



# Fish Passage Center

## Weekly Report #15-14

June 19, 2015

### Summary of Events

#### Water Supply:

Precipitation throughout the Columbia Basin has varied between 33% and 81% of average at individual sub-basins over June. Precipitation above The Dalles has been 60% of average over early June. Over the 2015 water year, precipitation has ranged between 77% 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 June 1-17, 2015		Water Year 2015 October 1, 2014 to June 17, 2015	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.34	73	29.7	98
SNAKE RIVER ABOVE ICE HARBOR	0.49	53	15.6	82
Columbia Above The Dalles	0.71	60	20.1	87
Kootenai	1.66	80	30.7	99
Clark Fork	0.56	40	17.3	77
Flathead	1.16	65	26.6	90
Pend Oreille River Basin above Waneta Dam	0.88	55	22.9	84
Salmon River Basin	0.77	55	19.2	80
Upper Snake Tributaries	0.80	81	17.8/	79
Clearwater	0.75	44	29.2	83
Willamette River above Portland	0.46	33	Data Missing	Data Missing

Table 2 displays the June 18<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs along with the June COE forecasts at Libby and Dworshak. The June 18<sup>th</sup> ESP

forecast at The Dalles between April and August is 59,732 Kaf (68% of average).

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

Location	June 18, 2015 5-day QPF ESP	
	% Average (1981-2010)	Runoff Volume (Kaf)
The Dalles (Apr-Aug)	68	59732
Grand Coulee (Apr-Aug)	75	42692
Libby Res. Inflow, MT (Apr-Aug)	76 86*	4473 *5090
Hungry Horse Res. Inflow, MT (Apr-Aug)	67	1292
Lower Granite Res. Inflow (Apr- July)	51	10032
Brownlee Res. Inflow (Apr-July)	43	2328
Dworshak Res. Inflow (Apr-July)	47 42*	1143 *1113

\* Denotes COE June Forecast

Grand Coulee Reservoir is at 1275.3 feet (6-18-15) and has refilled 5.9 feet over the last week. Outflows at Grand Coulee have ranged between 89.0 and 118.3 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2440.6 feet (6-18-15) and has refilled 1.9 feet over the previous week. Daily average outflows at Libby Dam have been 11.4 to 14.7 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3549.7 feet (6-18-15) and has refilled 0.8 feet over the last week. Outflows at Hungry Horse have been 2.5 Kcfs over the last week.

Dworshak is currently at an elevation of 1598.9 feet (6-18-15) and has held steady over the last week; Dworshak is 1.1 feet from full. Outflows have ranged from 3.0 to 5.3 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2076.2 feet on June 18, 2015, and has held steady over the last week. Hells Canyon outflows have ranged between 6.4-11.2 Kcfs over the last four days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8<sup>rd</sup>, 2015), the flow objective this spring is 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 53.8 Kcfs over the spring season and 37.7 Kcfs last week.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives is 220 Kcfs at McNary Dam (began April 10<sup>th</sup>) and 135 Kcfs at Priest Rapids Dam (began April 10<sup>th</sup>). Over the spring season, flows at McNary Dam have averaged 178.4 Kcfs and Priest Rapids Dam flows have averaged 116.8 Kcfs. Over the last week, flows at McNary have averaged 161.2 Kcfs and averaged 112.6 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. Spring spill is scheduled to end on June 20<sup>th</sup> in the Snake River. At the middle Columbia River projects, summer spill was initiated on June 16<sup>th</sup> as part of rolled over court ordered operations.

At the lower Snake River projects spill has been implemented according to the 2015 Fish Operations Plan (FOP) over the past week. Spill at Little Goose Dam was changed to a fixed amount of 11 Kcfs. This was done to maintain compatibility with Lower Granite and Lower Monumental dam operations. As flows decrease, the operation at Lower Monumental Dam is changing to spilling all water above that needed to operate one turbine unit. 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. Over the past week the flows have decreased to the point where Ice Harbor is spilling all water in excess of that needed to operate one turbine unit on days when the 45 Kcfs/gas cap spill is in place.

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. All projects are currently spilling to summer spill levels.

Project	Spill Level Day/Night
McNary	40%/40% 50%/50% beginning June 16 <sup>th</sup>
John Day	<b>April 28-June 15:</b> 30%/30% and 40%/40% <b>June 16-July 20:</b> 30%/30% and 40%/40%
The Dalles	40%/40%
Bonneville	<b>April 10 – June 15:</b> 100 Kcfs/100 Kcfs <b>June 16 – Aug 31:</b> 85 kcfs/121 kcfs and 95 kcfs/95 kcfs

Over the past week the TDG measurement exceeded the waiver limits (115%) at the Ice Harbor Dam forebay monitor early in the week, but dropped below the waiver limit and has remained below since June 14<sup>th</sup>. **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, Salmon River, and Grande Ronde River traps has been terminated for the season. Sampling at the Imnaha River Trap is ongoing.

Passage of spring migrants (e.g., yearling Chinook, steelhead, coho, and sockeye) was low at 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 decreased at the Snake River sites but increased at the Lower Columbia River sites. At the Upper Columbia site (RIS), subyearling Chinook passage this week was similar to last week.

This week's samples at Bonneville Dam (BON) were dominated by subyearling Chinook. This week's daily average passage index was 7,800 which is an increase over last week's daily average passage index of about 4,400. Passage of yearling Chinook, coho, sockeye, and steelhead all decreased this week. This week's daily average passage indices for these species were 340, 600, 110, and 300 per day, respectively. Last week's daily average passage indices were 1,400 for yearling Chinook, 2,000 for coho, 460 for sockeye, and 1,900 for steelhead. Finally, Pacific lamprey ammocoetes were encountered in one of this week's samples (June 13<sup>th</sup>) while macrophthalmia were encountered in five of the seven sample days.

