



## Fish Passage Center

# Weekly Report #13 - 25

September 6, 2013

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### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied over early September, ranging between 5% and 395% of average at individual sub-basins. Precipitation above The Dalles has been 121% of average over September. Over the 2013 water year, precipitation has ranged between 67% and 101% of average.

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

Location	Water Year 2013		Water Year 2013	
	September 1–4, 2013		October 1, 2012 to September 4, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.07	22	34.7	94
SNAKE RIVER above Ice Harbor	0.44	280	15.8	72
Columbia above The Dalles	0.24	121	22.3	82
Kootenai	0.06	17	38.8	101
Clark Fork	0.06	26	19.5	72
Flathead	0.01	5	33.0	93
Pend Oreille Basin	0.04	17	27.0	84
SNAKE BASIN above Hells Canyon	0.52	395	12.7	71
Salmon River Basin	0.30	145	18.8	67
Clearwater	0.10	37	32.8	82
Willamette River above Portland	0.03	10	56.0	89

Grand Coulee Reservoir drafted to 1277.4 on August 31<sup>st</sup>, 2013. The end of August target draft elevation at Grand Coulee was 1278 feet, with an additional 0.3 ft draft as part of the Lake Roosevelt Incremental Storage Release Program. Beyond the

end of August, Grand Coulee has refilled 1.2 feet. Outflows at Grand Coulee have ranged between 51.7 and 104.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2448.8 feet (9-5-13) and has drafted 0.3 feet last week. Outflows at Libby Dam have been reduced from 10.0 Kcfs to 6.0 Kcfs over the last week. The COE plans to maintain outflows of 6.0 Kcfs through September while maintaining an elevation near 2449 feet by the end of September.

Hungry Horse is currently at an elevation of 3552.9 feet (9-5-13) and has drafted 0.7 feet over the last week. Outflows at Hungry Horse have been 1.9–2.3 Kcfs last week. The end of September draft target is 3550 feet at Hungry Horse.

Dworshak is currently at an elevation of 1529.2 feet (9-5-13) and has drafted 6.1 feet last week. Outflows from Dworshak have been 7.4–7.5 Kcfs over the last week. On August 31<sup>st</sup>, 2013, Dworshak drafted to elevation 1534.3 feet, slightly below the end of August target of 1535 feet. The COE plans to draft Dworshak to elevation 1520 feet by mid-September.

The flow objective at Lower Granite over the summer period (June 21<sup>st</sup> to August 31<sup>st</sup>) was 50 Kcfs; over the summer period flows at Lower Granite averaged 29.9 Kcfs.

The flow objective at McNary over the summer period (July 1<sup>st</sup> to August 31<sup>st</sup>) was 200 Kcfs; over the summer period flows at McNary averaged 183.9 Kcfs.

Flows in both the Snake and Columbia Rivers continue to be very low, ranging between 17.4 and 22.1 Kcfs at Lower Granite over early September, and between 92.6 and 100.8 Kcfs at McNary over the same period.

**Spill**

Planned summer spill began on June 20<sup>th</sup> at the lower Snake River projects and ended at midnight on August 31<sup>st</sup>.

Project	Spill Level Day/Night
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	30%/30% vs. 45 Kcfs/Gas Cap

Spill levels at the Snake River projects were below the Court-ordered amounts in the table, due to low flows and required powerhouse minimum flows. The past week included 2 days where Court-ordered spill levels were implemented. Spill at Lower Granite Dam was different from the Court order due to repairs being made to the powerhouse roof. During these repairs, daytime spill is all flow in excess of the 5 Kcfs needed to provide station service, while nighttime spill is all flow in excess of powerhouse minimum. Present low river flows at Snake River projects have caused changes to spill operations at Little Goose, Lower Monumental, and Ice Harbor dams. At Little Goose Dam a flat spill operation of 7.5 Kcfs was initiated to maintain compatibility with Lower Granite and Lower Monumental operations. At Lower Monumental Dam a flat spill of 7.2 Kcfs was implemented. At Ice Harbor Dam spill levels were the difference between project inflows and the amount of water needed to provide minimum generation through the powerhouses.

Summer spill for fish passage at the Middle Columbia projects began on July 1<sup>st</sup>, except at McNary Dam where summer spill began on June 20<sup>th</sup> and Bonneville Dam where summer spill began on June 16<sup>th</sup>. Planned spill for fish passage ended at midnight on August 31<sup>st</sup>.

Project	Summer Spill Level Day/Night
McNary	50%/50%
John Day	July 20–August 31: 30%/30%
The Dalles	40%/40%
Bonneville	July 21–August 31: 75 Kcfs/Gas Cap

All the middle Columbia River dams met the Court-ordered summer spill levels described in the table.

There were no TDG exceedences over the past week. Due to low fish numbers, gas bubble trauma monitoring was conducted only at McNary Dam. One fish was detected with minor signs of GBT on August 30<sup>th</sup>.

**Smolt Monitoring**

Smolt monitoring is ongoing at all six SMP dams (BON, JDA, MCN, LMN, LGS, and LGR). SMP sampling at Rock Island Dam ended on August 31<sup>st</sup> and all SMP traps are out of operation for the 2013 season.

Subyearling Chinook continued to be the dominant species of salmonid at all SMP dams over the past week. Passage of subyearlings decreased this week at all Lower Columbia SMP sites while subyearling Chinook passage increased at LGR and LGS this week. Although subyearling Chinook dominated the collections, many of the SMP sites continue to collect a few spring migrants.

High temperature sampling protocols were in effect this week at BON. Under these high temperature sampling protocols, index sampling occurred every other day. All fish were bypassed on non-sample days. Passage of subyearling Chinook continued to decrease this week. This week’s daily average passage index for subyearling Chinook was about 350 per day. Last week’s daily average passage index for subyearling Chinook was about 830 per day. No other species of salmonids were collected in this week’s samples. In addition, no pacific lamprey juveniles were collected at BON this week. The high temperature sampling protocols will remain in effect until temperatures decrease to safer levels.

High temperature sampling protocols were in effect this week at JDA. Under these high temperature sampling protocols, the SMP crew at JDA samples only twice a week (for condition only). It is important to note that sampling under the higher temperature protocols at JDA results in biased collection estimates,

as sampling is not for the full 24 hours. Therefore, it is not appropriate to compare passage index estimates during this period to those from previous weeks. Subyearling Chinook dominated the bypass samples at JDA this week. In fact, no other species of salmonids were collected in this week's condition samples. In addition, no lamprey juveniles were collected at JDA this week. The high temperature sampling protocols will continue until temperatures decrease to safer levels.

