



# Fish Passage Center

## Weekly Report #15–13

June 12, 2015

### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 51% and 111% of average at individual sub-basins over early June. Precipitation above The Dalles has been 87% of average thus far over June. Over the 2015 water year, precipitation has ranged between 79% and 99% of average.

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

Location	Water Year 2015		Water Year 2015	
	June 1–11, 2015		October 1, 2014 to June 11, 2015	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	1.22	103	29.6	99
Sneke River above Ice Harbor	0.47	78	15.6	83
Columbia above The Dalles	0.67	87	20.0	88
Kootenai	1.47	111	30.5	101
Clark Fork	0.54	60	17.3	78
Flathead	1.14	99	26.6	92
Pend Oreille River Basin above Waneta Dam	0.86	84	22.9	92
Salmon River Basin	0.76	84	19.2	81
Upper Snake Tributaries	0.61	97	17.6	79
Clearwater	0.75	68	29.2	84
Willamette River above Portland	0.46	51	48.6	82

Table 2 displays the June 11<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The June 11<sup>th</sup> ESP forecast at The Dalles between April and August is 60,741 Kaf (69% of average).

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

Location	June 11, 2015 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	69	60,741
Grand Coulee (Apr–Aug)	76	43,366
Libby Res. Inflow, MT (Apr–Aug)	79 86*	4,633 5,090*
Hungry Horse Res. Inflow, MT (Apr–Aug)	68	1,309
Lower Granite Res. Inflow (Apr–July)	51	10,214
Brownlee Res. Inflow (Apr–July)	42	2,316
Dworshak Res. Inflow (Apr–July)	47 54**	1,146 1,325**

\* Denotes COE June Forecast

\*\* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,268.4 feet (6-11-15) and has refilled 8.4 feet over the last week. Outflows at Grand Coulee have ranged between 97.3 and 114.5 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,437.9 feet (6-11-15) and has refilled 6.5 feet over the previous week. Daily average outflows at Libby Dam have been 14.8 to 16.9 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,548.7 feet (6-11-15) and refilled 3.0 feet over the last week. Outflows at Hungry Horse have been 2.5 to 3.2 Kcfs over the last week.

Dworshak is currently at an elevation of 1,599.8 feet (6-11-15) and refilled 0.5 feet over the last week; Dworshak is full. Outflows have ranged from 2.2 to 4.5 Kcfs over the last week. Inflows to Dworshak have ranged between 2.9 and 4.7 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2,076.1 feet on June 11, 2015, and has refilled 0.9 feet over the last week. Hells Canyon outflows have ranged between 8.9 and 18.8 Kcfs over the last 4 days.

The Biological Opinion flow period began on April 3<sup>rd</sup> in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2015), the flow objective this spring will be 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 55.5 Kcfs over the spring season and 51.7 Kcfs last week.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives (which began April 10<sup>th</sup>) will be 220 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Over the spring season, flows at McNary Dam have averaged 180.3 Kcfs. Priest Rapids Dam flows have averaged 117.2 Kcfs. Over the last week, flows have averaged 183.7 Kcfs at McNary and 124.5 Kcfs at Priest Rapids.

### Spill

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

At the lower Snake River projects spill has been implemented according to the 2015 Fish Operations Plan (FOP) over the past week. Of note, however, the gas cap at Lower Monumental Dam has been reduced to nearly 19 Kcfs. This reduction in spill has resulted in a gas level of only 114.3% at the tailrace TDG monitor. Consequently, gas cap spill, which is supposed to be to a TDG level of 120% at the tailrace monitor, is much less than anticipated or planned for fish protection. This reduction by the COE over the past week is in response to the total dissolved gas (TDG) levels measured at the Ice Harbor forebay. Those reading are in excess of the upstream tailrace readings and it is unlikely that these occurrences are related to the spill levels at the upstream project. The forebay monitor reading at Ice Harbor is more likely a function of water temperature than the TDG level at the upstream project. On April 28<sup>th</sup> the “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, were initiated at Ice Harbor Dam. The

net effect of this operation is a decrease in spill levels during the “test-like” period.

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

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

Project	Spill Level Day/Night
McNary	40%/40%
John Day	<b>April 10-April 28:</b> 30%/30% <b>April 28-June 15:</b> 30%/30% and 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

Over the past week the TDG measurements exceeded the waiver limits (115%) at the Ice Harbor Dam forebay monitor. **Note:** The State of Oregon and the State of Washington use different methodologies to estimate the 12-hour average TDG. For Oregon, the 12-hour average is based on the 12 highest hourly TDG measurements in a single calendar day (not necessarily consecutive). For Washington, the 12-hour average is based on 12-hour rolling averages. The highest of the rolling averages is what is reported as the 12-hour average for a given day. The location of a TDG monitor will dictate which of these methodologies is used for compliance monitoring. The Washington methodology will apply to all the lower Snake River projects, as well as the middle Columbia River forebay monitors. On any given day the compliance of the tailrace monitors at the middle Columbia River projects will be determined using either the Washington or Oregon methodology, whichever is the most restrictive, and spill will be decreased if needed.

Monitoring for signs of gas bubble trauma (GBT) occurred at Little Goose, Lower Monumental, McNary, Bonneville and Rock Island dams over the past week. Monitoring at Lower Granite Dam ended for the season

due to low fish numbers. No fish were detected over the past week with signs of GBT.

### **Smolt Monitoring**

All Smolt Monitoring Program bypass facilities continued sampling this week. Sampling at the Snake River Trap at Lewiston and Salmon River Trap at Whitebird has been terminated for the season. Sampling at the Grande Ronde River Trap ended May 29. Sampling at the Imnaha River Trap will continue.

This week's samples at Bonneville Dam (BON) were predominated by subyearling Chinook even though subyearling Chinook passage indices decreased compared to last week. This week's daily average passage index was 4,400 compared to 5,300 per day last week. This week's average passage index for yearling Chinook juveniles was 1,400 compared to last week when the daily average passage index was about 4,500 per day. Steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage index for steelhead was about 1,900 per day whereas last week's was about 4,800. The daily average passage index for coho this week was about 2,000, which was lower than the 5,600 value for last week. Sockeye indices also decreased this week from an average index of about 1,600 last week to 500 this week. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples (June 10<sup>th</sup> and 11<sup>th</sup>), while macrophthalmia were encountered on six of seven sample days.

Subyearling Chinook dominated this week's salmonid collections at John Day Dam (JDA). This week's daily average passage index for subyearling Chinook was about 6,100 per day. Last week's passage index was about 4,100 per day. The daily average passage index for yearling Chinook this week was about 1,100 fish per day, which is a small decrease compared to last week's daily average passage index of about 1,500. Passage of steelhead and sockeye decreased this week also. This week's daily average passage indices were about 500 and 350, respectively. Last week's passage indices were 1,600 for steelhead and 675 for sockeye. Coho passage decreased this week, when compared to the previous week. This week's daily average passage index for coho was nearly 550, whereas that for last week was about 700. Finally,

Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of about 280 per day. This is a decrease compared to last week's daily average collection of about 490 macrophthalmia per day.

Since McNary Dam (MCN) is no longer a transportation site, sampling takes place every other day for the entire SMP season. This week's samples at MCN were dominated by Subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 17,000. This daily average passage index is an increase from the previous week. Last week's daily average passage index was about 3,400 for subyearling Chinook. Yearling Chinook average daily index decreased this week compared to last week. This week's daily average passage index for yearling Chinook was about 3,400 compared to 6,000 last week. Steelhead indices were also down, with the average index this week at 2,800 compared to 3,100 last week. Passage of coho, and sockeye also decreased this week. This week's daily average passage indices were about 1,500, and nearly 600 per day, respectively. Last week's daily average passage indices were about 2,600 for coho and 1,300 for sockeye. Finally, Pacific lamprey macrophthalmia were encountered in all three of this week's samples. The daily average collection for lamprey macrophthalmia this week was 650.

