



## Fish Passage Center

# Weekly Report #13 - 20

August 2, 2013

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***High Water Temperature at Lower Granite Dam Fishway Continues to Impact Adult Passage (see page 5)***

### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has been below average over July, ranging between 2% and 45% of average at individual sub-basins. Precipitation above The Dalles has been 21% of average over July. Over the 2013 water year, precipitation has ranged between 67% and 103% of average.

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

Location	Water Year 2013 July 1-31, 2013		Water Year 2013 October 1, 2012 to July 31, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.51	20	32.7	95
SNAKE RIVER above Ice Harbor	0.31	31	14.9	72
Columbia above The Dalles	0.31	21	21.0	82
Kootenai	0.58	20	36.4	103
Clark Fork	0.30	19	18.6	74
Flathead	0.32	14	31.5	95
Pend Oreille Basin	0.26	14	25.8	85
SNAKE BASIN above Hells Canyon	0.36	45	11.9	69
Salmon River Basin	0.42	28	17.8	67
Clearwater	0.11	6	31.7	83
Willamette River above Portland	0.02	2	55.1	89

Grand Coulee Reservoir is at 1286.5 feet (8-1-13) and drafted 1.0 feet over the last week. Outflows at Grand Coulee have ranged between 115.5 and 137.6 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2454.4 feet (7-31-13) and has drafted 0.6 feet last week. Outflows at Libby Dam have been 14.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3557.5 feet (7-31-13) and has drafted 0.8 feet last week. Outflows at Hungry Horse Dam have been 2.8 to 3.1 Kcfs over the last week.

Dworshak is currently at an elevation of 1566.5 feet (8-1-13) and has drafted 6.7 feet last week. Outflows from Dworshak have ranged from 9.8 to 9.9 Kcfs over the last week for temperature and flow augmentation in the lower Snake River.

The Brownlee Reservoir was at an elevation of 2059.1 feet on August 1<sup>st</sup>, 2013, drafting 1.5 feet over the last week. Over the last week, inflows at Brownlee have ranged between 6.3 and 8.1 Kcfs.

The flow objective at Lower Granite over the summer period (June 21<sup>st</sup> to August 31<sup>st</sup>) is 50 Kcfs; over the summer period flows at Lower Granite have averaged 35.7 Kcfs and 24.9 Kcfs over the last week.

The flow objective at McNary over the summer period (July 1<sup>st</sup> to August 31<sup>st</sup>) is 200 Kcfs; over the summer period flows at McNary have averaged 212.0 Kcfs and over the last week have averaged 174.8 Kcfs.

**Spill:** Summer Spill began on June 20<sup>th</sup> at the lower Snake River projects and will extend through 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

Flow in the Snake River decreased a few Kcfs over the past week. This means that at times spill levels are likely going to be below the Court ordered amounts due to low flows and required powerhouse minimum flows at the Snake River projects.

At Lower Granite Dam spill was below the Court ordered volumes due to low flow and powerhouse minimum requirements. Powerhouse minimum requirements were a function of which unit was operated. Because of concern over adult sockeye passage at the project, consideration was given to decreasing juvenile passage protection and operating Unit 1. The operation of Unit 1 requires a higher flow (16.9 Kcfs) to operate at the 1% efficiency range due to its fixed blade configuration. The extent to which the project was below the Court order was a function of whether the operations were according to the Fisheries Operations Plan, or due to the operation of Unit 1 for adult sockeye passage. At Little Goose Dam the low flows initiated a change in spill from the 30% of instantaneous flow to a constant spill level of 7–11 Kcfs. This change was initiated on the afternoon of July 18<sup>th</sup>. The project spilled an instantaneous amount of approximately 9 Kcfs over the past week. At Lower Monumental and Ice Harbor dams the Court ordered summer spill levels were not met due to low flows and powerhouse minimum requirements precluding spill at the amounts described in the table.