Sampling at MCN for the 2013 season is every-other-day. Subyearling Chinook dominated the bypass samples at MCN this week. This week's daily average passage index for subyearling Chinook was about 750 per day. The only spring migrants that were collected in this week's samples were sockeye. Pacific lamprey macrophthalmia continue to be the only species and life-stage of lamprey collected at MCN this season. The daily average collection for pacific lamprey macrophthalmia for this week was about 40 per day.

Compared to last week, passage of subyearling Chinook at LGR increased this week. This week's daily average passage index for subyearling Chinook was about 1,050 per day. Last week's daily average passage index was about 600 per day. A very small number of yearling Chinook and steelhead were collected at LGR this week. Finally, two pacific lamprey macrophthalmia were collected at LGR this week. Due to the possible resampling of PIT-tagged research fish that were released into the gatewells, the estimated year-to-date collection and passage index totals for yearling Chinook, steelhead, subyearling Chinook, and Pacific lamprey macrophthalmia are likely inflated. The FPC is aware of this possible bias and is investigating ways to correct these inflated estimates after the season has ended. However, the magnitude of this bias is relatively low and is unlikely to skew estimates of timing for this species.

Subyearling Chinook passage also increased at LGS this week, when compared to last week. This week's daily average passage index for subyearling Chinook at LGS was about 870 per day. Last week's daily average passage index was about 620 per day. Sockeye and steelhead were the only other species of salmonids that were collected at LGS this

week. Finally, only pacific lamprey macrophthalmia were collected at LGS this week. The daily average collection for pacific macrophthalmia this week was six per day.

Due to high levels of Columnaris and elevated levels of mortality, the juvenile bypass system at LMN was switched to primary bypass on the afternoon of August 30<sup>th</sup>. The plan was to remain in primary bypass, except for a brief sampling period for condition monitoring every third day. However, at the September 4<sup>th</sup> TMT, it was decided that full index sampling would occur every-other-day, with primary bypass on the non-sample days. All fish collected during the full index sampling would be trucked. Due to the different levels of sampling throughout this week, it is not possible to compare passage indices for this week to previous weeks. However, samples from this week were dominated by subyearling Chinook. No other species of salmonids were collected at LMN this week. Based on the limited condition samples that were conducted this week, it appears that Columnaris levels at LMN have decreased, compared to last week. Columnaris levels have been in the 0%–2% range over the last two condition samples (Sept. 2 and Sept. 5). Mortality levels also seem to have decreased this week, when compared to last week. However, it is important to note that these decreases are based on limited sampling efforts. Among lamprey species, only pacific lamprey macrophthalmia were collected this week, but in very low numbers.

The August 31<sup>st</sup> sample was the last SMP sample from Rock Island Dam for the 2013 season.

### **Hatchery Release**

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. There were no new releases of juvenile salmonids scheduled for this zone this week. In addition, there are no new releases scheduled for this zone 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 of juvenile salmonids were scheduled to begin in this zone this week. There are also no releases of juvenile salmonids in this zone over the next two weeks.

**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 of juvenile salmonids were scheduled for this zone this week. Furthermore, there are no new releases to this zone scheduled over the next two weeks.

### Adult Fish Passage

Daily adult fall Chinook passage numbers at Bonneville Dam ranged between 12,593 and 33,819 last week. The adult fall Chinook count of 294,036 is about 2.2 times greater than the 2012 count of 130,323 and about 2 times greater than the 10-year average count of 145,340. The 2013 Bonneville Dam fall Chinook jack count of 36,681 is about 1.3 times greater than the 2012 count of 28,882 and about 2 times greater than the 10-year average count of 18,240. The 2013 McNary Dam adult fall Chinook count of 53,871 is about 1.6 times greater than the 2012 count and 2.3 times larger than the 10-year average. The 2013 McNary Dam jack count of 8,906 is about 1.6 times greater than the 2012 count and 2 times greater than the 10-year average count.

During this time of year, there are times when there are higher steelhead counts at upstream projects compared to downstream projects. The higher counts of steelhead at upstream sites compared to downstream sites in any particular year is because some steelhead spend the winter between sites (e.g., between Ice Harbor and Lower Granite) and then resume their migration upstream the following year. Daily steelhead counts at Bonneville Dam ranged from 1,030 to 2,051. The 2013 Bonneville Dam adult steelhead count of 191,332 is about 1.03 times greater than the 2012 count of 184,897, while being about 67% of the 10-year average count of 285,764. The 2013 Bonneville Dam adult wild steelhead count of 86,241 is about 1.2 times greater than the 2012 count of 70,754, while having 7,535 fewer

fish than the 10-year average count of 93,776. In the Snake River, this year's Lower Granite steelhead count of 13,218 has 616 fewer fish than the 2012 count and is about 51% of the 10-year average count of 25,929. The 2013 Lower Granite Dam adult wild steelhead count of 6,291 has 233 more fish than the 2012 count, while being 72.4% of the 10-year average count of 8,693. At Willamette Falls, the 2013 count for steelhead was 17,425 as of August 29th. This year's steelhead count is about 55.8% of the 2012 count of 31,201 and about 68% of the 10-year average count of 25,630.

The 2013 adult sockeye count at Bonneville Dam of 185,503 is about 36% of the 2012 count of 515,670, while being 1.04 times greater than the 10-year average count of 177,593. Two of the major spawning sites for sockeye in the Upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). The 2013 McNary Dam adult sockeye count of 134,187 is about 36.8% of the 2012 count of 364,136, while being 1.07 times greater than the 10-year average count of 125,774. The Lower Granite Dam 2013 adult sockeye count of 738 is about 1.6 times greater than the 2012 count of 459 and about 1.2 times greater than the 10-year average count of 613.

The 2013 Bonneville Dam adult coho count of 6,800 is about 40.7% of the 2012 count of 16,672 and about 24% of the 10-year average count of 27,975. The 2013 Bonneville Dam coho jack count of 1,010 has 85 fewer fish than the 2012 count of 1,095 and has 426 fewer fish than the 10-year average count of 1,436.

