	102.3	103.2	103.9	24	103.8	104.4	104.8	24
6/21	117.3	117.9	118.1	24	---	---	---	0	106.1	107.5	108.6	24	102.3	103.3	103.9	24	103.6	104.4	105.2	24
6/22	118.5	118.9	119.1	24	---	---	---	0	106.2	107.6	108.6	24	102.5	103.5	104.2	24	103.7	104.6	105.2	24
6/23	118.9	119.2	119.4	24	---	---	---	0	106.4	107.7	109.0	24	102.6	103.5	104.3	24	103.7	104.6	105.2	24
6/24	117.5	117.8	118.2	24	---	---	---	0	106.1	107.1	108.4	24	102.2	103.0	103.6	24	103.4	104.0	104.5	24
6/25	117.4	117.9	118.6	24	---	---	---	0	106.3	107.5	108.5	24	102.5	103.2	103.7	24	103.5	104.2	104.6	24
6/26	118.3	118.5	118.6	24	---	---	---	0	106.5	107.4	108.3	24	101.8	102.2	102.6	24	103.0	103.4	103.9	24
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	---	---	---	0	---	---	---	0	100.4	100.7	101.0	24	102.0	102.9	103.5	24	103.8	104.8	105.6	24
7/2	---	---	---	0	---	---	---	0	100.9	101.4	101.7	23	102.2	102.9	103.4	23	103.5	104.3	105.0	23

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

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr							
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr				
6/19	102.9	104.4	105.4	24	102.3	102.4	102.6	24	110.9	111.1	111.6	24	107.5	108.3	108.5	24	110.9	111.4	113.6	24
6/20	102.4	103.5	104.2	24	102.7	103.1	103.4	24	110.7	111.1	113.1	24	108.5	108.7	109.0	24	111.1	111.4	111.7	24
6/21	102.2	103.6	104.6	24	103.6	103.9	104.6	24	114.1	114.9	117.8	24	108.6	109.0	109.1	24	111.2	111.5	112.0	24
6/22	102.4	103.8	104.8	24	104.1	104.2	104.4	24	113.5	114.0	114.4	24	109.4	110.0	110.2	24	111.0	111.2	111.3	24
6/23	102.5	103.9	105.0	24	103.8	104.1	104.4	24	113.0	113.7	115.3	24	110.9	111.5	111.8	24	111.5	111.8	112.3	24
6/24	102.0	102.9	103.6	24	103.0	103.2	103.7	24	112.7	113.5	116.2	24	111.9	112.3	112.7	24	111.8	112.1	112.4	24
6/25	102.4	103.6	104.3	24	103.5	103.7	104.0	24	113.3	113.9	115.1	24	113.4	114.0	114.4	24	112.4	113.0	113.5	24
6/26	101.7	102.3	103.2	24	103.3	103.6	103.9	24	113.4	113.9	114.5	24	114.4	114.7	115.1	24	112.6	112.7	112.9	24
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	102.7	104.0	104.8	23	103.7	103.8	103.9	23	112.8	113.1	113.8	23	114.3	114.6	114.9	23	113.0	113.4	114.0	23

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

Date	Lower Mon.			L. Mon. Tlwr			Ice Harbor			Ice Harbor Tlwr			McNary-Oregon							
	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr				
6/19	109.4	109.6	109.8	24	119.2	119.8	120.3	24	113.5	114.1	114.7	24	115.2	115.6	115.9	24	---	---	---	0
6/20	109.9	110.0	110.2	24	119.1	119.5	119.9	24	114.2	114.4	114.6	24	115.4	115.7	115.9	24	---	---	---	0
6/21	109.8	110.0	110.1	24	115.5	115.9	116.9	24	114.0	114.3	114.4	24	114.8	115.7	116.0	24	---	---	---	0
6/22	110.7	111.1	111.3	24	115.5	115.8	116.0	24	114.8	115.3	115.7	24	115.4	115.9	116.2	24	---	---	---	0
6/23	111.9	112.3	112.6	24	115.8	116.3	117.0	24	115.1	115.4	115.5	24	115.5	115.7	116.0	24	---	---	---	0
6/24	112.1	112.3	112.5	24	115.6	115.9	116.2	24	114.0	114.2	114.3	24	115.0	115.7	116.1	24	---	---	---	0
6/25	112.6	113.0	113.2	24	115.6	116.2	116.9	24	114.6	115.0	115.2	24	115.5	115.7	115.9	24	---	---	---	0
6/26	113.1	113.4	113.6	24	115.5	115.8	116.1	24	115.1	115.2	115.4	24	115.6	115.9	116.1	24	---	---	---	0
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	23	116.6	117.0	117.5	23	115.5	115.7	116.0	23	115.3	115.6	116.2	23	---	---	---	0