This week's samples at Lower Granite Dam (LGR) were again dominated by subyearling Chinook juveniles. This week's daily average passage index for subyearling Chinook at LGR was about 32,000 per day compared to 38,700 average index for last week. The subyearling Chinook passage index peaked at 100,000 on June 5 largely due to hatchery releases above LGR in recent weeks. In addition, flows hit a peak of 65 Kcfs on June 4 and indices for subyearling Chinook peaked at all three Snake River collector dams (LGR, LGS, and LMN) on the following sample date. Passage of yearling Chinook continued to decrease this week. This week's daily average passage indices were about 80 compared to 170 per day last week. This week's daily average passage index was 2,900 for steelhead compared to 2,800 from the previous week. The passage index was very low for sockeye and coho this week, similar to last week. This week there were sockeye and coho on one sample date (June 9<sup>th</sup>). Last week's daily average passage indices for these two

species were 0 and 70, respectively. Finally, Pacific lamprey ammocoetes were encountered in two of this week's samples. The samples on June 5<sup>th</sup> and June 8<sup>th</sup> included Pacific lamprey ammocoetes.

Sampling at Little Goose Dam (LGS) was limited to a 24-hour sample every other day from April 2<sup>nd</sup> to April 30<sup>th</sup>. Little Goose Dam began collecting fish for transportation on May 1<sup>st</sup> and, therefore, collections at LGS are every day for the rest of the season. Subyearling Chinook dominated this week's samples at LGS. This week's daily average passage index for subyearling Chinook at LGS was about 21,000 fish per day, which is a decrease compared to last week's daily average passage index of about 24,000 per day. As mentioned previously, passage indices for subyearling Chinook peaked on June 5<sup>th</sup> at nearly 42,000, coinciding with a peak in discharge of 65 Kcfs. Yearling Chinook passage continued to decrease this week. This week's daily average passage index for yearling Chinook at LGS was about 140, whereas that for last week was just over 400 per day. Coho and sockeye passage also decreased this week. This week's daily average passage indices for these two species were 100 and 0, respectively. Last week's daily average passage indices were about 300 for coho and 20 for sockeye. Steelhead passage indices decreased as well this week. This week's daily average passage index for steelhead was about 1,300, whereas that for last week was about 3,800. Finally, Pacific lamprey macrophthalmia were encountered in all of this week's samples, with an estimated collection that averaged 200 per day.

Sampling at Lower Monumental Dam (LMN) was limited to a 24-hour sample every third day from April 4<sup>th</sup> to April 13<sup>th</sup> and every other day from April 15<sup>th</sup> to May 1<sup>st</sup>. At 1500 on May 1<sup>st</sup>, LMN began collecting fish for transportation and, therefore, collections at LMN are every day for the rest of the season. This week's samples at LMN were dominated by subyearling Chinook, with a daily average passage index of about 14,000 per day. This week's daily average passage index for subyearling Chinook is an increase over last week's daily average passage index of about 8,600. Passage of yearling Chinook, coho, steelhead and sockeye all decreased this week, when compared to last week. This week's daily average passage indices for these four species were about 65, 80, 400 and 0, respectively. Last week's daily average passage indices

were 340 for yearling Chinook, 570 for coho, 1,300 for steelhead and 5 for sockeye. Finally, Pacific lamprey macrophthalmia were encountered in four of seven of this week's samples. The average estimated daily collection was 50 fish.

This week's samples at Rock Island Dam (RIS) were dominated by subyearling Chinook juveniles, with a daily average passage index of just under 300 fish per day. This was an increase compared to last week's daily average passage index of about 200 per day. Yearling Chinook passage decreased this week, when compared to last week. This week's passage index for yearling Chinook was 6 per day, whereas that for last week was about 133 per day. This week's daily average passage index for steelhead was about 36 per day, which is much lower than last week's average of 200 per day. Sockeye passage this week was relatively low, with daily average passage index of 1 fish. Coho indices decreased this past week. The average daily index for coho this week was nearly 100 compared to last week's average index which was nearly 500. Finally, Pacific lamprey macrophthalmia were encountered on two sample dates this past week (June 6<sup>th</sup> and June 9<sup>th</sup>).

The Grande Ronde Trap (GRN) is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer 2 in the Grande Ronde River. Sampling at GRN was terminated for the season on May 29. Sampling at the Salmon River Trap at Whitebird (WTB) was terminated for the season after the May 22<sup>nd</sup> sample. Sampling at the Snake River Trap at Lewiston (LEW) was terminated after the May 19<sup>th</sup> sample. However, since sampling was terminated on May 19<sup>th</sup>, LEW has been allowing fish to pass through, in an effort to collect PIT-tag interrogation data. This PIT-tag interrogation effort ended 2 weeks ago.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at IMN is year-round however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through June 4. Over the last week of available data (May 29–June 4), collections at IMN were dominated by steelhead, with a daily average collection of about

120 fish per day. This is a decrease compared to the daily average collection from the previous week of data (May 21–May 28), which was about 470 per day. Over the May 29–June 4 period, approximately 68% of the steelhead collected at IMN were of known hatchery origin. Yearling Chinook passage increased over the May 29–June 4 period, when compared to the previous 7-day period. Over the May 29–June 4 period, the daily average collection for yearling Chinook was about 48, whereas that for the May 21–May 28 period was about 10 per day. Finally, subyearling Chinook juveniles were encountered four of the seven days sampled in the May 29–June 4 period, although sample counts average only 2 fish per day during that time period.

### 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. No new releases were scheduled for this zone this week. However, several releases of subyearling fall Chinook that were originally planned for early and mid-June were released early in response to low flow conditions. Over the period of May 28<sup>th</sup> to June 5<sup>th</sup>, nearly 1.8 million subyearling fall Chinook juveniles were released above Lower Granite Dam. Of these, about 88% were released into the Clearwater River and its tributaries while the remaining 12% were released near Captain John Landing Acclimation Facility on the Snake River. A large proportion (32%) of these subyearling fall Chinook were expected to be unmarked. In addition, about 49,000 spring Chinook parr were released last week into Big Sheep Creek, a tributary of the Imnaha River. These spring Chinook juveniles are 100% unmarked and are not expected to out-migrate until spring of 2016. There are no new releases scheduled for this zone over the next 2 weeks.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Approximately 10.8 million subyearling fall Chinook juveniles were scheduled to be released into this zone this week. Of these, about 68% were scheduled to be released from Priest Rapids Hatchery while the remaining 32% were scheduled to be released from Ringold Springs Hatchery. Both of these releases are

volitional and were expected to begin on or around June 10<sup>th</sup>. A large portion (31%) of these subyearlings will be marked with otolith marks, which means that they will not be distinguishable from wild fish.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. No new releases were scheduled for this zone this week. There are no new releases for this zone over the next 2 weeks.

### Adult Passage

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 1,864 and 4,121 adult summer Chinook in the last week. The 2015 summer Chinook count of 32,763 is about 1.2 times greater than the 2014 count and 1.6 times greater than the 10-year average. The 2015 summer Chinook jack count of 3,235 is about 75% of the 2014 and the 10-year average count. At Willamette Falls, 46,199 adult spring Chinook have been counted so far this year. In 2014, 21,696 adult spring Chinook were counted at Willamette Falls. This year's count is about 2.1 times greater than the 2014 count and 2 times greater than the 10-year average count of 23,422. As of June 10<sup>th</sup>, a total of 156,151 adult spring Chinook have been counted at have been counted at McNary Dam and 102,031 have been counted at Lower Granite Dam. The 2015 McNary Dam adult spring Chinook count is about 1.5 times greater than the 2014 count and 2 times greater than the 10-year average count. The 2015 Lower Granite Dam adult spring Chinook count is about 1.4 times greater than the 2014 count and 2.2 times greater than the 10-year average count.