### Hatchery Releases Last Two Weeks

#### Hatchery Release Summary

From: 8/23/2013 to 09/05/13

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
No Releases Scheduled									

### Hatchery Releases Next Two Weeks

#### Hatchery Release Summary

From: 9/6/2013 to 9/19/2013

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
No Releases Scheduled									

**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
08/23/2013	97.0	0.1	96.8	0.0	79.8	0.0	77.6	0.0	82.9	1.9	109.6	1.4	111.3	12.1
08/24/2013	89.7	0.1	91.3	0.0	90.7	0.0	91.6	0.0	94.9	0.0	96.4	1.1	90.3	6.1
08/25/2013	100.5	0.0	98.6	0.0	100.4	0.0	100.3	0.0	104.4	0.0	102.1	1.5	93.5	6.7
08/26/2013	104.2	0.1	103.6	0.0	105.9	0.0	110.0	0.0	112.4	0.0	114.2	1.6	107.7	7.1
08/27/2013	109.1	0.1	111.2	0.0	106.8	0.0	108.0	0.0	109.0	0.0	110.3	1.7	105.7	6.4
08/28/2013	102.2	0.2	112.6	0.0	106.7	0.0	106.2	0.0	107.9	0.0	112.5	1.9	109.2	7.7
08/29/2013	107.7	0.1	106.0	0.0	104.6	0.0	107.4	0.0	108.9	0.0	117.7	2.0	112.9	4.5
08/30/2013	104.7	0.1	103.7	0.0	105.0	0.0	109.1	0.0	113.9	0.0	118.5	2.1	114.7	7.9
08/31/2013	90.5	0.1	89.1	0.0	91.2	0.0	98.9	0.0	103.6	0.0	108.8	2.1	106.7	7.8
09/01/2013	51.7	0.2	51.3	0.0	56.6	0.0	58.6	0.0	63.4	0.0	88.4	1.9	88.3	7.6
09/02/2013	54.6	0.1	61.0	0.0	62.0	0.0	55.9	0.0	56.4	0.0	61.1	1.6	61.4	7.1
09/03/2013	80.0	0.1	78.1	0.0	78.5	0.0	79.1	0.0	83.6	0.0	85.7	1.7	81.5	7.2
09/04/2013	78.6	0.1	81.0	0.0	80.5	0.0	80.5	0.0	82.4	0.0	82.0	1.6	76.9	7.4
09/05/2013	75.6	0.2	67.5	0.0	68.5	0.0	70.8	0.0	73.8	0.0	78.4	1.7	76.3	7.4

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/23/2013	7.4	0.0	---	---	17.9	8.7	19.8	7.5	19.9	9.5	20.6	10.6
08/24/2013	8.6	0.0	---	---	20.4	7.7	19.8	7.5	21.7	6.6	20.1	10.1
08/25/2013	8.6	0.0	---	---	22.8	9.9	20.9	8.7	21.7	6.7	20.1	10.1
08/26/2013	8.6	0.0	---	---	21.0	12.5	21.6	9.4	22.5	9.3	20.5	10.6
08/27/2013	7.5	0.0	---	---	21.8	12.2	21.9	8.3	22.5	10.0	23.5	13.5
08/28/2013	7.5	0.0	---	---	22.1	12.7	21.6	7.5	22.3	10.0	23.9	13.9
08/29/2013	7.5	0.0	---	---	21.3	11.5	21.0	7.5	19.9	7.3	19.7	9.6
08/30/2013	7.5	0.0	---	---	21.8	12.3	20.1	7.5	19.6	7.2	18.2	8.2
08/31/2013	7.5	0.0	---	---	21.6	12.2	20.6	7.5	19.5	7.2	21.9	11.9
09/01/2013	7.5	0.0	---	---	22.1	0.0	12.8	0.0	12.3	0.0	10.1	0.0
09/02/2013	7.6	0.0	---	---	22.6	0.0	17.1	0.0	13.4	0.0	10.8	0.0
09/03/2013	7.6	0.0	---	---	20.8	7.2	19.6	0.0	20.2	0.0	17.3	0.0
09/04/2013	7.6	0.0	---	---	17.4	5.5	17.3	0.0	18.5	0.0	18.1	0.0
09/05/2013	7.6	0.0	---	---	20.0	3.0	20.4	0.0	20.7	0.0	21.3	0.0

**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		
08/23/2013	145.6	72.9	134.8	40.9	125.2	50.3	139.4	91.2	0.0	35.7
08/24/2013	125.9	63.1	130.2	39.1	117.6	47.3	130.1	84.4	0.0	33.2
08/25/2013	129.4	64.7	110.4	33.0	99.9	39.8	119.8	75.5	0.0	31.9
08/26/2013	141.0	70.5	134.1	40.1	122.8	49.3	122.7	79.2	0.0	31.0
08/27/2013	124.9	62.8	121.7	36.6	113.7	45.6	129.6	85.9	0.0	31.2
08/28/2013	145.1	72.7	132.8	39.7	119.9	48.1	131.1	87.6	0.0	31.1
08/29/2013	140.7	70.5	132.6	39.7	122.8	49.5	137.3	91.3	0.0	33.6
08/30/2013	133.1	66.3	131.4	39.3	125.8	50.2	138.4	91.4	0.0	34.6
08/31/2013	141.3	70.9	130.9	39.2	122.1	48.8	140.2	90.9	0.0	37.0
09/01/2013	100.3	0.0	98.6	0.9	97.4	0.0	105.6	1.6	15.0	81.6
09/02/2013	92.6	0.0	88.8	0.9	87.1	0.0	100.3	1.3	16.7	74.9
09/03/2013	83.6	0.0	90.6	1.0	92.6	0.0	100.3	1.3	16.4	75.2
09/04/2013	98.6	0.0	92.4	0.8	93.3	0.0	102.1	1.4	17.1	77.3
09/05/2013	100.8	0.0	94.2	0.7	91.4	0.0	96.9	1.4	7.3	81.9

## 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>											
<b>Lower Monumental Dam</b>											
<b>McNary Dam</b>											
	08/28/13	Chinook + Steelhead	55	0	0	0.00%	0.00%	0	0	0	0
	08/30/13	Chinook + Steelhead	51	1	1	1.96%	0.00%	1	0	0	0
<b>Bonneville Dam</b>											
	08/24/13	Chinook + Steelhead	9	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											