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

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

Date	McNary-Wash			#	McNary Tlwr			#	John Day			#	John Day Tlwr			#	The Dalles			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
6/19	107.1	107.4	107.7	24	117.9	118.4	118.6	24	103.1	103.6	103.9	24	113.9	115.7	116.3	24	109.0	109.5	110.1	24
6/20	108.3	108.4	108.6	24	117.6	117.9	118.3	24	103.7	104.0	104.2	24	110.9	111.3	112.6	24	107.9	108.9	109.6	24
6/21	109.4	110.6	111.8	24	117.9	118.5	118.6	24	105.0	105.7	106.1	24	112.6	113.6	116.4	24	107.5	108.5	109.0	24
6/22	112.0	112.5	113.3	24	118.7	118.9	119.0	24	107.3	108.2	109.0	24	116.0	116.5	116.7	24	110.3	112.1	113.1	24
6/23	113.5	114.0	114.5	24	118.4	118.8	119.1	24	109.4	110.0	110.4	24	115.6	116.9	118.6	24	112.0	112.5	113.0	24
6/24	114.2	114.6	115.0	24	118.8	119.1	119.8	24	109.6	110.1	110.5	24	114.5	115.2	115.9	24	109.9	110.4	111.4	24
6/25	114.5	115.1	115.4	24	118.8	119.0	119.4	24	111.4	112.4	113.0	24	115.6	116.3	118.6	24	111.4	112.5	112.9	24
6/26	114.8	115.1	115.7	24	118.8	119.1	119.6	24	112.2	112.5	112.8	24	116.9	117.6	117.8	24	112.0	112.4	112.8	24
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	23	118.6	118.8	119.2	23	110.2	110.5	110.8	23	113.6	114.7	116.0	23	111.3	112.6	113.7	23

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

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h	12 h			24 h	12 h			24h	12h			24h	12h			24h	12h		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
6/19	115.9	116.4	116.7	24	109.5	110.7	111.1	24	113.5	114.0	115.5	24	111.1	112.9	114.5	24	116.7	117.8	119.2	24
6/20	115.2	115.7	116.5	24	110.8	110.9	111.2	24	114.5	114.9	115.3	24	111.7	113.2	114.2	24	117.5	117.9	119.1	24
6/21	115.1	115.9	116.5	24	111.2	111.7	111.9	24	113.9	114.3	114.6	24	112.4	113.4	114.1	24	118.0	118.1	118.4	24
6/22	117.3	118.4	118.8	24	112.7	113.3	113.7	24	114.0	114.4	115.8	24	113.0	114.1	114.9	24	117.0	117.8	119.5	24
6/23	117.6	118.0	118.3	24	114.3	114.7	114.9	24	115.5	116.1	117.3	24	113.8	115.1	116.8	24	117.0	118.0	119.6	24
6/24	117.0	117.9	119.5	24	113.1	113.3	113.9	24	115.9	116.5	117.3	24	114.3	116.1	117.3	24	118.1	118.5	118.7	24
6/25	117.0	117.8	118.2	24	114.5	116.1	117.2	24	115.5	116.4	117.0	24	114.3	115.0	115.7	24	119.0	119.3	120.2	24
6/26	117.4	117.8	118.1	24	114.4	115.2	116.2	24	115.4	116.0	116.9	24	114.2	114.5	114.9	24	117.1	118.1	119.6	24
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	117.5	118.1	118.7	23	116.6	118.2	119.2	23	117.1	118.0	118.6	23	---	---	---	0	119.1	119.7	120.3	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/3/2014 7:27

### Two-Week Summary of Passage Indices

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

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

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

For sockeye and yearling chinook (Snake only) race information see: <http://www.fpc.org/smoltqueries/currentsmptsubmitdata.asp>