Summer spill for fish passage at the Lower 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>. Spill will continue through 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 observed in the system over the past week. Based on historic data collected since 1995 from the gas bubble trauma (GBT) monitoring program, we would not expect to see fish exhibit signs of GBT at the present TDG levels. Consistent with historic data, one fish at Little Goose Dam (7/29), two fish at McNary Dam (8/2), and two fish at Bonneville Dam (7/30) were detected with minor signs of GBT.

**Smolt Monitoring:** Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, and LGR). Collections from 2013 out-migration season at the Imnaha River Trap were terminated on July 18<sup>th</sup>.

Subyearling Chinook were the dominant species of salmonid at all SMP dams over the past week. Although subyearling Chinook dominated the collections, all of the SMP sites continue to collect a few spring migrants.

High temperature sampling protocols were in effect for most of this week at BON. Under these high temperature sampling protocols, daily index sampling occurred every other day. All fish were bypassed on non-sample days. Passage of subyearling Chinook increased slightly this week, when compared to last week. This week’s daily average passage index for subyearling Chinook was just over 15,000 per day. Last week’s daily average passage index for subyearling Chinook was nearly 13,000 per day. Sockeye were the

only spring migrants that were collected at BON this week. The only lamprey juveniles that were collected this week were Pacific macrophthalmia, which were only collected on two of the four sample days. As of today, high temperature sampling protocols have been reinstated and will remain in effect until temperatures decrease to safer levels.

Due to elevated temperatures in the juvenile facility, high temperature sampling protocols were initiated at JDA on Thursday, July 25<sup>th</sup>. Under these high temperature sampling protocols, the SMP crew at JDA samples for condition only on Tuesdays and Thursdays. It is important to note that sampling under the higher temperature protocols at JDA results in bias collection estimates, as sampling is not 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. The only other species of salmonid that was collected in this week's samples was sockeye. Finally, no lamprey juveniles were collected in this week's samples. 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 continued to dominate the bypass sample at MCN this week. This week's daily average passage index for subyearling Chinook at MCN was nearly 34,800 per day. Last week's daily average passage index for subyearling Chinook was about 54,600 per day. The only spring migrants that were collected at MCN this week were yearling Chinook and sockeye. Yearling Chinook were collected only on one day this week (July 30<sup>th</sup>) while sockeye were collected on every sample day this week. This week's daily average passage index for sockeye was about 380 per day, which is a decrease from last week's daily average passage index of about 480 per day. Pacific lamprey macrophthalmia continue to be the only species and life-stage of lamprey collected at MCN this season. This week's daily average collection for Pacific lamprey macrophthalmia was about 100, which was higher than last week's daily average collection of only 33 per day.

Passage of subyearling Chinook at LGR continued to decrease this week when compared to last week. This week's daily average passage index for subyearling Chinook was about 1,900 per day. Last week's daily average passage index was 2,400 per day. A very small number of yearling Chinook, sockeye, and steelhead were collected this week. No coho juveniles were collected this week. In addition, Pacific lamprey macrophthalmia were collected only one day this week (July 30<sup>th</sup>). Finally, 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 at LGS increased slightly this week when compared to last week. This week's daily average passage index for subyearling Chinook at LGS was nearly 2,100 per day. Last week's daily average passage index was about 1,900 per day. Yearling Chinook and steelhead were the only spring migrants that were collected in this week's samples. However, collections of yearling Chinook and steelhead were extremely low this week. Finally, only Pacific lamprey macrophthalmia were collected at LGS this week. Pacific lamprey macrophthalmia were sampled every day this week, with a daily average collection of about 15 per day.

Subyearling Chinook passage at LMN decreased this week when compared to last week. This week's daily average passage index for subyearling Chinook at LMN was about 400 per day. Last week's daily average passage index was nearly 840 per day. The only spring migrants that were collected this week were yearling Chinook and steelhead. Finally, only Pacific lamprey macrophthalmia were collected at LMN this week. Pacific lamprey macrophthalmia were collected nearly every day this week, although in very low numbers.