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

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

Date	Hungry H. Dnst			Boundary			Grand Coulee			Grand C. Tlwr			Chief Joseph							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/23	105.9	106.1	106.3	24	---	---	---	0	106.1	106.3	106.5	24	105.8	106.1	106.3	24	106.7	107.0	107.4	24
8/24	105.6	106.1	106.5	24	---	---	---	0	106.3	106.4	106.7	24	105.7	106.0	106.3	24	106.5	106.7	107.1	24
8/25	105.7	106.2	106.6	24	---	---	---	0	105.6	106.0	106.5	24	105.3	105.7	105.9	24	105.9	106.1	106.3	24
8/26	104.3	104.9	105.6	24	---	---	---	0	104.7	105.3	105.7	24	104.8	105.1	105.5	24	105.6	105.7	106.0	24
8/27	104.8	105.1	105.1	24	---	---	---	0	104.3	104.6	105.1	24	104.8	105.4	105.7	24	105.4	105.8	106.0	24
8/28	104.9	105.4	106.0	24	---	---	---	0	104.6	105.4	105.9	24	105.3	106.1	108.2	24	105.3	105.5	105.8	24
8/29	105.0	105.7	106.7	24	---	---	---	0	104.9	105.0	105.4	24	104.0	104.2	104.4	24	104.8	104.9	105.1	24
8/30	105.2	105.2	105.4	8	---	---	---	0	104.4	104.6	104.8	24	103.6	104.0	104.2	24	104.4	104.6	104.8	24
8/31	---	---	---	0	---	---	---	0	104.2	104.4	104.8	24	103.1	104.0	104.5	24	104.3	104.7	105.0	24
9/1	---	---	---	0	---	---	---	0	105.0	105.3	105.6	24	103.7	104.0	104.3	24	105.0	105.6	106.2	24
9/2	---	---	---	0	---	---	---	0	104.4	104.6	104.8	24	104.0	104.3	104.5	24	105.1	105.5	106.0	24
9/3	---	---	---	0	---	---	---	0	103.9	104.0	104.1	24	104.2	104.8	105.1	24	104.9	105.1	105.4	24
9/4	---	---	---	0	---	---	---	0	103.9	104.0	104.3	24	103.5	103.9	104.2	24	105.1	105.4	105.7	24
9/5	---	---	---	0	---	---	---	0	103.8	104.0	104.4	23	103.8	104.2	104.5	23	105.7	106.5	106.8	23

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

Date	Chief J. Dnst			Wells			Wells Dwnstrm			Rocky Reach			Rocky R. Tlwr							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/23	107.0	107.5	108.1	24	107.2	107.6	108.5	18	107.9	108.6	110.1	18	106.9	107.0	107.2	24	105.9	106.2	106.4	24
8/24	106.6	107.1	107.8	24	106.6	106.8	107.8	18	106.7	107.0	108.1	18	106.7	106.9	107.2	24	105.7	106.2	106.4	24
8/25	106.2	106.6	107.3	24	106.2	106.6	107.3	22	106.4	106.8	107.7	22	106.4	106.5	106.8	24	105.4	105.7	106.0	24
8/26	106.2	106.9	107.7	24	105.4	105.7	106.3	22	105.7	106.1	106.9	22	105.7	105.9	106.2	24	104.8	105.1	105.3	24
8/27	105.8	106.2	106.5	24	105.5	106.0	106.6	20	105.7	106.4	107.0	20	105.6	105.9	106.0	24	104.9	105.3	105.4	24
8/28	105.5	106.0	106.6	24	105.9	106.3	107.0	19	106.0	106.5	107.4	19	105.7	105.7	105.8	24	104.8	105.1	105.2	24
8/29	105.1	105.5	106.2	24	105.2	105.4	105.9	16	105.4	105.6	106.2	16	105.1	105.3	105.4	24	103.9	104.5	104.7	24
8/30	104.8	105.4	105.8	24	104.4	104.6	105.2	17	104.5	104.8	105.4	17	104.8	104.9	105.0	24	104.0	104.2	104.3	24
8/31	105.1	105.3	105.6	24	104.7	105.1	106.4	16	104.6	105.0	106.7	16	104.7	105.0	105.1	24	103.9	104.3	104.5	24
9/1	105.9	106.5	107.1	24	105.8	106.5	108.4	19	105.4	106.0	107.4	19	105.1	105.6	106.0	24	103.6	104.3	105.2	24
9/2	105.8	106.5	107.3	24	106.2	106.3	107.1	14	106.0	106.2	107.3	14	105.1	105.4	105.9	24	103.3	103.9	104.6	24
9/3	105.2	105.7	106.3	24	105.8	106.1	107.0	17	105.7	106.1	107.5	17	105.1	105.3	105.6	24	104.0	104.4	104.6	24
9/4	105.8	106.1	106.7	24	105.5	105.6	106.1	18	105.3	105.6	106.4	18	104.9	105.3	105.6	24	103.8	104.6	105.0	24
9/5	106.5	107.2	107.9	23	105.5	105.8	106.3	20	105.3	105.8	106.3	20	105.1	105.3	105.7	23	103.9	104.5	105.0	23