Subyearling Chinook continued to dominate the collections at John Day Dam (JDA) this week. This week's daily average passage index for subyearling Chinook was about 26,300 per day, which is a large increase over last week's daily average passage index of just over 6,000. Passage of yearling Chinook, coho, sockeye, and steelhead continued to decrease this week, when compared to the previous week. This week's daily average passage indices for these four species were about 580, 300, 100, and 70, respectively. Last week's daily average passage indices were about 1,100 for yearling Chinook, 530 for coho, 350 for sockeye, and 520 for steelhead. Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of about 400 per day. This is an increase over last week's daily average collection of about 280 macrophthalmia per day. Finally, mortality levels for subyearling Chinook have been elevated at JDA over the past several days, with a maximum daily mortality of nearly 5% in the June 17 sample. The COE has been investigating the issue, including conducting video exams of traveling screens on June 17<sup>th</sup>. These video inspections revealed some faulty rivets in the screens, which are now under repair. At nearly 2%, the mortality rate for the sample on June 18 was lower than the previous three days. However, it is too early to determine whether the repairs to the faulty rivets completely remedied the elevated mortalities. Samples over the next few days will be monitored closely.

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 41,500, which is an increase over last week's daily average passage index of about 16,700. Yearling Chinook, coho, sockeye, and steelhead passage at MCN all decreased this week, when compared to last week. This week's daily average passage indices for these four species were about 1,330, 175, 85, and 700, respectively. Finally, Pacific lamprey macrophthalmia were encountered in all four of this week's samples. The daily average collection for lamprey macrophthalmia this week was about 580. To date, MCN has not sampled any pacific lamprey ammocoetes for 2015.

Samples at Lower Granite Dam (LGR) continued to be dominated by subyearling Chinook juveniles this week. This week's daily average passage index for subyearling Chinook at LGR was about 12,500, which was a decrease over last week's daily average passage index of nearly 32,000 fish per day. Passage of yearling Chinook and steelhead continued to decrease this week. This week's daily average passage indices were about 40 for yearling Chinook and 200 for steelhead. No sockeye or coho juveniles were encountered in this week's samples at LGR. Finally, one Pacific lamprey ammocoete was encountered in the June 16 sample and one macrophthalmia was encountered in the June 15<sup>th</sup> sample.

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 14,350 fish per day, which is a decrease from last week's daily average passage index of nearly 21,000 per day. Passage of spring migrants continued to decrease this week. The daily average passage indices of spring migrants were 100 for yearling Chinook, 30 for coho, and 750 for steelhead. No sockeye were encountered in this week's samples. Finally, Pacific lamprey macrophthalmia were encountered in all of this week's samples, with a daily average collection of about 165 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 7,100 per day. This is a decrease over last week's daily average passage index of about 14,100 per day. Passage of yearling Chinook, coho, and steelhead continued to decrease this week, when compared to the previous week. This week's daily average passage indices for these here species were about 20, 4, and 275, respectively. Last week's daily average passage indices were about 65 for yearling Chinook,

80 for coho, and 400 for steelhead. No sockeye juveniles were encountered in this week's samples at LMN. Finally, Pacific lamprey macrophthalmia were encountered in all seven of this week's samples. The daily average collection was nearly 90 per day.

SMP samples at Rock Island Dam (RIS) continued to be dominated by subyearling Chinook juveniles this week. This week's daily average passage index was about 230 fish per day, which was similar to last week's daily average passage index of about 275 per day. Yearling Chinook and sockeye passage was extremely low this week. In fact, yearling Chinook were only encountered in one sample this week and sockeye were only encountered in four samples this week. Coho and steelhead passage decreased this week, when compared to last week. This week's daily average passage indices for these two species were about 25 and 17 per day. Last week's daily average passage indices were about 100 for coho and 35 for steelhead. Finally, Pacific lamprey macrophthalmia were encountered every day this week, with daily collections ranging from 1-4 fish per day.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at IMN is year-round however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through June 7. Over the last week of available data (June 1-7), collections at IMN were dominated by steelhead, with a daily average collection of just over 100 fish per day. This is a decrease when compared to the daily average collection from the previous week of data (May 24-31), which was about 160 per day. Over the June 1-7 period, approximately 69% of the steelhead collected at IMN were of known hatchery origin. Yearling Chinook passage increased over the June 1-7 period, when compared to the previous 7-day period (May 24-31). Over the June 1-7 period, the daily average collection for yearling Chinook was about 77, whereas that for the May 24–May 31 period was about 22 per day. Finally, subyearling Chinook juveniles were encountered in four of the seven days sampled in the June 1-7 period, although sample counts averaged only 3 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 and no new releases are scheduled over the next two 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. No new releases were scheduled to begin in this zone this week. However, two releases totaling nearly 10.5 million subyearling fall Chinook juveniles that began last week are scheduled to continue through late June. Of these fall Chinook juveniles, about 67% are from Priest Rapids Hatchery while the remaining 33% are from Ringold Springs Hatchery. A large portion (37%) of these subyearlings will have marks that are not externally visible (e.g., otolith and/or CWT), 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. Approximately 4.5 million subyearling fall Chinook are scheduled to be released from Little White Salmon NFH, beginning on or around July 2<sup>nd</sup>. No other releases of juvenile salmonids are scheduled for this zone over the next two weeks.