The 2015 Bonneville Dam adult steelhead count of 6,106 has 1,420 fewer fish than the 2014 count of 7,526 and 724 fewer fish than the 10-year average count of 6,830. The 2015 Bonneville Dam adult wild steelhead count of 2,878 is about 1.5 times greater than the 2014 count of 1,933 and 1.7 times greater than the 10-year average count of 1,739. Daily adult steelhead counts at Lower Granite Dam ranged from 1 to 3 adults per day last week. This year's Lower Granite steelhead count of 9,197 is about 1.2 times greater than the 2014 count of 7,547 and has 377

more fish than the 10-year average count of 8,820. The 2015 Lower Granite Dam adult wild steelhead count of 4,350 is 1.3 times greater than the 2014 count of 3,469 and is about 1.3 times greater than the 10-year average count of 3,241. At Willamette Falls, the 2015 count for steelhead was 6,290 as of May 29th. This year's steelhead count is about 43.8% of the 2014 count of 14,345 and about 41.6% of the 10-year average count of 15,105.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 686 and 4,792 last week. The 2015 adult sockeye count at Bonneville Dam of 14,481 is 1.9 times greater than the 2014 count and 3.2 times greater than the 10-year average count.

## Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/30/2015		to		06/12/15				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Lookingglass Hatchery	CH0	SP	2016	48,956	06-03-15	06-03-15	Big Sheep Creek	Imnaha River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	322,515	06-02-15	06-02-15	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	537,331	06-03-15	06-04-15	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>908,802</b>				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2015	252,989	04-06-15	05-31-15	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>252,989</b>				
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	175	05-15-15	05-31-15	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	225	06-01-15	06-01-15	Crab Creek	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	2,575	05-15-15	05-31-15	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	17,000	05-15-15	05-31-15	Yakama River	Yakima River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2015	220,000	06-05-15	06-05-15	Cpt John Acclim Pond	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2015	85,000	04-20-15	05-31-15	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2015	7,300,000	06-10-15	06-30-15	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2015	3,500,000	06-10-15	06-20-15	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2015	484,000	05-25-15	05-31-15	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2015	160,000	05-01-15	05-31-15	Wells Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>11,768,975</b>				
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	98,105	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	143,770	04-15-15	06-01-15	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	236,749	04-15-15	06-01-15	Easton Pond	Yakima River
Yakama Tribe	Klickitat Hatchery	CH0	FA	2015	4,000,000	06-01-15	06-01-15	Klickitat River	Klickitat River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2015	111,000	06-01-15	06-01-15	Nelson Springs	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	71,382	04-15-15	06-01-15	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	90,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	100,210	04-15-15	06-01-15	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	103,375	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	250,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
<b>Yakama Tribe Total</b>					<b>5,204,591</b>				
<b>Grand Total</b>					<b>18,135,357</b>				

## Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	6/13/2015		to		6/25/2015				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2015	3,500,000	06-10-15	06-20-15	Ringold Springs Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>3,500,000</b>				
<b>Grand Total</b>					<b>3,500,000</b>				

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/29/2015	109.7	0.0	109.8	0.0	125.2	10.0	121.3	0.0	132.6	13.4	135.9	14.7	133.6	28.0
05/30/2015	97.5	0.0	105.2	0.0	119.7	10.3	113.7	0.5	123.5	11.3	123.0	17.9	122.4	28.3
05/31/2015	105.0	0.0	103.7	0.0	119.6	10.7	115.3	1.3	125.2	11.3	128.8	21.8	125.2	28.9
06/01/2015	95.2	0.0	90.1	0.0	113.3	11.1	112.1	13.1	120.4	23.8	142.2	23.2	143.1	30.7
06/02/2015	80.0	0.0	84.4	0.0	100.2	8.2	97.1	11.4	101.9	25.0	111.8	17.9	124.3	25.8
06/03/2015	81.2	0.0	81.8	0.0	96.6	6.8	95.6	9.0	99.5	20.4	110.2	18.1	102.3	22.9
06/04/2015	98.1	0.0	98.8	0.0	113.8	7.8	110.2	8.9	115.5	21.2	120.9	18.1	115.9	25.8
06/05/2015	114.5	0.0	110.9	0.0	118.8	7.9	113.5	8.9	119.5	22.6	112.1	19.2	108.1	27.8
06/06/2015	100.4	0.0	103.4	0.0	119.7	7.9	117.4	10.0	122.7	20.8	127.7	19.9	125.2	29.2
06/07/2015	110.0	0.0	109.7	0.0	121.1	8.6	113.9	8.6	122.9	19.8	134.4	20.1	133.5	29.1
06/08/2015	119.4	0.0	117.8	0.0	126.7	8.5	121.3	10.2	127.0	22.3	128.5	19.6	126.8	29.0
06/09/2015	97.3	0.0	102.9	0.0	123.1	9.7	123.5	9.7	132.9	22.5	146.4	19.8	145.3	28.5
06/10/2015	98.3	0.0	99.3	0.0	110.8	8.3	105.7	10.7	108.9	24.4	117.1	18.8	118.3	27.1
06/11/2015	102.4	0.0	98.7	0.0	108.9	9.0	106.2	9.6	111.7	22.8	117.4	19.1	114.6	27.4

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/29/2015	1.5	0.0	---	14.2	63.6	20.4	62.3	18.6	64.3	24.0	65.8	49.6	
05/30/2015	1.5	0.0	---	12.7	60.3	20.5	58.0	17.5	58.8	23.3	59.7	47.9	
05/31/2015	1.5	0.0	---	15.0	61.0	20.3	58.6	17.5	59.6	23.4	60.6	47.3	
06/01/2015	1.5	0.0	---	15.6	63.1	20.2	62.6	18.7	61.7	22.4	62.0	24.1	
06/02/2015	1.5	0.0	---	14.2	63.4	20.4	61.7	18.3	61.4	23.2	62.7	18.9	
06/03/2015	2.2	0.0	---	13.6	65.8	20.4	61.6	18.4	61.9	22.5	63.3	43.7	
06/04/2015	3.8	0.0	---	11.6	65.9	20.2	64.7	19.4	66.1	23.4	66.7	50.2	
06/05/2015	2.2	0.0	---	9.3	55.7	20.1	54.1	16.2	54.1	23.4	54.7	23.2	
06/06/2015	2.2	0.0	---	11.0	50.8	20.3	47.9	14.4	48.6	23.8	49.4	14.9	
06/07/2015	2.7	0.0	---	12.1	52.1	20.2	50.4	15.0	51.3	23.4	52.5	37.5	
06/08/2015	4.5	0.0	---	14.0	53.5	20.2	50.9	15.2	51.7	22.9	51.8	41.8	
06/09/2015	4.4	0.0	---	11.7	54.2	20.2	52.1	15.5	49.4	21.7	52.3	21.4	
06/10/2015	3.1	0.0	---	10.9	49.0	20.1	46.6	14.0	46.3	20.0	49.0	14.7	
06/11/2015	3.1	0.0	---	11.9	46.7	20.3	44.8	13.4	44.7	19.3	43.8	29.6	

**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		
05/29/2015	205.7	82.8	205.1	78.3	186.8	74.8	204.9	99.2	1.0	92.3
05/30/2015	197.6	79.4	181.4	54.5	166.2	66.8	173.4	99.9	1.0	60.2
05/31/2015	200.6	80.7	195.6	61.8	179.0	71.7	176.0	100.4	1.0	62.2
06/01/2015	202.6	81.2	196.0	78.5	182.3	72.7	201.2	100.0	5.5	83.3
06/02/2015	191.1	76.9	195.2	74.9	181.4	72.6	217.4	99.1	5.7	100.2
06/03/2015	180.3	72.7	176.3	53.1	161.8	64.7	178.7	99.6	1.0	65.7
06/04/2015	184.6	74.2	187.0	59.4	170.2	67.9	183.8	100.0	1.0	70.5
06/05/2015	184.7	74.4	185.1	74.1	169.8	68.0	185.6	99.6	0.9	72.6
06/06/2015	179.2	72.1	175.1	67.1	159.9	64.1	185.9	99.4	1.0	73.1
06/07/2015	179.5	72.2	177.5	53.2	162.4	65.2	177.8	99.6	1.0	64.8
06/08/2015	192.0	77.2	182.3	57.8	166.7	67.0	187.0	99.0	1.0	74.7
06/09/2015	206.4	82.8	201.1	80.4	187.3	74.9	197.0	99.6	3.3	81.7
06/10/2015	177.6	71.3	169.2	65.2	152.7	61.2	173.5	99.7	0.9	60.5
06/11/2015	166.7	67.0	170.5	51.1	154.5	61.8	167.6	99.8	0.9	54.4



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

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
<b>Little Goose Dam</b>											
	06/01/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/08/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	06/03/15	Chinook + Steelhead	99*	0	0			0	0	0	0
	06/10/15	Chinook + Steelhead	75*	0	0			0	0	0	0
<b>McNary Dam</b>											
	06/01/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/03/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/09/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/11/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	05/30/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/02/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/10/15	Chinook + Steelhead	93*	0	0			0	0	0	0
<b>Rock Island Dam</b>											
	06/02/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/04/15	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	06/09/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/11/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

\* Due to low fish numbers, sample size criteria were not met. Therefore, % fish with GBT not estimated for this sample day.