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

Date	Rock Island			Rock I. Tlwr			Wanapum			Wanapum Tlwr			Priest Rapids							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
8/23	105.7	106.0	106.4	24	105.9	106.3	106.5	24	106.6	107.2	108.2	24	107.0	107.3	107.5	24	106.4	107.2	108.1	24
8/24	105.8	105.9	106.1	24	106.1	106.2	106.4	24	105.2	105.8	106.4	24	106.0	106.3	106.9	24	104.5	105.1	105.6	24
8/25	105.3	105.6	106.1	24	105.7	105.9	106.2	24	105.2	106.1	107.0	24	105.4	105.6	106.0	24	103.3	104.0	104.3	24
8/26	105.0	105.1	105.4	24	105.2	105.4	105.8	24	104.1	104.3	104.9	24	104.8	105.0	105.2	24	103.8	104.2	105.0	24
8/27	104.8	105.2	105.7	24	105.2	105.6	105.9	24	104.7	105.7	106.2	24	104.9	105.5	105.7	24	104.1	104.6	104.8	24
8/28	104.9	105.3	105.4	24	105.2	105.6	105.8	24	105.6	106.0	106.2	24	105.4	105.6	105.8	24	104.2	104.4	104.7	24
8/29	104.3	104.6	105.1	24	104.6	104.9	105.2	24	105.6	105.8	105.9	24	105.3	105.4	105.5	24	104.1	104.4	104.7	24
8/30	104.0	104.4	104.8	24	104.3	104.8	105.1	24	104.1	104.5	105.2	24	104.7	104.8	105.0	24	103.6	104.1	104.7	24
8/31	104.1	104.6	105.1	24	104.5	105.0	105.5	24	104.1	105.3	106.3	24	104.6	104.9	105.1	24	103.8	104.3	104.8	24
9/1	104.5	104.7	105.0	24	104.9	105.1	105.4	24	104.1	106.4	107.5	24	104.9	105.5	105.8	24	103.8	104.7	105.4	24
9/2	104.5	104.8	105.0	24	104.8	105.1	105.7	24	102.4	104.1	104.9	24	104.4	104.8	105.4	24	102.9	103.9	104.5	24
9/3	104.1	104.3	104.4	24	104.5	104.7	104.7	24	---	---	---	0	---	---	---	0	---	---	---	0
9/4	104.2	104.6	105.2	24	104.7	105.0	105.6	24	---	---	---	0	---	---	---	0	---	---	---	0
9/5	104.6	104.8	105.2	23	105.0	105.2	105.5	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 River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/23	107.8	108.0	108.6	24	114.8	115.6	116.1	24	105.8	106.0	106.5	24	113.2	113.5	113.8	24	108.3	108.9	109.2	24
8/24	107.4	107.5	107.7	24	113.9	114.5	115.0	24	104.9	105.1	105.3	24	112.7	113.1	113.7	24	106.3	106.5	106.8	24
8/25	106.7	107.1	107.2	24	114.1	114.9	115.6	24	104.2	104.4	104.8	24	112.3	112.7	113.0	24	105.8	106.1	106.4	24
8/26	105.3	105.5	105.6	24	114.5	114.8	115.2	24	104.1	104.5	104.8	24	113.4	114.4	114.9	24	106.3	107.1	107.4	24
8/27	105.7	106.3	106.7	24	114.1	115.2	115.7	24	104.2	104.7	105.0	24	113.3	113.9	114.5	24	108.3	108.9	109.3	24
8/28	105.5	105.9	106.6	24	114.1	115.0	115.5	24	104.4	104.5	104.7	24	113.9	114.3	114.7	24	108.2	108.8	109.3	24
8/29	104.2	104.5	105.1	24	113.9	115.0	115.6	24	104.1	104.3	104.4	24	114.0	114.9	115.4	24	107.4	107.6	107.8	24
8/30	104.1	104.4	104.7	24	114.4	115.2	115.5	24	103.5	103.8	104.0	24	114.5	114.9	115.6	24	106.3	106.6	106.7	24
8/31	105.4	105.8	106.5	23	114.0	114.5	115.3	23	104.4	105.2	105.7	23	114.8	115.2	115.5	23	107.4	108.1	108.4	23
9/1	105.1	105.3	105.8	24	105.1	106.0	111.3	24	107.1	107.7	108.4	24	106.5	107.0	110.5	24	108.6	109.1	109.6	24
9/2	104.9	105.2	105.5	24	104.0	104.4	104.8	24	105.0	105.2	105.5	24	105.3	105.7	106.0	24	106.5	107.2	108.1	24
9/3	104.2	104.3	104.5	24	103.7	104.1	104.5	24	105.0	105.4	105.6	24	105.5	105.8	106.4	24	102.7	103.1	104.2	24
9/4	104.5	105.1	105.9	24	104.5	105.4	105.9	24	105.5	105.9	106.4	24	105.9	106.2	106.4	24	102.3	102.7	102.9	24
9/5	105.8	106.4	107.7	23	105.2	105.4	105.9	23	105.5	105.8	106.0	23	105.4	105.8	106.4	23	102.8	103.1	103.8	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>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
8/23	112.0	112.5	112.7	24	109.2	109.8	110.4	24	116.7	117.6	119.0	24	113.0	114.4	115.2	24	116.6	118.6	120.6	24
8/24	110.3	110.6	111.0	24	107.4	107.7	108.1	24	116.5	117.3	118.6	24	113.7	114.8	115.6	24	115.5	116.6	119.7	24
8/25	108.9	109.3	109.8	24	106.5	106.7	107.1	24	115.7	116.0	116.5	24	112.6	113.3	114.5	24	114.5	114.5	114.6	24
8/26	109.3	110.0	110.5	24	106.3	106.5	106.6	24	115.8	116.3	116.9	24	113.1	113.7	113.8	24	115.1	115.8	119.1	24
8/27	110.3	110.7	111.6	24	107.0	107.6	107.8	24	116.9	117.3	118.0	24	113.6	114.9	115.7	24	115.8	117.7	119.7	24
8/28	110.5	110.7	111.0	24	108.0	108.5	108.7	24	117.0	117.3	118.0	24	114.8	116.0	116.6	24	115.8	117.7	119.7	24
8/29	110.5	110.8	111.1	24	108.0	108.3	108.7	24	117.4	118.1	118.9	24	114.7	115.6	116.0	24	116.0	117.2	119.4	22
8/30	109.7	110.2	110.8	24	107.4	107.8	107.9	24	117.4	117.9	118.6	24	114.6	116.0	116.8	24	---	---	---	0
8/31	110.8	111.7	112.9	23	107.9	108.1	108.5	23	117.5	118.0	118.9	23	115.0	116.0	116.8	23	---	---	---	0
9/1	107.1	108.2	110.7	24	108.4	109.0	109.3	24	110.9	112.7	118.2	24	114.1	114.9	116.0	24	---	---	---	0
9/2	103.7	104.2	104.8	24	107.8	108.3	108.5	24	108.6	109.2	109.8	24	108.7	109.3	111.1	24	---	---	---	0
9/3	100.9	101.6	101.9	24	106.2	106.5	106.7	24	106.5	106.9	107.1	23	107.1	107.5	108.0	24	---	---	---	0
9/4	99.7	100.3	101.2	24	104.4	105.1	105.4	24	104.6	104.8	105.2	24	105.2	105.7	106.7	24	---	---	---	0
9/5	101.9	103.6	105.0	23	102.2	102.5	103.0	23	102.4	102.8	103.8	23	123.5	141.6	156.3	23	---	---	---	0