## Adult Passage :

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 2,865 and 3,945 adult summer Chinook in the last week. The 2015 summer Chinook count of 55,940 is about 1.3 times greater than the 2014 count and 1.6 times greater than the 10-year average. The 2015 summer Chinook jack count of 6,034 is about 76.9% of the 2014 count and 78.5% of the 10-year average count. At Willamette Falls, 49,342 adult spring Chinook have been counted so far this year. In 2014, 23,540 adult spring Chinook were counted at Willamette Falls. This year's count is about 2.1 times greater than the 2014 count and 1.9 times greater than the 10-year average count of 25,694. As of June 18<sup>th</sup>, a total of 20,303 adult summer Chinook have been

counted at have been counted at McNary Dam and 548 have been counted at Lower Granite Dam. The 2015 McNary Dam adult summer Chinook count has 500 fewer fish than the 2014 count, while being 1.4 times greater than the 10-year average count. Adult spring Chinook are counted at Lower Granite Dam through June 17<sup>th</sup> each year. The total 2015 Lower Granite Dam adult spring Chinook count of 104,873 is about 1.3 times greater than the 2014 count and 2.1 times greater than the 10-year average count.

The 2015 Bonneville Dam adult steelhead count of 7,253 has 1,926 fewer fish than the 2014 count of 9,215 and 1,361 fewer fish than the 10-year average count of 8,614. The 2015 Bonneville Dam adult wild steelhead count of 3,309 is about 1.4 times greater than the 2014 count of 2,446 and 1.5 times greater than the 10-year average count of 2,213. Daily adult steelhead counts at Lower Granite Dam ranged from 2 to 7 adults per day last week. This year's Lower Granite steelhead count of 9,219 is about 1.2 times greater than the 2014 count of 7,604 and has 365 more fish than the 10-year average count of 8,854. The 2015 Lower Granite Dam adult wild steelhead count of 4,357 is 1.3 times greater than the 2014 count of 3,479 and is about 1.3 times greater than the 10-year average count of 3,242. At Willamette Falls, the 2015 count for steelhead was 6,602 as of June 16<sup>th</sup>. This year's steelhead count is about 38.4% of the 2014 count of 17,187 and about 38.1% of the 10-year average count of 17,327.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 4,296 and 13,867 last week. The 2015 adult sockeye count at Bonneville Dam of 76,502 is 1.9 times greater than the 2014 count and 2.4 times greater than the 10-year average count. The 2015 adult sockeye count at McNary Dam of 22,628 is 1.8 times greater than the 2014 count and 3.9 times greater than the 10-year average count.

## Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:		6/6/2015	to		06/19/15				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2015	7,000,000	06-12-15	06-25-15	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
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>10,500,000</b>				
<b>Grand Total</b>					<b>10,500,000</b>				

## Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:		6/20/2015	to		7/2/2015				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2015	4,500,000	07-02-15	07-02-15	Little White Salmon Hatchery	Little White Salmon River
<b>U.S. Fish and Wildlife Service Total</b>					<b>4,500,000</b>				
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2015	7,000,000	06-12-15	06-25-15	Priest Rapids Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>7,000,000</b>				
<b>Grand Total</b>					<b>11,500,000</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
06/05/2015	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
06/12/2015	106.2	0.1	102.1	0.0	104.7	7.4	100.5	10.1	104.1	21.5	100.6	19.4	96.8	28.3
06/13/2015	101.1	0.1	103.1	0.0	112.0	8.5	110.4	8.7	117.0	20.0	123.8	20.2	122.4	36.1
06/14/2015	98.2	0.1	97.9	0.0	107.0	7.4	105.5	8.8	109.3	20.0	118.4	19.9	117.6	29.1
06/15/2015	118.2	0.1	120.2	0.0	127.4	8.2	127.7	10.4	132.2	23.4	137.9	24.7	133.4	28.9
06/16/2015	93.2	0.1	96.0	0.0	112.2	8.1	109.5	10.6	113.0	25.1	138.4	19.2	142.1	26.8
06/17/2015	89.0	0.1	87.3	0.0	93.5	7.5	88.1	8.9	89.9	22.1	94.1	17.1	93.9	25.8
06/18/2015	55.0	0.0	55.7	0.0	57.6	7.2	55.9	7.6	57.7	16.8	54.8	14.3	52.9	27.6

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

Date	Dworshak		Brownlee Inflow	Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	
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	
06/12/2015	3.1	0.0	---	9.1	44.3	20.2	44.2	13.2	45.8	20.0	46.5	36.8	
06/13/2015	2.9	0.0	---	8.8	43.6	20.3	40.6	12.1	41.8	19.4	42.7	16.4	
06/14/2015	3.0	0.0	---	8.5	38.3	20.5	35.0	10.5	34.2	18.6	34.3	11.0	
06/15/2015	3.0	0.0	---	8.5	34.4	20.4	31.8	9.3	31.5	18.6	30.5	17.2	
06/16/2015	3.0	0.0	---	8.4	35.4	20.6	35.3	10.7	35.6	21.0	36.1	26.5	
06/17/2015	5.3	0.0	---	7.3	33.3	20.5	29.9	10.7	31.1	18.6	32.5	12.2	
06/18/2015	5.3	0.0	---	8.2	33.8	20.4	35.0	10.8	32.8	19.5	33.4	10.0	

**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		
06/05/2015	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
06/12/2015	173.4	69.5	154.5	49.3	141.3	56.5	157.4	100.0	0.9	44.0
06/13/2015	160.6	64.2	160.2	63.9	143.2	57.0	154.7	101.1	0.9	40.4
06/14/2015	151.7	60.7	151.4	58.0	135.4	53.9	147.9	99.5	0.9	35.1
06/15/2015	174.6	70.1	167.6	50.2	153.2	61.4	173.1	99.3	0.9	60.5
06/16/2015	173.7	86.8	167.2	53.1	154.9	61.9	172.3	95.4	0.9	63.6
06/17/2015	162.0	80.9	149.8	59.9	135.1	54.0	157.3	94.5	0.9	49.4
06/18/2015	132.7	66.3	117.5	46.9	107.9	43.2	136.5	90.1	---	---