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

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

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>			<u>hr</u>	<u>Avg</u>	<u>Avg</u>	
5/29	105.8	106.3	106.5	24	---	---	---	0	106.4	106.7	107.0	24	105.9	106.7	107.4	24	106.7	107.1	107.5	24
5/30	105.6	105.9	106.0	24	---	---	---	0	107.1	107.2	107.7	24	106.0	106.9	107.7	24	107.2	107.8	108.3	24
5/31	106.1	106.7	107.1	24	---	---	---	0	107.1	107.4	107.8	24	106.0	106.6	106.9	24	107.5	107.8	108.4	24
6/1	106.4	106.5	107.1	13	---	---	---	0	108.0	108.2	108.5	24	106.6	107.1	107.7	24	107.4	107.6	107.9	24
6/2	106.3	106.5	106.9	24	---	---	---	0	108.2	108.6	109.1	24	106.2	106.9	107.2	24	106.9	107.0	107.4	24
6/3	105.8	106.0	106.2	24	---	---	---	0	107.6	107.8	108.1	24	105.7	106.2	106.7	24	106.4	106.6	106.7	24
6/4	104.8	105.0	105.3	24	---	---	---	0	107.4	107.7	107.9	24	105.9	106.6	106.9	24	106.0	106.4	106.6	24
6/5	105.1	105.5	105.7	24	---	---	---	0	107.8	108.3	108.7	24	105.5	106.1	106.5	24	106.1	106.9	107.3	24
6/6	105.6	105.9	106.2	24	---	---	---	0	108.1	108.3	108.6	24	105.7	106.4	106.7	24	107.2	107.7	108.1	24
6/7	105.7	105.9	106.2	24	---	---	---	0	107.9	108.2	108.4	24	106.0	106.8	107.4	24	107.4	107.9	108.3	24
6/8	106.1	106.5	106.8	24	---	---	---	0	108.0	108.3	108.6	24	106.5	107.4	108.0	24	107.6	108.2	108.6	24
6/9	106.7	107.0	107.4	24	---	---	---	0	108.3	108.7	109.0	24	106.3	107.1	107.4	24	107.9	108.4	108.7	24
6/10	106.9	107.2	107.7	24	---	---	---	0	108.3	108.5	108.6	24	106.6	107.5	108.0	24	108.0	108.4	108.7	24
6/11	107.1	107.4	108.0	23	---	---	---	0	107.6	107.9	108.2	23	106.1	106.7	107.1	23	107.6	107.8	107.9	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</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>			<u>hr</u>	<u>Avg</u>	<u>Avg</u>	
5/29	106.2	106.4	106.8	24	107.0	107.3	107.9	24	108.7	109.0	109.7	24	108.6	109.0	109.2	24	108.0	108.3	108.5	24
5/30	106.7	107.0	107.4	24	107.6	108.2	108.5	24	109.2	109.8	110.3	24	109.4	109.7	110.1	24	108.5	108.7	109.0	24
5/31	107.1	107.3	107.9	24	107.6	108.2	108.6	24	109.5	110.0	110.2	24	109.3	109.5	109.7	24	108.7	109.1	110.2	24
6/1	107.4	107.7	108.2	24	107.6	108.0	108.5	24	109.4	110.0	111.3	24	109.5	109.7	109.8	24	112.7	113.1	113.4	24
6/2	107.0	107.5	107.8	24	106.7	106.9	107.1	24	107.8	108.1	108.4	24	109.0	109.2	109.5	24	112.2	112.5	113.0	24
6/3	106.3	106.8	107.7	24	106.1	106.6	107.1	24	107.1	107.6	107.9	24	108.1	108.3	108.6	24	111.3	112.0	112.7	24
6/4	105.8	106.0	106.4	24	106.3	106.9	107.5	24	107.3	108.1	108.7	24	107.3	107.6	108.0	24	111.2	112.2	112.7	24
6/5	105.8	106.2	107.2	24	106.6	107.4	108.0	24	107.8	108.8	109.4	24	107.5	107.9	108.3	24	111.3	112.3	112.6	24
6/6	106.7	106.9	107.1	24	107.3	108.0	108.5	24	108.4	109.4	109.8	24	108.5	109.0	109.2	24	112.1	113.3	113.6	24
6/7	106.9	107.2	107.7	24	108.0	108.6	109.0	23	109.1	110.0	110.5	23	109.0	109.2	109.4	24	112.2	113.1	113.6	24
6/8	107.0	107.3	107.7	24	108.1	108.7	109.0	24	109.3	110.3	110.7	24	109.4	109.7	109.9	24	112.8	113.6	114.0	24
6/9	107.6	108.0	108.4	24	108.2	108.7	108.9	24	109.3	110.1	110.5	24	110.0	110.3	110.4	24	113.3	114.0	114.4	24
6/10	108.1	108.6	109.5	24	108.3	109.0	109.5	24	109.0	110.0	110.7	24	109.9	110.1	110.6	24	112.6	113.4	113.8	24
6/11	107.3	107.6	107.9	23	107.7	108.1	108.6	20	108.5	109.2	109.8	20	109.0	109.2	109.5	23	112.2	112.8	113.3	23