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 9/6/2013 7:43

### Two-Week Summary of Passage Indices

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

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

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

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

<b>COMBINED YEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/23/2013	*	---	---	---	---	0	0	0	0	0	0
08/24/2013	*	---	---	---	---	0	0	0	0	---	---
08/25/2013	*	---	---	---	---	0	0	0	0	---	0
08/26/2013	*	---	---	---	---	0	0	0	0	---	---
08/27/2013	*	---	---	---	---	0	0	0	0	---	0
08/28/2013	*	---	---	---	---	0	0	0	0	---	---
08/29/2013	*	---	---	---	---	0	0	0	0	---	0
08/30/2013	*	---	---	---	---	0	0	0	0	0	---
08/31/2013	*	---	---	---	---	0	0	---	0	---	0
09/01/2013	*	---	---	---	---	0	0	---	---	---	---
09/02/2013	*	---	---	---	---	2	0	0	---	0	0
09/03/2013	*	---	---	---	---	3	0	---	---	0	---
09/04/2013	*	---	---	---	---	6	0	---	0	---	0
09/05/2013	*	---	---	---	---	0	0	0	---	---	---
09/06/2013		---	---	---	---	---	---	---	---	---	---
<hr/>											
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>		<b>50,632</b>	<b>55,648</b>	<b>26,301</b>	<b>2,797</b>	<b>2,607,100</b>	<b>1,498,294</b>	<b>614,254</b>	<b>28,315</b>	<b>2,123,325</b>	<b>2,056,882</b>
										<b>1,881,678</b>	

<b>COMBINED SUBYEARLING CHINOOK</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
08/23/2013	*	---	---	---	---	426	559	778	32	4,222	202	1,631
08/24/2013	*	---	---	---	---	607	505	533	21	---	---	---
08/25/2013	*	---	---	---	---	469	330	189	23	---	---	664
08/26/2013	*	---	---	---	---	564	652	372	15	---	---	---
08/27/2013	*	---	---	---	---	686	834	375	15	---	46	447
08/28/2013	*	---	---	---	---	552	647	942	10	---	---	---
08/29/2013	*	---	---	---	---	829	832	742	11	1,152	---	574
08/30/2013	*	---	---	---	---	1,030	933	439	18	---	11	---
08/31/2013	*	---	---	---	---	1,094	648	---	10	1,286	---	468
09/01/2013	*	---	---	---	---	694	256	---	---	---	---	---
09/02/2013	*	---	---	---	---	544	271	15	---	420	---	394
09/03/2013	*	---	---	---	---	1,068	612	---	---	---	44	---
09/04/2013	*	---	---	---	---	1,489	1,684	---	---	528	---	195
09/05/2013	*	---	---	---	---	1,439	1,674	51	---	---	---	---
09/06/2013		---	---	---	---	---	---	---	---	---	---	---
<hr/>												
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11,491</b>	<b>10,437</b>	<b>4,436</b>	<b>155</b>	<b>7,608</b>	<b>303</b>	<b>4,373</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>7</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>821</b>	<b>746</b>	<b>444</b>	<b>17</b>	<b>1,522</b>	<b>76</b>	<b>625</b>
<b>YTD</b>		<b>2</b>	<b>61</b>	<b>195</b>	<b>2,668</b>	<b>714,975</b>	<b>630,089</b>	<b>272,397</b>	<b>18,794</b>	<b>3,694,482</b>	<b>2,426,977</b>	<b>4,859,463</b>

## Two-Week Summary of Passage Indices

<b>COMBINED COHO</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/23/2013 *	---	---	---	---	0	0	0	0	0	0	0
08/24/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/25/2013 *	---	---	---	---	0	0	0	0	---	---	0
08/26/2013 *	---	---	---	---	2	0	0	0	---	---	---
08/27/2013 *	---	---	---	---	0	0	0	0	---	0	0
08/28/2013 *	---	---	---	---	0	0	0	0	---	---	---
08/29/2013 *	---	---	---	---	0	0	0	0	0	---	0
08/30/2013 *	---	---	---	---	0	0	0	0	---	0	---
08/31/2013 *	---	---	---	---	0	0	---	0	0	---	0
09/01/2013 *	---	---	---	---	0	0	---	---	---	---	---
09/02/2013 *	---	---	---	---	0	0	0	---	0	---	0
09/03/2013 *	---	---	---	---	0	0	---	---	---	0	---
09/04/2013 *	---	---	---	---	0	0	---	---	0	---	0
09/05/2013 *	---	---	---	---	0	0	0	---	---	---	---
09/06/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>7</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>61,826</b>	<b>54,077</b>	<b>10,584</b>	<b>49,973</b>	<b>85,380</b>	<b>188,509</b>	<b>770,840</b>

<b>COMBINED STEELHEAD</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>††</sup> (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
08/23/2013 *	---	---	---	---	0	2	0	1	0	0	0
08/24/2013 *	---	---	---	---	0	2	0	0	---	---	---
08/25/2013 *	---	---	---	---	0	2	0	0	---	---	0
08/26/2013 *	---	---	---	---	0	0	1	0	---	---	---
08/27/2013 *	---	---	---	---	0	0	0	0	---	0	0
08/28/2013 *	---	---	---	---	0	3	2	1	---	---	---
08/29/2013 *	---	---	---	---	0	3	2	0	0	---	0
08/30/2013 *	---	---	---	---	2	0	0	0	---	0	---
08/31/2013 *	---	---	---	---	2	0	---	0	0	---	0
09/01/2013 *	---	---	---	---	0	0	---	---	---	---	---
09/02/2013 *	---	---	---	---	0	0	0	---	0	---	0
09/03/2013 *	---	---	---	---	1	0	---	---	---	0	---
09/04/2013 *	---	---	---	---	0	1	---	---	0	---	0
09/05/2013 *	---	---	---	---	0	0	0	---	---	---	---
09/06/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>7</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>	<b>3,789</b>	<b>40,840</b>	<b>3,547</b>	<b>9,925</b>	<b>2,037,016</b>	<b>1,713,531</b>	<b>610,906</b>	<b>14,984</b>	<b>471,593</b>	<b>732,388</b>	<b>470,306</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)
08/23/2013 *	---	---	---	---	0	2	0	0	0	0	0
08/24/2013 *	---	---	---	---	2	0	0	1	---	---	---
08/25/2013 *	---	---	---	---	2	0	0	1	---	---	0
08/26/2013 *	---	---	---	---	2	0	0	0	---	---	---
08/27/2013 *	---	---	---	---	0	2	0	4	---	0	16
08/28/2013 *	---	---	---	---	2	0	0	0	---	---	---
08/29/2013 *	---	---	---	---	2	0	0	0	21	---	0
08/30/2013 *	---	---	---	---	0	2	0	0	---	0	---
08/31/2013 *	---	---	---	---	0	0	---	1	0	---	0
09/01/2013 *	---	---	---	---	0	0	---	---	---	---	---
09/02/2013 *	---	---	---	---	0	0	0	---	20	---	0
09/03/2013 *	---	---	---	---	0	0	---	---	---	0	---
09/04/2013 *	---	---	---	---	0	1	---	---	4	---	0
09/05/2013 *	---	---	---	---	0	0	0	---	---	---	---
09/06/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>45</b>	<b>0</b>	<b>16</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>7</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>2</b>
<b>YTD</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>326</b>	<b>54,700</b>	<b>33,012</b>	<b>11,379</b>	<b>25,107</b>	<b>633,818</b>	<b>414,310</b>	<b>396,143</b>