## 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>											
	06/08/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/15/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	06/10/15	Chinook + Steelhead	75*	0	0			0	0	0	0
	06/17/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	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
	06/15/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/17/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Bonneville Dam</b>											
	06/10/15	Chinook + Steelhead	93*	0	0			0	0	0	0
	06/13/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/17/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	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
	06/16/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/18/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0



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

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

Date	<u>Hungry H. Dnst</u>			#	<u>Boundary</u>			#	<u>Grand Coulee</u>			#	<u>Grand C. Tlwr</u>			#	<u>Chief Joseph</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/5	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	107.5	108.0	24	---	---	---	0	107.6	108.0	108.2	24	106.0	106.7	107.1	24	107.6	107.8	107.9	24
6/12	107.1	107.5	107.7	24	---	---	---	0	107.4	107.7	107.9	24	105.7	106.1	106.7	24	107.2	107.4	107.8	24
6/13	106.3	106.7	107.1	24	---	---	---	0	106.8	107.0	107.2	24	105.1	105.7	106.0	24	106.6	106.9	107.1	24
6/14	105.8	106.2	106.6	24	---	---	---	0	106.6	106.6	106.7	24	105.4	106.1	106.5	24	106.4	106.8	107.0	24
6/15	105.6	105.9	106.1	24	---	---	---	0	106.7	106.9	107.0	24	106.3	106.9	107.2	24	106.6	107.0	107.4	24
6/16	105.8	106.4	106.9	24	---	---	---	0	106.8	107.1	107.6	24	106.1	106.9	107.7	24	106.9	107.4	107.8	24
6/17	106.0	106.3	106.5	24	---	---	---	0	107.5	108.0	109.0	24	106.5	107.3	108.5	24	107.3	107.6	108.1	24
6/18	106.5	106.9	107.4	23	---	---	---	0	108.1	108.4	108.7	23	106.2	106.8	107.3	23	107.1	107.3	107.5	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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/5	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	24	107.7	108.1	108.6	21	108.5	109.2	109.8	21	109.0	109.2	109.5	24	112.2	112.8	113.3	24
6/12	106.8	107.2	107.5	24	106.8	107.3	108.2	22	107.3	108.2	108.7	22	108.0	108.1	108.2	24	111.6	112.4	112.8	24
6/13	106.4	106.8	107.2	24	106.6	107.4	108.0	24	107.1	108.4	108.8	24	107.4	107.5	107.7	24	111.3	111.9	112.3	24
6/14	106.1	106.4	107.1	24	107.2	107.8	108.3	22	107.4	108.4	109.0	22	107.8	108.3	108.8	24	111.2	112.2	112.4	24
6/15	106.0	106.3	106.7	24	107.1	107.7	108.2	21	108.0	109.0	109.5	21	108.6	109.0	109.2	24	111.9	113.1	113.7	24
6/16	106.8	107.3	108.4	24	107.2	107.7	108.3	23	107.5	108.6	109.4	23	109.1	109.4	109.8	24	111.9	112.9	113.3	24
6/17	107.3	107.6	108.4	24	107.4	108.1	108.5	24	107.1	108.6	109.1	24	109.5	109.7	110.4	24	111.4	112.1	112.8	24
6/18	107.0	107.2	107.5	23	108.3	108.9	109.3	21	108.1	109.2	109.7	21	109.5	109.8	110.3	23	111.6	112.9	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>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>		
	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	
6/5	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	109.5	110.0	24	114.3	115.1	118.0	24	---	---	---	0	---	---	---	0	---	---	---	0
6/12	108.1	108.7	109.4	24	113.8	114.9	116.9	24	---	---	---	0	---	---	---	0	---	---	---	0
6/13	108.2	108.8	109.3	24	113.2	113.8	114.8	24	107.4	109.3	110.7	24	110.9	111.4	112.0	24	107.6	109.1	110.7	24
6/14	108.0	108.7	109.4	24	113.2	113.8	114.2	24	109.3	110.5	111.1	24	112.2	112.4	112.6	24	110.0	110.9	112.2	24
6/15	108.7	110.0	110.9	23	114.5	115.4	117.8	23	111.0	112.0	112.9	24	112.7	113.0	114.0	24	111.9	112.4	113.3	24
6/16	109.4	110.0	110.5	24	115.1	115.9	117.2	24	111.3	111.9	112.8	24	112.4	112.7	113.0	24	111.4	111.9	112.6	24
6/17	109.6	110.0	110.4	24	115.1	116.2	117.5	24	109.2	109.5	110.1	24	111.5	112.0	112.8	24	109.7	110.3	110.7	24
6/18	109.3	109.5	110.0	23	114.9	115.7	118.7	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>Clwrtr-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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
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	102.8	103.8	104.5	24	102.0	103.1	104.4	24	102.8	104.0	105.0	22
6/12	---	---	---	0	---	---	---	0	102.8	103.5	104.5	24	102.0	102.9	104.4	24	102.8	104.1	105.3	24
6/13	112.3	113.2	115.4	24	---	---	---	0	104.6	105.6	106.4	24	101.8	103.0	104.3	24	102.3	103.7	104.9	24
6/14	112.7	112.9	113.1	24	---	---	---	0	104.5	105.2	106.0	24	102.1	103.5	104.8	24	102.5	104.1	105.7	24
6/15	113.5	113.8	114.2	24	---	---	---	0	104.9	105.8	106.3	24	102.7	104.1	105.3	24	102.4	103.8	105.4	24
6/16	112.8	113.1	113.6	24	---	---	---	0	104.5	105.3	106.1	24	102.8	104.2	105.6	24	102.9	104.6	106.4	24
6/17	112.5	113.0	114.1	24	---	---	---	0	98.3	99.0	103.6	24	101.3	102.2	103.1	24	102.8	104.4	105.7	24
6/18	---	---	---	0	---	---	---	0	98.0	98.6	99.2	23	100.9	101.9	103.0	23	102.7	104.2	106.2	23