On the morning of July 29<sup>th</sup>, the adult ladder at RIS was dewatered for repairs. Dewatering of the adult ladder led to the suspension of juvenile sampling for the SMP. Collections will resume as soon as repairs are completed in the adult ladder. For the period of July 26<sup>th</sup> to July 29<sup>th</sup>, passage of subyearling Chinook had increased when compared to the previous week. The daily average passage index for subyearling Chinook at RIS over these four days was about 450 per day. Last week's daily average passage index for subyearling Chinook was about 400 per day. Passage of yearling Chinook, coho, sockeye, and steelhead was extremely low over these four days. Finally, Pacific lamprey macrophthalmia were collected on three of the four sample days this week, although in low numbers.

Collections at the Imnaha River Trap ended for the 2013 out-migration season on July 18<sup>th</sup>. Only yearling Chinook were collected during the last few days of sampling. However, it is unclear as to whether these Chinook juveniles were active migrants or pre-smolts that will rear elsewhere and out-migrate in 2014.

### 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

Fall Chinook began to pass Bonneville Dam on August 1<sup>st</sup>. The adult fall Chinook count of 456 is about 63.1% of the 2012 count of 722, while being about 1.3 times greater than the 10-year average count of 339. The 2013 Bonneville Dam fall Chinook jack count of 63 is about 26.6% of the 2012 count of 237 and about 91.3% of the 10-year average count of 69. The 2013 summer Chinook count of 93,097 is about 1.14 times greater than the 2012 count of 81,663 and 1.06 times greater than the 10-year average count of 87,543. The 2013 Bonneville Dam summer Chinook jack count of 26,186 is 2.1 times greater than the 2012 count of 12,235 and 1.5 times greater than the 10-year average count of 17,586. At McNary Dam 72,753 adult summer Chinook have been counted. The 2013 adult summer Chinook count at McNary Dam is about 1.2 times greater than the 2012 count and 1.2 times greater than the 10-year average. The 2013 McNary Dam summer Chinook jack count of 14,158 is about 3 times greater than the 2012 count and 1.3 times greater than the 10-year average count. The 2013 adult summer Chinook count at Lower Granite Dam in the Snake River of 7,797 is about 62.5% of the 2012 count and 50.2% of the 10-year average count. The 2013 Lower Granite summer Chinook jack count of 7,161 is about 4.4 times greater than the 2012 count and 1.3 times greater than the 10-year average count.

The 2013 Bonneville Dam adult steelhead count of 68,420 is about 74.2% of the 2012 count of 92,197 and 59.8% of the 10-year average count of 114,353. The 2013 Bonneville Dam adult wild steelhead count of 38,170 is about 95.7% of the 2012 count of 39,889 and 79.1% of the 10-year average count of 48,251. In the Snake River, this year's Lower Granite steelhead count of 8,695 is about 84.7% of the 2012 count of 10,264 and 66% of the 10-year average count of 13,164. The 2013 Lower Granite Dam adult wild steelhead count of 3,858 is about 85.2% of the 2012 count of 4,528 and about 86.2% of the 10-year average count of 4,476. At Willamette Falls, the 2013 count for steelhead was 16,935 as of July 20<sup>th</sup>. This year's steelhead count is about 55.5% of the 2012 count of 30,495 and about 68% of the 10-year average count of 24,909.



Daily adult sockeye passage numbers at Bonneville Dam ranged between 87 and 294 last week. The 2013 adult sockeye count at Bonneville Dam of 185,033 is about 35.9% of the 2012 count of 515,530, while being 1.04 times greater than the 10-year average count of 177,489. 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 133,370 is about 36.6% of the 2012 count of 363,841, while being 1.06 times greater than the 10-year average count of 125,611. The Lower Granite Dam 2013 adult sockeye count of 695 is about 1.6 times greater than the 2012 count of 429 and 1.16 times greater than the 10-year average count of 599.

One adult coho has crossed Bonneville dam so far this year. As of August 1<sup>st</sup> at Bonneville Dam, the adult shad count was 3,748,555. This year's shad count is about 1.5 times greater than the 2012 count of 2,429,461 and 1.3 times greater than the 10-year average count of 2,860,616.