<b>COMBINED LAMPREY JUVENILES</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/23/2013 *	---	---	---	---	0	10	0	1	1,220	5	0
08/24/2013 *	---	---	---	---	2	7	0	1	---	---	---
08/25/2013 *	---	---	---	---	0	12	2	2	---	---	0
08/26/2013 *	---	---	---	---	0	1	2	0	---	---	---
08/27/2013 *	---	---	---	---	0	9	0	0	---	4	0
08/28/2013 *	---	---	---	---	1	1	1	0	---	---	---
08/29/2013 *	---	---	---	---	1	10	0	1	430	---	0
08/30/2013 *	---	---	---	---	0	4	1	0	---	0	---
08/31/2013 *	---	---	---	---	0	11	---	1	60	---	0
09/01/2013 *	---	---	---	---	0	7	---	---	---	---	---
09/02/2013 *	---	---	---	---	1	2	0	---	40	---	0
09/03/2013 *	---	---	---	---	0	1	---	---	---	0	---
09/04/2013 *	---	---	---	---	1	4	---	---	8	---	0
09/05/2013 *	---	---	---	---	0	12	1	---	---	---	---
09/06/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>91</b>	<b>7</b>	<b>6</b>	<b>1,758</b>	<b>9</b>	<b>0</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>7</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>352</b>	<b>2</b>	<b>0</b>
<b>YTD</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4,971</b>	<b>55,304</b>	<b>63,715</b>	<b>185</b>	<b>86,418</b>	<b>173,701</b>	<b>6,179</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:

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.

†† Passage index for yearling Chinook, steelhead, and subyearling Chinook at LGR may be inflated in 2013 due to possible resampling of PIT-tagged research fish

† Caution should be used with interpreting lamprey juvenile collection counts at LGR because of the possibility that lamprey may escape the sample tank before being sampled

### 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:

9/6/13 7:41 AM

**08/23/13 TO 09/06/13**

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	6,774	9	1	3	5	6,792
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	4	0	0	0	0	4
	Sum of Numbertrucked	6,705	8	1	3	4	6,721
	Sum of SampleMorts	64	1	0	0	1	66
	Sum of FacilityMorts	1	0	0	0	0	1
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	65	1	0	0	1	67
<b>LGS</b>	Sum of NumberCollected	8,007			8	4	8,019
	Sum of NumberBarged	0			0	0	0
	Sum of NumberBypassed	4			0	1	5
	Sum of Numbertrucked	7,931			6	2	7,939
	Sum of SampleMorts	55			1	1	57
	Sum of FacilityMorts	17			1	0	18
	Sum of ResearchMorts	0			0	0	0
	Sum of TotalProjectMorts	72			2	1	75
<b>LMN</b>	Sum of NumberCollected	2,475			3		2,478
	Sum of NumberBarged	0			0		0
	Sum of NumberBypassed	15			2		17
	Sum of Numbertrucked	2,143			1		2,144
	Sum of SampleMorts	316			0		316
	Sum of FacilityMorts	1			0		1
	Sum of ResearchMorts	0			0		0
	Sum of TotalProjectMorts	317			0		317
<b>MCN</b>	Sum of NumberCollected	4,164				34	4,198
	Sum of NumberBarged	0				0	0
	Sum of NumberBypassed	4,154				34	4,188
	Sum of Numbertrucked	0				0	0
	Sum of SampleMorts	5				0	5
	Sum of FacilityMorts	5				0	5
	Sum of ResearchMorts	0				0	0
	Sum of TotalProjectMorts	10				0	10
Total Sum of NumberCollected		21,420	9	1	14	43	21,487
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		4,177	0	0	2	35	4,214
Total Sum of Numbertrucked		16,779	8	1	10	6	16,804
Total Sum of SampleMorts		440	1	0	1	2	444
Total Sum of FacilityMorts		24	0	0	1	0	25
Total Sum of ResearchMorts		0	0	0	0	0	0
Total Sum of TotalProjectMorts		464	1	0	2	2	469