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
06/19/2014	*	---	10	---	---	483	937	133	2	---	406	346
06/20/2014	*	---	6	---	---	360	358	97	2	410	157	513
06/21/2014	*	---	5	---	---	111	143	69	0	---	126	310
06/22/2014	*	---	---	---	---	210	286	27	4	0	346	183
06/23/2014	*	---	4	---	---	379	143	27	0	---	125	157
06/24/2014		---	8	---	---	386	185	14	0	1,222	312	315
06/25/2014	*	---	---	---	---	35	158	40	2	---	477	21
06/26/2014		---	---	---	---	175	201	14	0	0	598	53
06/27/2014	*	---	---	---	---	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		---	---	---	---	138	58	82	0	1,632	153	0
07/01/2014	*	---	---	---	---	170	29	55	2	---	251	0
07/02/2014		---	---	---	---	14	0	102	0	407	389	49
07/03/2014		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>2,849</b>	<b>2,798</b>	<b>938</b>	<b>12</b>	<b>3,671</b>	<b>3,949</b>	<b>2,558</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>14</b>
<b>Average:</b>		<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>204</b>	<b>200</b>	<b>67</b>	<b>1</b>	<b>524</b>	<b>282</b>	<b>183</b>
<b>YTD</b>		<b>65,404</b>	<b>63,498</b>	<b>25,420</b>	<b>10,159</b>	<b>4,807,049</b>	<b>2,838,568</b>	<b>1,969,233</b>	<b>26,425</b>	<b>2,022,048</b>	<b>2,315,782</b>	<b>2,149,537</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)	
06/19/2014	*	---	1	---	---	32,808	41,869	4,660	1,225	---	9,912	6,913
06/20/2014	*	---	0	---	---	15,554	16,044	5,504	393	73,499	14,691	8,861
06/21/2014	*	---	0	---	---	11,359	11,041	8,031	313	---	24,740	10,137
06/22/2014	*	---	---	---	---	10,862	11,273	4,667	206	107,689	24,399	7,722
06/23/2014	*	---	0	---	---	6,995	11,692	2,082	51	---	20,744	14,804
06/24/2014		---	0	---	---	9,151	9,905	1,031	102	229,356	28,010	11,700
06/25/2014	*	---	---	---	---	8,751	6,358	1,636	161	---	42,534	10,004
06/26/2014		---	---	---	---	16,635	9,510	1,275	221	515,033	80,677	13,749
06/27/2014	*	---	---	---	---	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		---	---	---	---	8,191	15,547	8,613	416	266,322	63,038	93,431
07/01/2014	*	---	---	---	---	8,678	14,994	11,317	301	---	49,650	83,046
07/02/2014		---	---	---	---	7,810	6,298	7,019	284	537,627	35,806	63,197
07/03/2014		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>175,198</b>	<b>195,806</b>	<b>66,173</b>	<b>4,143</b>	<b>1,943,021</b>	<b>784,458</b>	<b>443,980</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>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12,514</b>	<b>13,986</b>	<b>4,727</b>	<b>296</b>	<b>277,574</b>	<b>56,033</b>	<b>31,713</b>
<b>YTD</b>		<b>0</b>	<b>22</b>	<b>4</b>	<b>332</b>	<b>790,621</b>	<b>866,260</b>	<b>312,950</b>	<b>17,474</b>	<b>2,289,510</b>	<b>1,015,526</b>	<b>2,407,860</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)	
06/19/2014 *	---	0	---	---	0	0	0	56	---	42	494	
06/20/2014 *	---	0	---	---	0	0	0	31	613	156	752	
06/21/2014 *	---	0	---	---	0	0	0	13	---	72	587	
06/22/2014 *	---	---	---	---	0	0	0	13	204	115	325	
06/23/2014 *	---	0	---	---	0	36	0	16	---	42	523	
06/24/2014	---	0	---	---	0	0	0	11	0	39	577	
06/25/2014 *	---	---	---	---	0	29	0	24	---	191	291	
06/26/2014	---	---	---	---	0	0	0	28	0	0	374	
06/27/2014 *	---	---	---	---	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	7	0	0	508	
07/01/2014 *	---	---	---	---	0	0	0	9	---	0	0	
07/02/2014	---	---	---	---	0	0	0	0	0	0	0	
07/03/2014	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>65</b>	<b>7</b>	<b>246</b>	<b>1,633</b>	<b>1,051</b>	<b>4,961</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>14</b>	
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>1</b>	<b>18</b>	<b>233</b>	<b>75</b>	<b>354</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>66,385</b>	<b>147,455</b>	<b>225,116</b>	<b>776,174</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)	
06/19/2014 *	---	47	---	---	898	1,955	222	31	---	167	148	
06/20/2014 *	---	32	---	---	504	716	390	19	1,633	137	342	
06/21/2014 *	---	25	---	---	518	789	364	6	---	127	859	
06/22/2014 *	---	---	---	---	701	1,218	80	7	1,020	220	640	
06/23/2014 *	---	22	---	---	620	395	94	18	---	167	366	
06/24/2014	---	11	---	---	456	384	41	4	819	39	630	
06/25/2014 *	---	---	---	---	796	752	148	9	---	96	747	
06/26/2014	---	---	---	---	734	574	41	6	407	228	428	
06/27/2014 *	---	---	---	---	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	---	---	---	---	173	376	55	15	817	3	254	
07/01/2014 *	---	---	---	---	204	346	192	8	---	167	236	
07/02/2014	---	---	---	---	110	172	179	5	1,222	156	347	
07/03/2014	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>7,452</b>	<b>8,774</b>	<b>2,231</b>	<b>149</b>	<b>6,326</b>	<b>2,151</b>	<b>6,072</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>14</b>	
<b>Average:</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>532</b>	<b>627</b>	<b>159</b>	<b>11</b>	<b>904</b>	<b>154</b>	<b>434</b>	
<b>YTD</b>	<b>2,080</b>	<b>43,377</b>	<b>4,243</b>	<b>12,842</b>	<b>3,375,298</b>	<b>1,973,977</b>	<b>1,182,745</b>	<b>27,356</b>	<b>585,248</b>	<b>1,032,661</b>	<b>457,812</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)
06/19/2014 *	---	0	---	---	69	72	44	8	---	84	148
06/20/2014 *	---	0	---	---	72	215	49	4	408	98	239
06/21/2014 *	---	0	---	---	0	0	0	4	---	90	142
06/22/2014 *	---	---	---	---	35	107	13	2	408	154	234
06/23/2014 *	---	0	---	---	34	36	0	0	---	167	52
06/24/2014	---	0	---	---	35	36	14	4	0	78	105
06/25/2014 *	---	---	---	---	35	86	0	2	---	143	145
06/26/2014	---	---	---	---	105	0	41	4	0	304	107
06/27/2014 *	---	---	---	---	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	29	27	4	817	76	521
07/01/2014 *	---	---	---	---	68	57	41	0	---	84	0
07/02/2014	---	---	---	---	41	0	0	0	407	78	73
07/03/2014	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>575</b>	<b>696</b>	<b>298</b>	<b>34</b>	<b>2,448</b>	<b>1,356</b>	<b>2,998</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>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>50</b>	<b>21</b>	<b>2</b>	<b>350</b>	<b>97</b>	<b>214</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>181,645</b>	<b>88,053</b>	<b>69,591</b>	<b>37,839</b>	<b>1,494,126</b>	<b>576,744</b>	<b>588,200</b>