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

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>					
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>			<u>hr</u>	<u>Avg</u>	<u>Avg</u>	
5/29	107.9	108.2	108.5	24	111.3	112.1	113.3	23	111.4	112.3	112.8	24	110.9	111.2	111.5	24	110.5	110.8	111.2	24
5/30	108.3	108.9	109.5	24	111.4	112.3	112.5	24	111.7	112.1	112.7	24	112.3	113.2	113.5	24	111.0	111.3	111.8	24
5/31	108.4	108.7	108.9	24	111.6	112.4	113.2	24	111.1	112.1	112.8	24	112.9	113.1	113.7	24	111.5	112.2	112.6	24
6/1	109.1	110.1	110.4	24	115.1	116.4	116.7	24	110.2	110.9	111.6	24	112.6	112.9	113.5	24	112.2	112.6	112.9	24
6/2	108.7	109.0	109.2	24	114.9	115.5	116.7	24	106.7	107.4	109.0	24	110.6	111.4	112.8	24	109.8	110.4	110.7	24
6/3	108.4	108.7	108.9	24	113.7	114.4	116.4	24	106.1	107.0	107.8	24	110.2	111.0	111.8	24	108.2	108.5	108.8	24
6/4	107.6	108.3	108.8	24	112.7	113.3	114.5	24	108.3	110.2	111.8	24	110.9	111.9	112.3	24	108.4	109.5	111.0	24
6/5	107.9	108.8	109.4	24	113.7	114.5	116.7	24	111.5	112.8	113.9	24	112.9	113.4	113.7	24	110.4	111.5	112.1	24
6/6	108.9	109.6	110.2	24	113.9	114.4	115.3	24	111.9	112.6	113.7	24	113.1	113.4	113.9	24	112.1	112.6	113.4	24
6/7	109.3	109.9	110.4	24	114.0	114.5	115.1	24	111.2	112.2	113.0	24	113.0	113.3	114.6	24	112.2	112.6	113.3	24
6/8	109.7	110.4	111.1	24	114.9	115.7	117.7	24	111.6	112.6	114.4	24	113.3	113.5	114.1	24	112.3	112.8	113.8	24
6/9	110.0	110.8	111.2	24	115.1	115.5	115.7	24	---	---	---	0	---	---	---	0	---	---	---	0
6/10	109.2	110.1	110.6	24	115.1	115.9	117.1	24	---	---	---	0	---	---	---	0	---	---	---	0
6/11	108.9	109.4	110.0	23	114.3	115.1	118.0	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	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clrwtr-Peck</u>			<u>Anatone</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
5/29	112.5	112.8	113.0	24	---	---	---	0	103.7	105.2	106.7	24	---	---	---	0	104.1	105.0	105.8	24
5/30	112.9	113.2	113.4	24	---	---	---	0	103.8	105.2	106.3	24	---	---	---	0	104.0	104.8	105.4	24
5/31	113.0	113.3	113.5	24	---	---	---	0	103.8	104.4	106.2	17	---	---	---	0	103.7	104.5	105.3	24
6/1	113.6	113.8	114.0	24	---	---	---	0	102.4	102.4	103.1	8	---	---	---	0	102.6	102.6	102.9	11
6/2	111.8	112.2	112.5	24	---	---	---	0	103.0	104.1	105.7	24	---	---	---	0	102.8	103.4	103.9	24
6/3	110.5	111.3	111.5	24	---	---	---	0	102.0	104.2	106.3	24	---	---	---	0	103.2	104.1	104.7	24
6/4	111.4	112.4	115.1	24	---	---	---	0	97.7	98.4	99.0	24	---	---	---	0	103.5	104.4	105.4	24
6/5	112.9	113.8	115.9	24	---	---	---	0	98.5	99.9	101.1	24	---	---	---	0	103.6	104.8	105.7	24
6/6	113.5	113.7	114.0	24	---	---	---	0	98.6	99.9	101.2	24	---	---	---	0	103.5	104.8	105.8	24
6/7	113.7	114.1	115.8	24	---	---	---	0	99.4	101.1	102.7	24	---	---	---	0	103.6	105.0	106.3	24
6/8	113.9	114.2	115.9	24	---	---	---	0	103.4	104.1	104.9	24	---	---	---	0	104.0	105.5	106.9	24
6/9	---	---	---	0	---	---	---	0	103.8	104.6	105.1	24	---	---	---	0	103.9	105.4	106.9	24
6/10	---	---	---	0	---	---	---	0	103.2	104.0	104.8	24	102.9	102.9	104.0	5	102.9	104.0	105.2	23
6/11	---	---	---	0	---	---	---	0	102.9	103.8	104.5	23	102.0	103.1	104.4	23	102.9	104.0	105.0	21

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

Date	<u>Clrwtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
5/29	102.9	104.6	105.8	24	102.7	103.0	103.2	24	110.1	110.3	111.7	24	111.1	111.3	111.9	16	111.5	111.5	111.8	16
5/30	102.9	104.5	105.6	24	103.3	103.5	103.7	24	110.5	110.8	112.1	24	111.4	111.8	112.3	24	111.8	112.2	112.6	24
5/31	102.5	103.3	105.4	17	103.8	104.0	104.3	24	110.4	110.5	110.8	24	111.7	112.3	112.7	24	111.9	112.3	112.7	24
6/1	100.6	100.6	101.4	7	104.2	104.3	104.6	13	110.4	110.4	110.8	13	111.4	111.4	112.1	12	111.9	111.9	112.3	12
6/2	100.9	101.8	102.5	24	102.9	103.2	103.7	24	110.2	110.3	110.5	24	110.8	110.9	111.2	24	111.4	111.6	111.9	24
6/3	101.4	102.5	103.4	24	101.8	102.0	102.2	24	109.9	110.1	110.7	24	109.9	110.3	110.8	24	111.1	111.4	111.7	24
6/4	102.3	103.8	105.0	24	101.0	101.2	101.5	24	109.5	109.7	110.0	24	109.2	109.4	109.8	24	110.5	110.8	111.1	24
6/5	102.6	104.4	105.8	24	100.5	100.6	100.7	24	109.8	110.2	110.7	24	109.5	109.8	110.7	24	111.2	111.7	112.0	24
6/6	102.7	104.5	105.8	24	101.0	101.3	101.4	24	110.5	110.9	111.4	24	111.6	112.2	112.9	24	111.9	112.5	113.0	24
6/7	102.6	104.4	105.7	24	101.8	102.3	102.5	24	110.3	110.6	110.8	24	111.9	112.5	113.7	24	111.7	112.0	112.4	24
6/8	103.3	105.4	106.8	24	103.7	103.9	104.0	24	110.6	110.9	112.6	24	110.9	111.1	111.6	24	111.8	112.1	112.5	24
6/9	103.4	105.0	106.5	24	103.8	103.8	104.0	10	110.8	111.1	112.5	24	110.4	110.6	110.8	24	111.7	112.2	112.7	24
6/10	103.0	104.8	106.1	24	103.9	103.9	104.1	9	111.4	111.6	111.8	24	110.6	110.7	111.0	24	111.7	112.0	112.2	24
6/11	102.6	104.6	106.0	23	103.5	103.6	103.9	23	111.7	111.8	112.0	23	110.8	111.0	111.3	23	111.8	112.1	112.6	23

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
5/29	112.1	112.3	112.5	24	117.5	117.9	118.3	24	115.9	116.4	116.7	24	115.7	115.9	116.2	24	---	---	---	0
5/30	112.7	113.0	113.1	24	116.6	117.3	117.9	24	116.7	117.1	117.5	24	115.5	115.9	116.5	24	---	---	---	0
5/31	113.2	113.6	114.1	24	116.9	117.5	118.0	24	117.2	117.7	118.3	24	115.6	116.0	116.4	24	---	---	---	0
6/1	113.1	113.5	113.7	24	115.4	116.6	118.2	24	116.8	117.1	117.5	24	115.1	116.2	116.7	24	---	---	---	0
6/2	111.8	112.1	112.6	24	113.6	113.7	113.9	24	114.9	115.4	116.0	24	114.9	115.1	115.3	24	---	---	---	0
6/3	110.6	110.9	111.0	24	113.5	114.0	115.0	24	113.0	113.4	113.9	24	114.8	115.6	115.9	24	---	---	---	0
6/4	110.5	110.7	111.1	24	113.3	113.7	116.2	24	111.9	112.0	112.2	24	115.5	115.6	115.9	24	---	---	---	0
6/5	111.6	112.3	112.7	24	113.1	113.3	113.5	21	113.5	114.0	114.4	24	113.9	115.2	115.9	24	---	---	---	0
6/6	112.2	112.8	113.5	24	113.6	114.0	114.8	24	115.0	115.6	115.8	24	112.6	113.3	114.9	24	---	---	---	0
6/7	112.2	112.6	113.0	24	113.7	114.1	114.8	24	116.6	117.4	117.8	24	113.5	114.7	115.1	24	---	---	---	0
6/8	113.1	113.7	114.1	24	114.7	115.8	116.7	24	118.5	118.7	119.0	24	113.5	114.2	115.3	24	---	---	---	0
6/9	113.4	113.5	114.2	15	115.9	116.0	116.8	15	118.6	118.8	119.0	24	113.7	114.8	116.7	24	---	---	---	0
6/10	113.3	113.5	113.7	23	114.4	114.6	115.4	23	118.0	118.2	118.4	24	112.4	112.8	113.2	24	---	---	---	0
6/11	112.3	112.5	113.1	21	113.4	114.3	115.1	21	117.0	117.1	117.4	23	112.7	113.5	114.0	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
5/29	112.7	113.3	113.9	24	115.2	115.6	116.0	24	111.3	111.9	112.4	24	114.2	115.5	115.8	24	113.3	113.6	113.8	24
5/30	112.5	112.8	113.2	24	114.7	114.9	115.0	24	111.7	112.1	112.7	24	114.9	115.2	115.5	24	112.0	112.4	112.7	24
5/31	113.0	113.2	114.5	24	114.7	115.0	115.3	24	112.1	112.9	113.4	24	115.4	116.0	116.4	24	111.6	112.3	112.7	24
6/1	111.7	112.2	112.7	24	114.5	114.8	114.9	24	112.5	113.0	113.6	24	113.7	114.4	114.5	24	111.0	112.0	112.9	24
6/2	109.0	109.5	110.4	24	114.3	114.7	115.4	24	110.2	110.5	111.2	24	113.7	114.3	114.7	24	109.3	109.6	109.8	24
6/3	106.7	107.1	107.8	24	115.6	116.5	117.4	24	108.4	108.7	109.1	24	114.5	114.8	115.1	24	109.2	109.5	109.5	24
6/4	106.9	107.5	108.0	24	115.1	116.0	116.2	24	107.2	107.4	107.8	24	114.0	114.3	114.7	24	108.4	108.9	109.6	24
6/5	109.5	110.3	111.1	24	115.0	115.9	116.6	24	107.9	108.5	109.6	24	112.6	113.7	115.2	24	110.7	111.3	111.8	24
6/6	112.3	112.8	113.4	24	115.3	115.9	116.2	24	108.8	109.2	109.6	24	113.0	113.4	114.1	24	112.2	112.6	112.9	24
6/7	112.9	113.6	114.0	24	115.4	116.3	117.2	24	107.9	108.4	109.1	24	113.6	114.0	114.3	24	111.3	111.6	112.0	24
6/8	113.3	113.7	114.3	24	115.3	115.6	116.1	24	109.4	110.4	111.5	24	113.6	114.2	115.1	24	110.1	110.4	110.7	24
6/9	114.0	114.4	115.0	24	115.6	116.4	117.0	24	111.6	112.5	113.1	24	114.0	115.2	116.5	24	110.1	110.6	111.2	24
6/10	113.5	113.7	114.2	24	114.2	114.7	115.7	24	110.8	111.3	111.7	24	113.1	114.0	114.5	24	109.6	110.5	111.2	24
6/11	111.8	112.0	112.3	23	114.1	115.2	116.2	23	109.2	109.8	110.3	23	114.2	114.5	115.0	23	107.3	107.5	108.0	23