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/6/13 7:41 AM

TO: 09/06/13

		Species						
Site	Data	CH0	CH1	CO	SO	ST	LU	Grand Total
<b>LGR</b>	Sum of NumberCollected	461,003	1,865,138	48,077	42,654	1,444,853		3,861,725
	Sum of NumberBarged	437,793	1,554,582	47,807	42,574	1,087,929		3,170,685
	Sum of NumberBypassed	13,697	308,258	210	52	356,574		678,791
	Sum of NumberTrucked	8,548	8	1	8	3		8,568
	Sum of SampleMorts	584	174	2	5	40		805
	Sum of FacilityMorts	343	2,066	57	15	259		2,740
	Sum of ResearchMorts	38	52	0	0	47		137
	Sum of TotalProjectMorts	965	2,292	59	20	346		3,682
<b>LGS</b>	Sum of NumberCollected	437,505	1,026,511	36,885	22,620	1,174,689		2,698,210
	Sum of NumberBarged	426,163	979,239	36,685	22,607	1,108,345		2,573,039
	Sum of NumberBypassed	255	46,698	200	2	66,202		113,357
	Sum of NumberTrucked	10,510	0	0	5	8		10,523
	Sum of SampleMorts	191	14	0	2	10		217
	Sum of FacilityMorts	386	560	0	4	124		1,074
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	577	574	0	6	134		1,291
<b>LMN</b>	Sum of NumberCollected	168,904	470,897	8,000	8,064	459,577	1	1,115,443
	Sum of NumberBarged	151,939	469,284	7,999	8,058	458,179	0	1,095,459
	Sum of NumberBypassed	13,438	1,079	0	2	1,144	136	15,799
	Sum of NumberTrucked	2,221	0	0	0	1	0	2,222
	Sum of SampleMorts	425	16	0	0	18	0	459
	Sum of FacilityMorts	362	518	1	4	235	0	1,120
	Sum of ResearchMorts	0	0	0	0	0	0	0
	Sum of TotalProjectMorts	787	534	1	4	253	0	1,579
<b>MCN</b>	Sum of NumberCollected	1,776,415	1,098,880	43,803	314,601	255,352		3,489,051
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	1,775,858	1,098,057	43,799	314,352	255,297		3,487,363
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	380	62	1	34	8		485
	Sum of FacilityMorts	177	761	3	215	47		1,203
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	557	823	4	249	55		1,688
Total Sum of NumberCollected		2,843,827	4,461,426	136,765	387,939	3,334,471	1	11,164,429
Total Sum of NumberBarged		1,015,895	3,003,105	92,491	73,239	2,654,453	0	6,839,183
Total Sum of NumberBypassed		1,803,248	1,454,092	44,209	314,408	679,217	136	4,295,310
Total Sum of NumberTrucked		21,279	8	1	13	12	0	21,313
Total Sum of SampleMorts		1,580	266	3	41	76	0	1,966
Total Sum of FacilityMorts		1,268	3,905	61	238	665	0	6,137
Total Sum of ResearchMorts		38	52	0	0	47	0	137
Total Sum of TotalProjectMorts		2,886	4,223	64	279	788	0	8,240



Cumulative Adult Passage at Mainstem Dams Through: 09/06

DAM	End Date	Spring Chinook						Summer Chinook						Fall Chinook					
		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	08/29	83345	33820	158089	7592	141713	20323	93097	26186	81663	12235	87543	17586	148271	20464	51284	11540	56325	8574
TDA	08/29	69202	32311	117087	7175	107368	16911	85639	20750	69222	10392	74538	13909	55966	11006	25134	6529	23877	4773
JDA	08/28	56991	28957	107655	6755	92410	15875	74764	19636	60814	10415	67514	14608	25869	5695	11915	3420	11351	3197
MCN	08/29	52176	22279	102763	4787	83990	13854	75741	14808	64428	5104	63310	10848	18952	3720	10174	1869	7812	1736
IHR	08/29	38017	18611	71957	2905	58986	8558	11912	6321	14182	1481	17476	4251	6322	1182	2334	600	1845	462
LMN	08/29	36470	19053	68608	2891	58025	7379	11765	7703	15150	1611	18803	4213	4842	983	1867	522	1300	397
LGS	08/29	35072	19443	68247	3449	53406	8429	10120	7632	14748	1613	17544	4904	3841	721	1337	380	914	178
LGR	08/29	35031	19940	66366	3525	53382	9851	8423	7572	13163	1717	16010	5560	1602	394	990	245	604	153
PRD	08/28	13725	1298	19495	1015	15225	1406	71083	3174	50667	1994	53926	2612	4460	3115	2892	1988	2917	1129
WAN	08/28	13715	1661	19804	973	15699	2278	69983	2189	50588	1515	47124	1979	3158	1581	2689	1451	2158	1278
RIS	08/20	13345	3100	19881	800	14248	2237	68380	3985	52184	3343	51396	5464	988	1760	896	353	545	181
RRH	08/20	6841	2101	6641	459	5306	853	59680	4044	45528	2775	39283	4310	330	663	339	99	188	64
WEL	08/11	7133	2980	5311	700	4618	880	45444	3676	33926	2529	25378	2097	0	0	0	0	0	0
WFA	08/28	27780	1638	35899	1314	46153	1141	0	0	0	0	0	0	70	13	88	21	82	15

DAM	End Date	Coho						Sockeye			Steelhead						Lamprey		
		2013		2012		10-Yr Avg.		2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.	Wild 2013	Wild 2012	10-Yr Avg.	2013	2012	10-Yr Avg.
BON	08/29	3614	408	3448	438	7725	550	185499	515668	177592	179309	169202	255927	82551	66260	87071	22295	26426	32110
TDA	08/29	288	77	1243	280	1131	273	161888	410094	146266	73308	104342	113652	38850	44764	43745	7824	5356	7728
JDA	08/28	111	26	328	107	421	128	155361	394137	149051	40199	63387	87216	20107	28870	32624	5124	3766	6510
MCN	08/29	8	4	200	68	112	25	134175	364134	125774	36935	57470	62364	18192	23207	22352	1307	709	2713
IHR	08/29	-39	0	0	0	0	0	895	453	425	25837	10879	34152	8067	3484	9369	239	352	345
LMN	08/29	1	0	0	0	0	0	1013	486	530	19186	11147	33243	7918	4455	10212	89	106	99
LGS	08/29	1	0	0	0	0	0	989	451	508	10422	8316	23369	5073	4213	7603	27	53	91
LGR	08/29	0	0	0	0	0	0	736	454	613	12204	12395	20305	5813	5545	7035	13	36	29
PRD	08/28	0	0	3	0	23	0	163070	408256	154770	5731	8216	8545	0	0	0	4371	2044	2222
WAN	08/28	1	0	1	1	7	0	155692	450192	196434	4944	7748	9076	0	0	0	2050	1041	1198
RIS	08/20	0	0	0	0	0	0	159130	410498	152363	3143	5540	5256	1868	2712	2855	467	127	573
RRH	08/20	0	0	0	0	0	0	131619	363153	129767	2042	4553	3938	1149	2237	2004	369	84	230
WEL	08/11	0	0	0	0	0	0	129184	325199	123187	706	1382	1217	410	702	633	14	0	0
WFA	08/28	11	6	19	68	20	28	0	0	0	17381	31201	25612	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.