COMBINED LAMPREY JUVENILES											
	WTB	IMN	GRN	LEW	LGR <sup>†</sup>	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(Samp)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)
06/19/2014 *	---	0	---	---	1	4,650	0	2	---	675	80
06/20/2014 *	---	0	---	---	0	1,150	0	0	1,500	575	143
06/21/2014 *	---	0	---	---	0	250	0	1	---	463	180
06/22/2014 *	---	---	---	---	2	125	0	0	300	450	124
06/23/2014 *	---	0	---	---	1	0	10	1	---	325	60
06/24/2014	---	0	---	---	0	0	10	1	8,200	525	120
06/25/2014 *	---	---	---	---	0	25	0	0	---	200	68
06/26/2014	---	---	---	---	0	0	0	0	1,200	300	60
06/27/2014 *	---	---	---	---	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	20	0	0	1,800	802	5
07/01/2014 *	---	---	---	---	0	0	0	1	---	750	0
07/02/2014	---	---	---	---	5	50	0	0	1,400	650	10
07/03/2014	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>6,410</b>	<b>20</b>	<b>7</b>	<b>14,600</b>	<b>8,015</b>	<b>1,137</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>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>458</b>	<b>1</b>	<b>1</b>	<b>2,086</b>	<b>573</b>	<b>81</b>
<b>YTD</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>109</b>	<b>19,723</b>	<b>29,412</b>	<b>37</b>	<b>44,255</b>	<b>91,640</b>	<b>16,958</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 macropthalmia, 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 =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$

MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse Flow} / (\text{Powerhouse Flow} + \text{Spill}) \}$

BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts

Passage Index =  $\text{Collection Counts} / \{ \text{Powerhouse 2 Flow} / (\text{Powerhouse 1 \& 2 Flow} + \text{Spill}) \}$

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:

7/3/14 7:32 AM

**06/19/14 TO 07/03/14**

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	123,135	2,035	25	5,205	405	130,805
	Sum of NumberBarged	137,931	2,157	75	6,460	472	147,095
	Sum of NumberBypassed	39	0	0	0	0	39
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	54	4	0	1	1	60
	Sum of FacilityMorts	327	13	0	13	1	354
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	381	17	0	14	2	414
<b>LGS</b>	Sum of NumberCollected	135,096	1,940	45	6,091	485	143,657
	Sum of NumberBarged	161,992	2,240	95	7,456	582	172,365
	Sum of NumberBypassed	22	0	0	0	0	22
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	13	0	0	0	1	14
	Sum of FacilityMorts	194	0	0	15	0	209
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	207	0	0	15	1	223
<b>LMN</b>	Sum of NumberCollected	44,086	605	5	1,412	195	46,303
	Sum of NumberBarged	41,807	579	5	1,387	195	43,973
	Sum of NumberBypassed	121	0	0	17	0	138
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	4	0	0	1	0	5
	Sum of FacilityMorts	31	1	0	6	0	38
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	35	1	0	7	0	43
<b>Total Sum of NumberCollected</b>		<b>302,317</b>	<b>4,580</b>	<b>75</b>	<b>12,708</b>	<b>1,085</b>	<b>320,765</b>
<b>Total Sum of NumberBarged</b>		<b>341,730</b>	<b>4,976</b>	<b>175</b>	<b>15,303</b>	<b>1,249</b>	<b>363,433</b>
<b>Total Sum of NumberBypassed</b>		<b>182</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>199</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>71</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>79</b>
<b>Total Sum of FacilityMorts</b>		<b>552</b>	<b>14</b>	<b>0</b>	<b>34</b>	<b>1</b>	<b>601</b>
<b>Total Sum of ResearchMorts</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Sum of TotalProjectMorts</b>		<b>623</b>	<b>18</b>	<b>0</b>	<b>36</b>	<b>3</b>	<b>680</b>

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/3/14 7:32 AM

TO: 07/03/14

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
<b>LGR</b>	Sum of NumberCollected	559,985	3,442,072	52,722	130,730	2,403,664	6,589,173	
	Sum of NumberBarged	541,279	1,939,167	48,991	70,607	1,326,224	3,926,268	
	Sum of NumberBypassed	11,693	1,501,375	3,722	59,638	1,077,085	2,653,513	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	163	137	1	44	57	402	
	Sum of FacilityMorts	1,207	1,304	8	411	111	3,041	
	Sum of ResearchMorts	2	79	0	0	107	188	
	Sum of TotalProjectMorts	1,372	1,520	9	455	275	3,631	
<b>LGS</b>	Sum of NumberCollected	614,527	1,951,605	41,832	60,972	1,368,493	4,037,429	
	Sum of NumberBarged	608,935	1,768,263	40,932	54,626	1,148,221	3,620,977	
	Sum of NumberBypassed	306	182,657	890	6,109	220,102	410,064	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	36	34	1	14	16	101	
	Sum of FacilityMorts	846	651	9	223	164	1,893	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	882	685	10	237	180	1,994	
<b>LMN</b>	Sum of NumberCollected	218,366	1,325,963	19,905	48,238	791,836	2,404,308	
	Sum of NumberBarged	211,372	1,138,246	17,505	44,976	685,756	2,097,855	
	Sum of NumberBypassed	302	177,066	0	2,568	89,953	269,889	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	8	25	0	1	17	51	
	Sum of FacilityMorts	213	963	0	299	189	1,664	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	221	988	0	300	206	1,715	
Total Sum of NumberCollected		1,392,878	6,719,640	114,459	239,940	4,563,993	13,030,910	
Total Sum of NumberBarged		1,361,586	4,845,676	107,428	170,209	3,160,201	9,645,100	
Total Sum of NumberBypassed		12,301	1,861,098	4,612	68,315	1,387,140	3,333,466	
Total Sum of NumberTrucked		0	0	0	0	0	0	
Total Sum of SampleMorts		207	196	2	59	90	554	
Total Sum of FacilityMorts		2,266	2,918	17	933	464	6,598	
Total Sum of ResearchMorts		2	79	0	0	107	188	
Total Sum of TotalProjectMorts		2,475	3,193	19	992	661	7,340	