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

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>Camas\Washougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>				
5/29	117.8	118.5	118.7	24	115.1	115.5	115.7	24	116.8	117.1	117.4	24	115.3	116.8	117.7	24	117.3	117.6	117.8	24
5/30	116.8	117.1	117.4	24	113.8	114.1	114.8	24	116.2	116.8	117.0	24	114.3	115.3	115.8	24	116.8	117.1	117.7	24
5/31	116.5	116.9	117.2	24	113.4	113.9	114.2	24	117.3	117.8	118.3	24	115.9	117.9	119.0	24	117.1	117.3	117.7	24
6/1	115.9	116.5	116.9	24	111.5	112.3	113.3	24	115.9	116.2	116.7	24	113.4	114.2	116.6	24	117.0	117.2	117.8	24
6/2	114.9	115.3	115.4	24	108.8	109.1	109.6	24	114.2	114.6	115.0	24	111.1	111.5	112.5	24	117.3	117.4	117.6	24
6/3	115.1	115.6	116.0	24	109.1	109.3	109.6	24	115.0	115.5	115.9	24	111.4	112.7	113.4	24	116.4	116.4	116.9	24
6/4	115.1	115.6	116.0	24	109.5	110.1	110.5	24	115.3	115.8	116.3	24	113.0	114.8	115.9	24	116.5	116.6	117.1	24
6/5	116.4	117.2	117.5	24	111.5	112.8	113.5	24	115.9	116.7	117.4	24	113.9	115.4	116.1	24	116.5	116.7	116.8	24
6/6	117.0	117.7	118.2	24	113.9	114.4	114.7	24	116.5	117.0	117.3	24	115.1	117.0	118.1	24	116.6	116.7	116.9	24
6/7	116.7	117.2	117.6	24	113.9	114.4	114.8	24	116.8	117.3	117.6	24	115.7	117.5	118.4	24	116.9	117.1	117.4	24
6/8	116.3	116.8	117.2	24	113.7	114.3	114.7	24	116.4	116.9	117.2	24	115.8	117.0	117.7	24	116.7	116.8	117.1	24
6/9	116.1	116.4	116.6	24	112.3	112.9	113.1	24	116.0	116.5	116.9	24	114.7	115.9	116.9	24	116.9	117.2	117.5	24
6/10	115.5	115.9	116.2	24	109.1	109.6	110.3	24	114.6	115.5	115.9	24	112.0	113.1	113.8	24	116.3	116.4	117.0	24
6/11	113.8	114.2	114.5	23	105.7	106.1	107.0	23	114.4	115.0	115.4	23	111.3	112.7	114.0	23	116.4	116.7	117.0	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 6/12/2015 7:02

### 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/currentsmpsubmitdata.asp>

<b>COMBINED YEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/29/2015 *	---	33	0	---	363	1,002	634	221	8,606	2,620	5,728
05/30/2015 *	---	41	---	---	74	575	464	195	---	2,223	4,786
05/31/2015	---	48	---	---	228	72	165	182	4,418	1,233	4,836
06/01/2015 *	---	61	---	---	75	287	131	149	---	1,090	2,353
06/02/2015 *	---	54	---	---	74	146	318	146	6,184	1,027	4,053
06/03/2015 *	---	35	---	---	222	322	504	25	---	1,081	5,960
06/04/2015 *	---	61	---	---	144	466	151	16	4,795	932	3,694
06/05/2015 *	---	---	---	---	0	217	0	9	---	1,117	2,956
06/06/2015	---	---	---	---	163	144	0	15	4,095	821	1,319
06/07/2015 *	---	---	---	---	0	0	366	10	---	781	1,389
06/08/2015	---	---	---	---	165	72	0	1	2,894	610	1,663
06/09/2015 *	---	---	---	---	162	0	87	1	---	1,510	1,027
06/10/2015	---	---	---	---	81	358	2	0	3,184	1,574	1,039
06/11/2015 *	---	---	---	---	0	179	0	4	---	1,318	621
06/12/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>333</b>	<b>0</b>	<b>0</b>	<b>1,751</b>	<b>3,840</b>	<b>2,822</b>	<b>974</b>	<b>34,176</b>	<b>17,937</b>	<b>41,424</b>
<b># Days:</b>	<b>0</b>	<b>7</b>	<b>1</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>48</b>	<b>0</b>	<b>0</b>	<b>125</b>	<b>274</b>	<b>202</b>	<b>70</b>	<b>4,882</b>	<b>1,281</b>	<b>2,959</b>
<b>YTD</b>	<b>40,054</b>	<b>65,499</b>	<b>7,458</b>	<b>1,081</b>	<b>1,768,682</b>	<b>1,155,834</b>	<b>1,126,302</b>	<b>16,452</b>	<b>1,333,921</b>	<b>658,135</b>	<b>1,709,211</b>