### **Lower Granite Dam Excessive Temperature Issue**

Over the last week, adult passage concerns have continued at Lower Granite Dam. Of particular importance have been the very low daily passage numbers of sockeye and the discrepancy between the counts of sockeye reported at Little Goose Dam as compared to those reported at Lower Granite Dam.

The COE continues to utilize the emergency pumping system to moderate temperature in the Lower Granite ladder. The emergency pumps draw water from deeper in the forebay (cooler water) as compared to the other sources of water contributing to the upper ladder. The use of these pumps has cooled ladder temperatures near the fishway exit to a range of 69–72° F, which prior to using these pumps had been ranging between 72–76° F.

Adults passing through the ladder did seem to respond to the initiation of the emergency pumps and resulting cooler ladder water. However, early last week when unit priority was switched back to the Fish

Operation Plan Unit #2 priority, daily fish counts at Lower Granite decreased despite the ladder remaining relatively cool. When Unit #2 was operating, project personnel did report an eddy that was thought to be impacting the attraction of adults into the fishway. Late Wednesday (7-31-13) morning the action agencies resorted back an operation that prioritized Unit #1, effectively moving more water through the powerhouse and less water over the spillway, with all spilled water moving over the RSW. Adult fish counts on July 31<sup>st</sup> did not improve, but on August 1<sup>st</sup>, 2013, adults did show an increase relative to counts over the previous several days. This operation will tentatively remain in place through the middle of next week, with a check-in on Monday.

**Hatchery Releases Last Two Weeks**

**Hatchery Release Summary**

**From: 7/19/2013 to 08/01/13**

<b>Agency</b>	<b>Hatchery</b>	<b>Species</b>	<b>Race</b>	<b>MigYr</b>	<b>NumRel</b>	<b>RelStart</b>	<b>RelEnd</b>	<b>RelSite</b>	<b>RelRiver</b>
Nez Perce Tribe	Dworshak NFH	CH0	SP	2014	300,000	07-01-13	08-01-13	Selway River	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>300,000</b>				
<b>Grand Total</b>					<b>300,000</b>				

**Hatchery Releases Next Two Weeks**

**Hatchery Release Summary**

**From: 8/2/2013 to 8/15/2013**

<b>Agency</b>	<b>Hatchery</b>	<b>Species</b>	<b>Race</b>	<b>MigYr</b>	<b>NumRel</b>	<b>RelStart</b>	<b>RelEnd</b>	<b>RelSite</b>	<b>RelRiver</b>
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No Releases Scheduled

**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
07/19/2013	152.0	0.2	144.9	0.0	155.4	10.1	160.5	13.0	164.1	30.9	174.5	32.7	172.7	29.9
07/20/2013	121.2	0.2	123.5	0.0	137.1	9.4	139.4	11.7	143.2	28.5	162.2	20.1	163.7	26.1
07/21/2013	115.7	0.2	113.2	0.0	121.3	8.5	122.7	11.6	124.8	27.5	154.7	18.5	152.9	24.8
07/22/2013	130.2	0.2	131.9	0.0	140.0	10.0	143.6	12.1	148.1	28.2	138.0	24.3	134.6	23.7
07/23/2013	137.9	0.2	136.5	0.0	137.4	9.8	134.1	12.3	133.8	28.7	142.0	33.3	140.3	25.4
07/24/2013	133.4	0.2	133.7	0.0	134.3	9.2	131.7	11.7	134.1	28.3	138.2	27.7	132.2	25.9
07/25/2013	130.1	0.2	133.8	0.0	142.0	9.5	140.7	11.9	141.3	28.6	146.9	25.1	143.9	26.3
07/26/2013	133.5	0.2	127.2	0.0	131.9	10.0	130.4	12.2	132.5	28.6	158.5	19.3	156.0	26.3
07/27/2013	115.5	0.2	117.5	0.0	117.9	9.8	118.7	10.8	122.4	26.0	123.9	19.1	119.6	26.7
07/28/2013	115.8	0.2	113.5	0.0	116.8	9.6	114.0	11.4	115.9	25.5	120.0	19.3	116.2	27.2
07/29/2013	128.4	0.2	127.0	0.0	128.1	9.9	128.1	11.8	131.1	28.8	128.1	23.2	123.8	27.2
07/30/2013	137.1	0.2	139.7	0.0	141.2	9.4	141.6	12.0	145.2	28.5	150.5	43.6	146.8	29.9
07/31/2013	137.6	0.0	140.7	0.0	143.4	10.0	142.5	12.4	144.3	28.6	153.2	43.2	150.8	28.0
08/01/2013	118.9	0.0	116.4	0.0	122.7	10.0	123.2	11.7	124.0	27.6	134.3	26.4	139.0	26.9