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

Date	<u>Clwrtr-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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
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	24	103.5	103.6	103.9	24	111.6	111.8	112.0	24	110.8	111.0	111.3	24	111.7	112.1	112.6	24
6/12	102.3	104.0	105.4	24	103.0	103.5	103.9	24	111.9	112.3	112.9	24	110.5	110.8	111.1	24	111.3	111.7	112.0	24
6/13	102.4	104.4	105.9	23	102.8	103.1	103.4	24	112.3	112.5	113.5	24	109.4	109.6	109.7	24	110.8	111.3	111.6	24
6/14	102.8	105.1	106.7	23	102.3	102.6	102.8	24	112.7	112.9	113.3	24	109.3	109.8	110.3	24	110.4	110.9	111.2	24
6/15	103.1	105.3	107.1	24	101.5	101.7	101.8	24	113.2	113.5	113.8	24	108.8	109.1	110.1	24	110.1	110.5	110.7	24
6/16	103.4	105.8	107.3	24	100.5	100.7	100.7	24	112.8	113.0	113.6	24	108.8	109.2	109.5	24	110.3	110.8	111.3	24
6/17	103.2	105.3	106.8	24	100.3	100.5	100.6	24	112.7	112.9	114.0	24	108.9	109.1	109.4	24	110.0	110.6	111.0	24
6/18	103.0	104.9	106.6	23	101.2	101.5	101.8	23	112.6	112.8	113.0	23	111.0	111.4	111.6	23	108.2	109.2	109.9	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>					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
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	22	113.3	114.3	115.1	22	117.0	117.1	117.4	24	112.6	113.5	114.0	24	---	---	---	0
6/12	111.4	111.7	111.9	24	113.7	114.2	114.7	24	116.2	116.6	116.9	24	112.8	113.5	114.2	24	---	---	---	0
6/13	110.5	110.6	110.8	24	114.1	114.7	115.2	24	114.4	114.7	115.1	24	111.7	112.0	112.1	24	---	---	---	0
6/14	109.8	110.0	110.2	24	114.3	115.5	116.0	24	112.6	112.8	113.3	24	111.1	111.8	112.3	24	---	---	---	0
6/15	110.1	110.6	111.5	24	115.0	115.8	116.2	24	112.0	112.1	112.3	24	110.9	111.3	111.7	24	---	---	---	0
6/16	111.6	112.0	112.4	24	115.6	115.9	116.3	24	112.4	112.9	113.3	24	113.2	114.0	114.9	24	---	---	---	0
6/17	111.2	111.5	111.7	24	114.9	115.9	116.3	24	112.7	112.9	113.0	24	112.8	113.2	113.7	24	---	---	---	0
6/18	111.5	111.7	112.1	23	115.7	116.2	116.4	23	113.6	113.8	114.0	23	112.6	113.2	113.7	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>				
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	23
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	24	114.1	115.2	116.2	24	109.2	109.8	110.3	24	114.2	114.5	115.0	24	107.3	107.5	108.0	24
6/12	109.6	109.9	110.7	24	113.8	114.4	114.8	24	108.1	108.3	108.9	24	113.7	114.0	114.2	24	106.4	107.0	107.4	24
6/13	108.3	108.6	109.2	24	113.8	114.1	114.5	24	107.5	107.9	108.3	24	111.7	112.2	112.7	24	106.5	107.7	109.4	24
6/14	108.3	108.6	108.8	24	113.1	113.3	113.6	24	107.8	108.4	108.9	24	112.2	112.5	113.0	24	110.4	110.9	111.3	24
6/15	108.8	109.4	111.7	23	114.7	115.7	116.3	24	107.7	108.0	108.6	24	112.4	112.8	113.4	24	111.0	111.5	112.0	24
6/16	109.1	109.7	110.6	24	116.1	116.6	116.8	24	106.8	107.0	107.9	24	111.8	112.4	113.0	24	108.6	109.3	110.2	24
6/17	109.9	110.2	110.5	24	115.8	116.2	116.6	24	105.9	106.3	106.7	24	111.5	111.9	112.4	24	106.9	107.1	107.5	24
6/18	109.9	110.2	110.9	23	115.6	115.8	116.0	23	106.1	106.6	107.2	23	111.6	111.9	112.1	23	107.8	108.3	108.5	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>				
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	24	105.7	106.1	107.0	24	114.3	115.0	115.4	24	111.4	112.8	114.0	24	116.4	116.7	117.0	24
6/12	113.3	113.6	113.8	24	104.9	105.3	105.7	24	114.5	115.4	116.0	24	110.3	111.6	112.3	24	116.4	116.9	117.0	24
6/13	113.1	113.7	113.8	24	105.8	106.6	107.3	24	115.9	116.2	116.4	24	112.7	115.1	116.4	24	116.9	117.1	117.3	24
6/14	115.4	116.2	116.6	24	107.6	109.0	109.5	24	117.0	117.7	118.1	24	114.6	116.8	118.1	24	116.9	117.1	117.2	24
6/15	116.1	117.0	117.5	24	110.4	111.3	111.9	24	116.8	117.7	118.5	24	116.1	117.3	118.2	24	116.8	117.0	117.3	24
6/16	114.8	115.2	115.5	24	109.9	110.3	110.7	24	115.2	115.9	116.5	24	112.5	113.6	114.2	24	116.5	116.8	117.1	24
6/17	113.8	114.3	114.4	24	107.3	107.7	108.0	24	115.1	116.1	116.7	24	111.8	113.2	113.9	24	116.6	116.7	116.9	24
6/18	113.5	114.0	114.3	23	106.8	107.2	107.4	23	115.2	115.7	115.9	23	113.3	114.0	114.8	23	114.3	114.8	117.1	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 6/19/2015 8:30