<b>COMBINED SUBYEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/29/2015 *	---	3	67	---	23,286	43,386	2,188	20	1,370	5,628	5,933
05/30/2015 *	---	1	---	---	41,579	36,997	1,590	25	---	4,524	5,547
05/31/2015	---	3	---	---	20,595	7,744	1,550	44	2,379	3,813	3,635
06/01/2015 *	---	0	---	---	29,439	15,908	10,396	355	---	4,109	5,448
06/02/2015 *	---	4	---	---	47,285	14,872	14,587	463	6,227	3,854	5,641
06/03/2015 *	---	0	---	---	72,581	24,327	11,723	312	---	3,095	6,078
06/04/2015 *	---	0	---	---	36,232	26,362	18,321	233	3,611	3,802	5,239
06/05/2015 *	---	---	---	---	100,439	41,944	24,416	268	---	5,373	5,291
06/06/2015	---	---	---	---	35,547	27,061	20,845	268	10,579	6,174	4,273
06/07/2015 *	---	---	---	---	37,099	21,098	13,541	253	---	3,165	3,949
06/08/2015	---	---	---	---	14,236	21,765	13,066	311	13,192	4,227	3,850
06/09/2015 *	---	---	---	---	10,518	14,223	15,346	333	---	6,420	4,009
06/10/2015	---	---	---	---	12,429	9,743	8,735	193	26,433	8,707	5,078
06/11/2015 *	---	---	---	---	12,409	10,583	2,658	299	---	8,444	4,108
06/12/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>11</b>	<b>67</b>	<b>0</b>	<b>493,674</b>	<b>316,013</b>	<b>158,962</b>	<b>3,377</b>	<b>63,791</b>	<b>71,335</b>	<b>68,079</b>
<b># Days:</b>	<b>0</b>	<b>7</b>	<b>1</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>2</b>	<b>67</b>	<b>0</b>	<b>35,262</b>	<b>22,572</b>	<b>11,354</b>	<b>241</b>	<b>9,113</b>	<b>5,095</b>	<b>4,863</b>
<b>YTD</b>	<b>1</b>	<b>60</b>	<b>1,292</b>	<b>2,077</b>	<b>665,080</b>	<b>362,625</b>	<b>184,823</b>	<b>8,465</b>	<b>77,303</b>	<b>94,218</b>	<b>1,561,148</b>

## Two-Week Summary of Passage Indices

<b>COMBINED COHO</b>												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
05/29/2015	*	---	0	0	---	0	1,217	1,300	547	4,429	2,174	8,490
05/30/2015	*	---	0	---	---	74	287	928	458	---	975	7,832
05/31/2015	*	---	0	---	---	0	72	495	463	2,549	430	5,360
06/01/2015	*	---	0	---	---	225	215	752	1,031	---	382	6,501
06/02/2015	*	---	0	---	---	74	0	350	561	2,037	253	4,382
06/03/2015	*	---	0	---	---	148	72	166	175	---	177	4,045
06/04/2015	*	---	0	---	---	0	179	0	128	1,363	215	2,821
06/05/2015	*	---	---	---	---	0	430	336	151	---	276	2,682
06/06/2015	*	---	---	---	---	0	0	200	158	1,024	215	1,922
06/07/2015	*	---	---	---	---	0	72	0	95	---	548	1,368
06/08/2015	*	---	---	---	---	0	72	0	99	1,958	627	2,757
06/09/2015	*	---	---	---	---	81	0	0	72	---	669	2,105
06/10/2015	*	---	---	---	---	0	36	0	49	1,444	670	2,217
06/11/2015	*	---	---	---	---	0	0	0	55	---	753	857
06/12/2015	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>602</b>	<b>2,652</b>	<b>4,527</b>	<b>4,042</b>	<b>14,804</b>	<b>8,364</b>	<b>53,339</b>
<b># Days:</b>		<b>0</b>	<b>7</b>	<b>1</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>43</b>	<b>189</b>	<b>323</b>	<b>289</b>	<b>2,115</b>	<b>597</b>	<b>3,810</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>40,131</b>	<b>59,713</b>	<b>37,558</b>	<b>14,319</b>	<b>64,293</b>	<b>67,008</b>	<b>687,295</b>

<b>COMBINED STEELHEAD</b>												
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2	
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
05/29/2015	*	---	100	2	---	3,700	7,519	2,696	231	4,845	3,344	10,434
05/30/2015	*	---	92	---	---	3,496	7,170	2,651	239	---	2,652	9,137
05/31/2015	*	---	114	---	---	2,660	3,155	1,319	269	3,568	1,204	3,481
06/01/2015	*	---	104	---	---	1,953	3,296	948	362	---	1,052	2,229
06/02/2015	*	---	148	---	---	3,750	2,743	795	140	2,103	1,510	2,520
06/03/2015	*	---	161	---	---	3,027	1,288	207	94	---	541	3,612
06/04/2015	*	---	123	---	---	866	1,540	603	76	2,074	660	2,351
06/05/2015	*	---	---	---	---	2,038	2,079	1,091	61	---	582	3,280
06/06/2015	*	---	---	---	---	5,381	789	802	39	3,071	635	1,139
06/07/2015	*	---	---	---	---	1,822	789	183	24	---	608	1,510
06/08/2015	*	---	---	---	---	4,197	501	97	39	2,809	467	1,687
06/09/2015	*	---	---	---	---	3,479	1,182	260	44	---	535	2,806
06/10/2015	*	---	---	---	---	2,018	2,042	186	22	2,662	502	1,834
06/11/2015	*	---	---	---	---	1,215	1,973	183	22	---	314	1,034
06/12/2015	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>842</b>	<b>2</b>	<b>0</b>	<b>39,602</b>	<b>36,066</b>	<b>12,021</b>	<b>1,662</b>	<b>21,132</b>	<b>14,606</b>	<b>47,054</b>
<b># Days:</b>		<b>0</b>	<b>7</b>	<b>1</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>120</b>	<b>2</b>	<b>0</b>	<b>2,829</b>	<b>2,576</b>	<b>859</b>	<b>119</b>	<b>3,019</b>	<b>1,043</b>	<b>3,361</b>
<b>YTD</b>		<b>2,567</b>	<b>40,127</b>	<b>672</b>	<b>11,678</b>	<b>1,296,371</b>	<b>1,054,877</b>	<b>573,327</b>	<b>12,310</b>	<b>447,651</b>	<b>199,969</b>	<b>1,016,259</b>

## Two-Week Summary of Passage Indices

<b>COMBINED SOCKEYE</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/29/2015 *	---	0	0	---	0	0	32	3	1,022	1,729	3,171	
05/30/2015 *	---	0	---	---	0	72	0	3	---	897	2,067	
05/31/2015	---	0	---	---	0	0	0	3	850	516	1,633	
06/01/2015 *	---	0	---	---	0	0	0	8	---	497	619	
06/02/2015 *	---	0	---	---	0	72	0	8	2,207	586	1,315	
06/03/2015 *	---	0	---	---	0	0	0	1	---	224	1,556	
06/04/2015 *	---	0	---	---	0	0	0	6	1,022	273	1,075	
06/05/2015 *	---	---	---	---	0	0	0	6	---	352	678	
06/06/2015	---	---	---	---	0	0	0	2	938	365	499	
06/07/2015 *	---	---	---	---	0	0	0	1	---	353	439	
06/08/2015	---	---	---	---	0	0	0	0	511	358	689	
06/09/2015 *	---	---	---	---	81	0	0	1	---	344	401	
06/10/2015	---	---	---	---	0	0	0	0	255	402	350	
06/11/2015 *	---	---	---	---	0	0	0	0	---	283	177	
06/12/2015	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>144</b>	<b>32</b>	<b>42</b>	<b>6,805</b>	<b>7,179</b>	<b>14,669</b>	
<b># Days:</b>	<b>0</b>	<b>7</b>	<b>1</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>6</b>	<b>10</b>	<b>2</b>	<b>3</b>	<b>972</b>	<b>513</b>	<b>1,048</b>	
<b>YTD</b>	<b>74</b>	<b>0</b>	<b>4</b>	<b>47</b>	<b>16,119</b>	<b>19,815</b>	<b>11,030</b>	<b>3,802</b>	<b>128,522</b>	<b>103,359</b>	<b>148,049</b>	