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

Date	Dworshak		Brownlee Canyon		Hells Granite		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/19/2013	9.7	0.0	---	---	29.4	17.4	28.9	9.1	29.2	14.8	27.8	17.4	---	---
07/20/2013	9.7	0.0	---	---	31.2	18.1	31.5	9.1	33.7	17.0	35.2	24.7	---	---
07/21/2013	10.9	1.2	---	---	27.1	15.0	28.1	9.0	29.2	16.9	28.9	19.1	---	---
07/22/2013	11.8	2.1	---	---	26.9	13.0	28.0	9.0	28.1	15.6	28.6	18.6	---	---
07/23/2013	11.1	1.4	---	---	27.5	15.1	26.8	9.1	29.0	15.3	28.9	18.0	---	---
07/24/2013	11.1	1.3	---	---	27.9	16.5	28.5	9.1	29.5	17.0	30.8	20.3	---	---
07/25/2013	10.3	0.5	---	---	26.8	13.3	29.6	9.1	30.3	15.9	29.2	18.5	---	---
07/26/2013	9.9	0.0	---	---	27.0	14.6	26.4	9.0	28.8	16.3	30.1	19.4	---	---
07/27/2013	9.8	0.0	---	---	25.0	9.5	23.9	9.1	23.0	10.5	22.1	11.3	---	---
07/28/2013	9.8	0.0	---	---	25.5	8.1	26.5	9.1	27.2	15.0	28.1	17.8	---	---
07/29/2013	9.8	0.0	---	---	22.4	7.6	24.1	9.1	26.1	13.7	27.4	17.0	---	---
07/30/2013	9.9	0.0	---	---	25.3	13.2	25.6	9.0	25.5	13.1	25.2	15.0	---	---
07/31/2013	9.9	0.0	---	---	24.9	9.9	25.1	9.1	26.0	13.6	26.3	16.1	---	---
08/01/2013	9.8	0.0	---	---	24.1	6.9	25.4	9.2	26.4	14.0	27.4	17.1	---	---

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

Date	McNary		John Day		The Dalles		Bonneville				
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2	
07/19/2013	190.5	95.4	186.9	74.4	176.9	70.6	182.9	95.4	0.0	75.1	---
07/20/2013	216.0	108.2	197.9	75.9	187.2	74.8	197.4	90.1	7.1	87.8	---
07/21/2013	197.1	98.8	179.1	53.9	160.9	64.4	183.6	87.0	2.1	82.1	---
07/22/2013	190.6	95.7	194.9	58.1	181.8	72.4	196.9	87.2	19.0	78.3	---
07/23/2013	178.7	89.5	164.0	49.2	151.3	60.4	173.1	87.1	3.4	70.2	---
07/24/2013	161.2	80.7	151.1	45.4	137.0	54.8	155.3	86.9	0.0	56.0	---
07/25/2013	170.8	85.6	169.2	50.7	154.8	61.8	160.1	87.4	0.0	60.2	---
07/26/2013	197.7	99.0	190.5	57.1	174.5	69.8	186.7	87.0	11.8	75.5	---
07/27/2013	168.6	84.7	146.8	44.1	135.3	54.1	153.8	87.4	-0.4	54.4	---
07/28/2013	149.3	74.7	143.9	43.2	131.7	52.8	148.3	87.9	0.0	48.0	---
07/29/2013	159.0	79.3	156.9	47.0	147.5	59.0	155.9	87.7	0.0	55.7	---
07/30/2013	166.4	83.2	161.9	48.3	152.2	60.8	167.4	87.2	4.3	63.5	---
07/31/2013	194.1	97.3	183.6	54.8	164.5	65.7	175.2	86.7	5.9	70.2	---
08/01/2013	188.8	94.8	179.6	53.8	163.4	65.6	179.4	89.2	8.7	69.1	---