### 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)
06/05/2015 *	---	78	---	---	0	217	0	9	---	1,117	2,956
06/06/2015 *	---	130	---	---	163	144	0	15	4,095	821	1,319
06/07/2015 *	---	117	---	---	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	---	---	---	---	0	143	135	0	1,725	946	758
06/13/2015 *	---	---	---	---	187	143	0	0	---	773	402
06/14/2015	---	---	---	---	98	72	0	2	2,043	335	408
06/15/2015 *	---	---	---	---	0	36	0	0	---	438	130
06/16/2015	---	---	---	---	0	150	0	0	734	501	485
06/17/2015 *	---	---	---	---	0	30	0	0	---	304	165
06/18/2015	---	---	---	---	0	146	0	0	842	777	63
06/19/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>325</b>	<b>0</b>	<b>0</b>	<b>856</b>	<b>1,690</b>	<b>590</b>	<b>42</b>	<b>15,517</b>	<b>11,805</b>	<b>12,425</b>
<b># Days:</b>	<b>0</b>	<b>3</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>108</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>121</b>	<b>42</b>	<b>3</b>	<b>2,217</b>	<b>843</b>	<b>888</b>
<b>YTD</b>	<b>40,054</b>	<b>65,824</b>	<b>7,458</b>	<b>1,081</b>	<b>1,768,967</b>	<b>1,156,554</b>	<b>1,126,437</b>	<b>16,454</b>	<b>1,339,265</b>	<b>662,209</b>	<b>1,711,620</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)
06/05/2015 *	---	3	---	---	100,439	41,944	24,416	268	---	5,373	5,291
06/06/2015 *	---	8	---	---	35,547	27,061	20,845	268	10,579	6,174	4,273
06/07/2015 *	---	4	---	---	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	---	---	---	---	16,326	13,618	4,618	164	49,461	15,023	4,384
06/13/2015 *	---	---	---	---	19,393	13,520	1,088	342	---	18,695	3,977
06/14/2015	---	---	---	---	25,415	4,948	728	355	35,924	25,362	5,760
06/15/2015 *	---	---	---	---	9,577	12,707	5,458	207	---	29,188	6,138
06/16/2015	---	---	---	---	7,204	18,275	23,960	221	37,459	34,225	14,989
06/17/2015 *	---	---	---	---	2,890	16,247	10,230	155	---	32,633	10,737
06/18/2015	---	---	---	---	6,584	21,154	3,855	188	43,117	29,333	8,653
06/19/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>310,066</b>	<b>246,886</b>	<b>148,544</b>	<b>3,557</b>	<b>216,165</b>	<b>226,969</b>	<b>85,196</b>
<b># Days:</b>	<b>0</b>	<b>3</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>5</b>	<b>0</b>	<b>0</b>	<b>22,148</b>	<b>17,635</b>	<b>10,610</b>	<b>254</b>	<b>30,881</b>	<b>16,212</b>	<b>6,085</b>
<b>YTD</b>	<b>1</b>	<b>75</b>	<b>1,292</b>	<b>2,077</b>	<b>752,469</b>	<b>463,094</b>	<b>234,760</b>	<b>10,097</b>	<b>243,264</b>	<b>278,677</b>	<b>1,615,786</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)	
06/05/2015	*	---	0	---	---	0	430	336	151	---	276	2,682
06/06/2015	*	---	0	---	---	0	0	200	158	1,024	215	1,922
06/07/2015	*	---	0	---	---	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		---	---	---	---	0	36	0	33	171	401	866
06/13/2015	*	---	---	---	---	0	36	0	25	---	433	522
06/14/2015		---	---	---	---	0	36	0	26	170	402	731
06/15/2015	*	---	---	---	---	0	36	0	33	---	125	265
06/16/2015		---	---	---	---	0	29	25	28	357	143	969
06/17/2015	*	---	---	---	---	0	30	0	16	---	152	710
06/18/2015		---	---	---	---	0	31	0	24	0	525	251
06/19/2015		---	---	---	---	---	---	---	---	---	---	---
<hr/>												
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>844</b>	<b>561</b>	<b>864</b>	<b>5,124</b>	<b>5,939</b>	<b>18,222</b>
<b># Days:</b>		<b>0</b>	<b>3</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>6</b>	<b>60</b>	<b>40</b>	<b>62</b>	<b>732</b>	<b>424</b>	<b>1,302</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>40,131</b>	<b>59,947</b>	<b>37,583</b>	<b>14,504</b>	<b>64,991</b>	<b>69,189</b>	<b>691,609</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)	
06/05/2015	*	---	92	---	---	2,038	2,079	1,091	61	---	582	3,280
06/06/2015	*	---	43	---	---	5,381	789	802	39	3,071	635	1,139
06/07/2015	*	---	63	---	---	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		---	---	---	---	618	1,112	674	27	348	57	1,083
06/13/2015	*	---	---	---	---	281	1,148	282	15	---	31	402
06/14/2015		---	---	---	---	0	287	162	17	511	0	302
06/15/2015	*	---	---	---	---	225	1,187	375	16	---	0	79
06/16/2015		---	---	---	---	147	986	376	15	719	143	143
06/17/2015	*	---	---	---	---	101	393	0	9	---	228	61
06/18/2015		---	---	---	---	79	123	51	21	1,245	0	63
06/19/2015		---	---	---	---	---	---	---	---	---	---	---
<hr/>												
<b>Total:</b>		<b>0</b>	<b>198</b>	<b>0</b>	<b>0</b>	<b>21,601</b>	<b>14,591</b>	<b>4,722</b>	<b>371</b>	<b>11,365</b>	<b>4,102</b>	<b>15,423</b>
<b># Days:</b>		<b>0</b>	<b>3</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>66</b>	<b>0</b>	<b>0</b>	<b>1,543</b>	<b>1,042</b>	<b>337</b>	<b>27</b>	<b>1,624</b>	<b>293</b>	<b>1,102</b>
<b>YTD</b>		<b>2,567</b>	<b>40,325</b>	<b>672</b>	<b>11,678</b>	<b>1,297,822</b>	<b>1,060,113</b>	<b>575,247</b>	<b>12,430</b>	<b>450,474</b>	<b>200,428</b>	<b>1,018,392</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)	
06/05/2015	*	---	0	---	---	0	0	0	6	---	352	678
06/06/2015	*	---	0	---	---	0	0	0	2	938	365	499
06/07/2015	*	---	0	---	---	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		---	---	---	---	0	0	0	3	0	172	325
06/13/2015	*	---	---	---	---	0	0	0	5	---	0	40
06/14/2015		---	---	---	---	0	0	0	1	341	0	18
06/15/2015	*	---	---	---	---	0	0	0	0	---	125	28
06/16/2015		---	---	---	---	0	0	0	0	0	143	127
06/17/2015	*	---	---	---	---	0	0	0	0	---	0	104
06/18/2015		---	---	---	---	0	0	0	1	0	190	125
06/19/2015		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2,045</b>	<b>3,087</b>	<b>4,000</b>
<b># Days:</b>		<b>0</b>	<b>3</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>6</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>292</b>	<b>221</b>	<b>286</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>3,812</b>	<b>128,863</b>	<b>103,989</b>	<b>148,816</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)	
06/05/2015	*	---	0	---	---	1	50	100	0	---	360	14
06/06/2015	*	---	0	---	---	0	100	0	1	700	408	0
06/07/2015	*	---	0	---	---	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		---	---	---	---	0	100	60	2	200	540	50
06/13/2015	*	---	---	---	---	0	375	160	1	---	1,060	10
06/14/2015		---	---	---	---	0	250	140	2	600	120	60
06/15/2015	*	---	---	---	---	1	150	10	1	---	80	0
06/16/2015		---	---	---	---	1	75	100	2	200	250	7
06/17/2015	*	---	---	---	---	0	90	100	4	---	600	50
06/18/2015		---	---	---	---	0	120	40	1	300	125	20
06/19/2015		---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>2,560</b>	<b>960</b>	<b>16</b>	<b>3,250</b>	<b>4,711</b>	<b>483</b>
<b># Days:</b>		<b>0</b>	<b>3</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>0</b>	<b>183</b>	<b>69</b>	<b>1</b>	<b>464</b>	<b>337</b>	<b>35</b>
<b>YTD</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>7,366</b>	<b>2,210</b>	<b>35</b>	<b>5,615</b>	<b>19,323</b>	<b>3,862</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:

6/19/15 8:33 AM

06/05/15 TO 06/19/15

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	186,570	500	50	13,180	50	200,350
	Sum of NumberBarged	208,615	599	50	12,224	39	221,527
	Sum of NumberBypassed	125	0	0	1,385	0	1,510
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	30	0	0	1	0	31
	Sum of FacilityMorts	392	1	0	34	7	434
	Sum of ResearchMorts	0	0	0	0	4	4
	Sum of TotalProjectMorts	422	1	0	35	11	469
<b>LGS</b>	Sum of NumberCollected	170,854	1,171	585	10,163		182,773
	Sum of NumberBarged	175,201	1,396	687	11,142		188,426
	Sum of NumberBypassed	80	0	0	0		80
	Sum of Numbertrucked	0	0	0	0		0
	Sum of SampleMorts	20	1	0	1		22
	Sum of FacilityMorts	214	3	3	14		234
	Sum of ResearchMorts	0	0	0	0		0
	Sum of TotalProjectMorts	234	4	3	15		256
<b>LMN</b>	Sum of NumberCollected	75,622	331	310	2,512		78,775
	Sum of NumberBarged	85,982	426	310	2,884		89,602
	Sum of NumberBypassed	113	0	0	0		113
	Sum of Numbertrucked	0	0	0	0		0
	Sum of SampleMorts	8	1	0	1		10
	Sum of FacilityMorts	148	0	0	10		158
	Sum of ResearchMorts	0	0	0	0		0
	Sum of TotalProjectMorts	156	1	0	11		168
Total Sum of NumberCollected		433,046	2,002	945	25,855	50	461,898
Total Sum of NumberBarged		469,798	2,421	1,047	26,250	39	499,555
Total Sum of NumberBypassed		318	0	0	1,385	0	1,703
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		58	2	0	3	0	63
Total Sum of FacilityMorts		754	4	3	58	7	826
Total Sum of ResearchMorts		0	0	0	0	4	4
Total Sum of TotalProjectMorts		812	6	3	61	11	893



### YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/19/15 8:33 AM

TO: 06/19/15

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
<b>LGR</b>	Sum of NumberCollected	487,460	1,150,028	26,150	10,860	825,554	2,500,052	
	Sum of NumberBarged	475,726	473,183	22,642	10,431	362,088	1,344,070	
	Sum of NumberBypassed	8,340	676,470	3,499	160	463,116	1,151,585	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	80	43	0	7	30	160	
	Sum of FacilityMorts	835	316	9	255	250	1,665	
	Sum of ResearchMorts	0	16	0	7	40	63	
	Sum of TotalProjectMorts	915	375	9	269	320	1,888	
<b>LGS</b>	Sum of NumberCollected	321,754	807,304	41,831	13,841	740,023	1,924,753	
	Sum of NumberBarged	307,644	545,075	40,073	13,796	526,507	1,433,095	
	Sum of NumberBypassed	123	261,966	1,720	40	213,220	477,069	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	21	21	0	2	9	53	
	Sum of FacilityMorts	234	147	18	3	208	610	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	255	168	18	5	217	663	
<b>LMN</b>	Sum of NumberCollected	129,150	642,322	22,100	6,690	322,267	1,122,529	
	Sum of NumberBarged	127,176	581,420	21,796	6,640	285,091	1,022,123	
	Sum of NumberBypassed	243	60,572	300	30	36,794	97,939	
	Sum of NumberTrucked	0	0	0	0	0	0	
	Sum of SampleMorts	11	45	2	0	37	95	
	Sum of FacilityMorts	210	315	2	20	328	875	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	221	360	4	20	365	970	
Total Sum of NumberCollected		938,364	2,599,654	90,081	31,391	1,887,844	5,547,334	
Total Sum of NumberBarged		910,546	1,599,678	84,511	30,867	1,173,686	3,799,288	
Total Sum of NumberBypassed		8,706	999,008	5,519	230	713,130	1,726,593	
Total Sum of NumberTrucked		0	0	0	0	0	0	
Total Sum of SampleMorts		112	109	2	9	76	308	
Total Sum of FacilityMorts		1,279	778	29	278	786	3,150	
Total Sum of ResearchMorts		0	16	0	7	40	63	
Total Sum of TotalProjectMorts		1,391	903	31	294	902	3,521	

**Cumulative Adult Passage at Mainstem Dams Through: 06/18**

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	06/18	220480	13314	188083	26094	132065	23978	55940	6034	44191	7849	35781	7682	0	0	0	0	0	0
TDA	06/18	194116	12307	143142	21080	101070	20309	36153	4036	30664	4843	24948	5021	0	0	0	0	0	0
JDA	06/17	166015	11514	123224	19103	88117	19021	27021	2633	25497	3494	17441	3679	0	0	0	0	0	0
MCN	06/18	156151	8767	107147	16033	79364	15788	20303	1637	20803	2945	14161	2763	0	0	0	0	0	0
IHR	06/18	116462	5745	79298	12428	55061	10384	6894	875	4441	1072	5531	1174	0	0	0	0	0	0
LMN	06/18	111511	8697	79942	14020	55282	9560	4226	731	3213	1113	4813	877	0	0	0	0	0	0
LGS	06/18	105124	8553	77966	13649	51473	10681	2529	444	2585	781	2502	553	0	0	0	0	0	0
LGR	06/18	104873	8379	79167	13732	50576	11930	548	144	944	238	717	157	0	0	0	0	0	0
PRD	06/17	27716	1570	23742	2649	15720	1631	3753	211	3062	118	2065	106	0	0	0	0	0	0
WAN	06/17	25982	1077	0	0	15431	2202	3870	108	0	0	1640	188	0	0	0	0	0	0
RIS	06/17	31749	1092	23247	2934	15126	2669	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/16	12964	589	10792	2296	5819	1126	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/17	10228	1153	8938	2207	3929	1198	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/16	49342	1937	23540	936	25694	824	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.	10-Yr		Wild 2015	Wild 2014	10-Yr Avg.	2015	2014	10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack				2015	2014							2015
BON	06/18	0	0	5	-2	0	0	76502	40988	31590	7253	9215	8614	3309	2446	2213	6680	7788	3578
TDA	06/18	0	0	0	0	0	0	49773	25734	17156	1043	1948	3427	346	505	1159	2942	244	141
JDA	06/17	0	0	0	1	0	1	32942	17364	9444	1062	4031	5814	495	1449	1931	1449	203	69
MCN	06/18	13	5	0	0	1	0	22628	12271	5822	1128	1547	5848	470	482	1854	89	14	5
IHR	06/18	0	0	0	0	0	0	24	4	4	1480	2287	5210	763	823	1537	45	9	0
LMN	06/18	0	0	0	0	0	0	16	2	0	3595	5780	6867	1884	1653	2165	8	3	0
LGS	06/18	0	0	0	0	0	0	25	0	0	1539	1785	3168	1010	1043	1453	5	0	0
LGR	06/18	0	0	0	0	0	0	17	0	0	9219	7604	8854	4357	3479	3242	0	1	0
PRD	06/17	0	0	0	0	0	0	6680	904	610	78	129	79	0	0	0	146	12	7
WAN	06/17	0	0	0	0	0	0	4366	0	271	75	0	146	0	0	0	90	0	1
RIS	06/17	0	0	0	0	0	0	2174	76	86	143	303	135	93	161	67	0	0	0
RRH	06/16	0	0	0	0	0	0	543	10	20	120	263	376	81	160	264	0	0	0
WEL	06/17	0	0	0	0	0	0	333	2	5	56	136	85	38	80	57	0	0	2
WFA	06/16	1	0	9	0	0	0	0	0	0	6602	17187	17327	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.