<b>COMBINED LAMPREY JUVENILES</b>												
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)	
05/29/2015 *	---	0	0	---	1	50	80	0	0	1,133	0	
05/30/2015 *	---	0	---	---	0	300	200	1	---	525	0	
05/31/2015	---	0	---	---	0	100	40	2	300	220	0	
06/01/2015 *	---	0	---	---	0	100	60	2	---	226	0	
06/02/2015 *	---	0	---	---	0	100	20	0	200	375	100	
06/03/2015 *	---	0	---	---	0	100	600	2	---	613	78	
06/04/2015 *	---	0	---	---	0	100	0	0	150	320	0	
06/05/2015 *	---	---	---	---	1	50	100	0	---	360	14	
06/06/2015	---	---	---	---	0	100	0	1	700	408	0	
06/07/2015 *	---	---	---	---	0	50	100	0	---	250	34	
06/08/2015	---	---	---	---	2	100	0	0	800	13	30	
06/09/2015 *	---	---	---	---	0	500	0	2	---	325	110	
06/10/2015	---	---	---	---	0	300	100	0	450	320	48	
06/11/2015 *	---	---	---	---	0	300	50	0	---	260	50	
06/12/2015	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2,250</b>	<b>1,350</b>	<b>10</b>	<b>2,600</b>	<b>5,348</b>	<b>464</b>	
<b># Days:</b>	<b>0</b>	<b>7</b>	<b>1</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>0</b>	<b>161</b>	<b>96</b>	<b>1</b>	<b>371</b>	<b>382</b>	<b>33</b>	
<b>YTD</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>6,206</b>	<b>1,600</b>	<b>22</b>	<b>4,315</b>	<b>16,548</b>	<b>3,665</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:

6/12/15 7:03 AM

**05/29/15 TO 06/12/15**

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	326,750	1,150	400	25,600	50	353,950
	Sum of NumberBarged	326,097	1,132	397	23,342	39	351,007
	Sum of NumberBypassed	163	0	0	2,172	0	2,335
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	40	0	0	5	0	45
	Sum of FacilityMorts	450	2	3	41	7	503
	Sum of ResearchMorts	0	16	0	40	4	60
	Sum of TotalProjectMorts	490	18	3	86	11	608
<b>LGS</b>	Sum of NumberCollected	220,494	2,679	1,850	25,166	100	250,289
	Sum of NumberBarged	220,317	2,658	1,836	25,129	100	250,040
	Sum of NumberBypassed	45	0	0	0	0	45
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	5	1	0	0	0	6
	Sum of FacilityMorts	127	20	14	37	0	198
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	132	21	14	37	0	204
<b>LMN</b>	Sum of NumberCollected	92,702	1,715	2,760	7,267	20	104,464
	Sum of NumberBarged	92,562	1,703	2,759	7,234	20	104,278
	Sum of NumberBypassed	5	0	0	0	0	5
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	7	2	1	3	0	13
	Sum of FacilityMorts	128	10	0	30	0	168
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	135	12	1	33	0	181
Total Sum of NumberCollected		639,946	5,544	5,010	58,033	170	708,703
Total Sum of NumberBarged		638,976	5,493	4,992	55,705	159	705,325
Total Sum of NumberBypassed		213	0	0	2,172	0	2,385
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		52	3	1	8	0	64
Total Sum of FacilityMorts		705	32	17	108	7	869
Total Sum of ResearchMorts		0	16	0	40	4	60
Total Sum of TotalProjectMorts		757	51	18	156	11	993

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/12/15 7:03 AM

TO: 06/12/15

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	444,090	1,149,878	26,150	10,860	824,824	2,455,802
	Sum of NumberBarged	435,084	473,033	22,642	10,431	361,642	1,302,832
	Sum of NumberBypassed	8,313	676,470	3,499	160	462,874	1,151,316
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	70	43	0	7	30	150
	Sum of FacilityMorts	623	316	9	255	238	1,441
	Sum of ResearchMorts	0	16	0	7	40	63
	Sum of TotalProjectMorts	693	375	9	269	308	1,654
<b>LGS</b>	Sum of NumberCollected	253,010	806,809	41,671	13,841	736,385	1,851,716
	Sum of NumberBarged	252,798	544,676	39,935	13,796	522,959	1,374,164
	Sum of NumberBypassed	75	261,966	1,720	40	213,220	477,021
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	5	21	0	2	8	36
	Sum of FacilityMorts	132	146	16	3	198	495
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	137	167	16	5	206	531
<b>LMN</b>	Sum of NumberCollected	108,190	642,242	22,090	6,690	321,317	1,100,529
	Sum of NumberBarged	107,905	581,340	21,786	6,640	284,165	1,001,836
	Sum of NumberBypassed	133	60,572	300	30	36,794	97,829
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	7	45	2	0	36	90
	Sum of FacilityMorts	145	315	2	20	322	804
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	152	360	4	20	358	894
Total Sum of NumberCollected		805,290	2,598,929	89,911	31,391	1,882,526	5,408,047
Total Sum of NumberBarged		795,787	1,599,049	84,363	30,867	1,168,766	3,678,832
Total Sum of NumberBypassed		8,521	999,008	5,519	230	712,888	1,726,166
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		82	109	2	9	74	276
Total Sum of FacilityMorts		900	777	27	278	758	2,740
Total Sum of ResearchMorts		0	16	0	7	40	63
Total Sum of TotalProjectMorts		982	902	29	294	872	3,079

**Cumulative Adult Passage at Mainstem Dams Through: 06/11**

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	06/11	220480	13314	188083	26094	132065	23978	32763	3235	27521	4315	20423	4315	0	0	0	0	0	0
TDA	06/11	194116	12307	143142	21080	101070	20309	17046	1774	16080	2492	12033	2460	0	0	0	0	0	0
JDA	06/11	166015	11514	123224	19103	88117	19021	11547	1172	12051	1570	7908	1700	0	0	0	0	0	0
MCN	06/10	156151	8767	107147	16033	79364	15788	3219	260	2829	469	2165	461	0	0	0	0	0	0
IHR	06/11	116462	5745	79298	12428	54950	10332	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/11	110157	8454	78445	13543	53651	9211	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/11	103058	8095	76447	12985	48497	9848	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/11	102031	7682	75550	12468	45834	10536	0	0	0	0	0	0	0	0	0	0	0	0
PRD	06/10	25548	1492	21476	2518	14806	1559	0	0	0	0	0	0	0	0	0	0	0	0
WAN	06/10	24682	1004	0	0	14808	2079	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/10	26785	1004	19966	2722	13229	2300	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/10	10770	545	10190	2204	5373	1025	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/09	8333	1001	8317	1978	3570	1003	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/08	46199	1778	21696	835	23422	735	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2015		2014		10-Yr Avg.		2015	2014	10-Yr Avg.	2015	2014	10-Yr Avg.	Wild 2015	Wild 2014	10-Yr Avg.	2015	2014	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	06/11	0	0	5	-2	0	0	14481	7548	4578	6106	7526	6830	2878	1933	1739	3681	5854	2341
TDA	06/11	0	0	0	0	0	0	6401	3199	2064	691	1383	2894	221	321	1016	1364	73	38
JDA	06/11	0	0	0	1	0	1	5675	2173	1289	835	3611	5385	404	1319	1831	658	147	49
MCN	06/10	9	4	0	0	1	0	1743	194	234	903	1069	5503	427	389	1794	36	8	2
IHR	06/11	0	0	0	0	0	0	6	1	0	1316	1986	5042	727	788	1518	18	7	0
LMN	06/11	0	0	0	0	0	0	8	1	0	3513	5510	6729	1857	1620	2150	7	3	0
LGS	06/11	0	0	0	0	0	0	13	0	0	1511	1679	3113	1002	1028	1450	1	0	0
LGR	06/11	0	0	0	0	0	0	13	0	0	9197	7547	8820	4350	3469	3241	0	1	0
PRD	06/10	0	0	0	0	0	0	432	61	25	52	124	61	0	0	0	83	10	2
WAN	06/10	0	0	0	0	0	0	238	0	9	64	0	128	0	0	0	46	0	0
RIS	06/10	0	0	0	0	0	0	99	5	1	139	288	124	91	157	62	0	0	0
RRH	06/10	0	0	0	0	0	0	28	4	0	116	261	369	80	160	261	0	0	0
WEL	06/09	0	0	0	0	0	0	5	0	0	48	130	80	35	77	55	0	0	2
WFA	06/08	1	0	9	0	0	0	0	0	0	6290	14345	15105	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.