Cumulative Adult Passage at Mainstem Dams Through: 07/02

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	07/02	188083	26094	83345	33820	130283	22257	77474	15238	65483	19712	62393	13379	0	0	0	0	0	0
TDA	07/02	143142	21080	69202	32311	99813	18973	61318	10556	56929	14725	50412	9968	0	0	0	0	0	0
JDA	07/02	123224	19103	56991	28957	87036	17743	53859	9019	48096	13210	42984	9610	0	0	0	0	0	0
MCN	07/02	107147	16033	52176	22279	79413	14950	50435	8674	46180	9493	37044	6627	0	0	0	0	0	0
IHR	07/02	79298	12428	38017	18611	54814	9602	10862	3070	8098	4712	12941	3252	0	0	0	0	0	0
LMN	07/02	79942	14020	36470	19053	54458	8539	9641	4991	7132	5392	13517	3022	0	0	0	0	0	0
LGS	07/02	77966	13649	35072	19443	49920	9660	8249	3827	5092	4342	11736	3329	0	0	0	0	0	0
LGR	07/02	79167	13732	35031	19940	49728	11001	6963	2993	4436	3885	10046	3188	0	0	0	0	0	0
PRD	07/01	23742	2649	13725	1298	14700	1468	28081	898	27731	767	17111	577	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	07/01	23247	2934	13345	3100	13890	2468	21898	433	17006	629	10611	994	0	0	0	0	0	0
RRH	07/01	12376	2377	6841	2101	5576	1020	11494	165	8849	364	4952	317	0	0	0	0	0	0
WEL	06/30	15376	2544	7133	2980	4880	1164	1967	64	1661	158	680	37	0	0	0	0	0	0
WFA	06/26	25349	1067	25454	1356	36104	891	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	07/02	5	-2	0	0	0	0	363853	126900	153331	17923	8065	17853	6618	2433	5927	11903	8042	8716
TDA	07/02	0	0	0	0	0	0	299255	101226	118556	5969	2962	7657	2532	1034	2846	1498	1018	801
JDA	07/02	0	1	0	0	0	0	269343	94218	112709	6640	3104	9657	2641	1184	3138	808	696	441
MCN	07/02	0	0	1	0	1	0	221197	71240	83985	3700	2863	8107	1381	1002	2530	70	101	75
IHR	07/02	0	0	0	0	0	0	348	237	139	3351	4904	5772	1055	1675	1588	14	16	2
LMN	07/02	0	0	0	0	0	0	315	182	120	3052	3158	7758	1216	1484	3013	5	6	1
LGS	07/02	0	0	0	0	0	0	282	128	80	2181	2416	7178	1180	1222	2411	1	3	0
LGR	07/02	0	0	0	0	0	0	149	74	51	7871	7567	9121	3566	3262	3213	1	1	0
PRD	07/01	0	0	0	0	0	0	109602	42047	43526	308	209	254	0	0	0	69	83	61
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	07/01	0	0	0	0	0	0	45230	16633	16930	382	190	216	220	140	143	2	6	3
RRH	07/01	0	0	0	0	0	0	24596	9680	9255	290	193	444	173	162	322	0	0	0
WEL	06/30	0	0	0	0	0	0	10634	4738	2825	157	92	95	94	80	63	0	0	2
WFA	06/26	9	0	2	0	0	0	0	0	0	20552	15792	21312	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.