## 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>											
	07/22/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/29/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Lower Monumental Dam</b>											
	07/24/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/31/13	Chinook + Steelhead	59	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
	07/23/13	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0
	07/25/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/29/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Bonneville Dam</b>											
	07/20/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/23/13	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/28/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/30/13	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
<b>Rock Island Dam</b>											
	07/23/13	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/24/13	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>	
7/19	106.0	106.4	106.7	24	---	---	---	0	113.0	113.7	114.4	24	110.6	111.4	111.7	24	112.3	112.7	112.9	24
7/20	106.6	107.1	107.7	24	---	---	---	0	113.4	113.8	114.0	24	110.1	110.9	111.5	24	112.8	113.1	113.5	24
7/21	106.7	107.1	107.5	24	---	---	---	0	113.7	114.1	114.6	24	110.7	111.9	112.2	24	112.8	113.2	113.4	24
7/22	111.3	116.3	119.7	24	---	---	---	0	113.4	113.6	113.7	24	110.8	111.2	111.5	24	112.6	113.1	113.6	24
7/23	113.5	119.2	119.5	24	---	---	---	0	112.9	113.2	113.7	24	110.4	110.9	111.1	23	112.5	112.9	113.1	24
7/24	106.5	106.9	107.5	24	---	---	---	0	113.3	113.4	113.7	24	110.4	110.8	111.1	24	112.4	112.7	113.1	24
7/25	106.5	106.8	107.2	24	---	---	---	0	113.3	113.5	113.7	24	110.0	110.7	111.1	24	112.2	112.6	113.1	24
7/26	106.5	106.9	107.3	24	---	---	---	0	113.4	113.6	113.8	24	110.5	110.7	111.1	24	111.9	112.3	112.6	24
7/27	106.6	106.9	107.2	24	---	---	---	0	113.5	113.8	114.0	24	109.1	109.8	110.1	24	111.8	112.3	112.5	24
7/28	106.7	107.1	107.5	24	---	---	---	0	113.8	114.0	114.3	24	110.0	110.9	111.4	24	111.8	112.2	112.5	24
7/29	106.5	106.7	106.9	24	---	---	---	0	113.4	113.6	113.7	24	110.4	110.7	110.9	24	111.8	112.2	112.6	24
7/30	106.7	107.2	107.9	24	---	---	---	0	113.0	113.2	114.8	24	110.5	110.8	111.5	21	111.7	111.9	112.1	24
7/31	106.4	106.9	107.2	24	---	---	---	0	113.1	113.4	113.8	24	110.3	110.6	111.1	22	111.5	111.7	111.9	24
8/1	106.7	107.0	107.2	19	---	---	---	0	113.5	113.6	114.0	23	110.4	110.6	110.8	23	111.5	111.8	112.1	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>	
7/19	111.1	111.5	111.7	24	111.9	112.3	112.9	24	113.5	114.2	114.9	24	112.2	112.9	113.4	24	115.2	116.4	117.1	24
7/20	112.0	112.3	112.5	24	112.3	112.8	113.2	24	113.2	114.0	114.7	24	113.0	113.6	113.9	24	114.9	115.9	116.6	24
7/21	112.3	112.7	113.4	24	112.5	113.2	113.8	23	113.2	113.9	114.6	23	112.5	112.9	113.2	24	114.2	114.9	115.3	24
7/22	112.3	113.0	113.8	24	112.0	112.4	113.2	20	113.1	113.8	114.5	20	111.9	112.2	112.5	24	114.4	115.3	116.3	24
7/23	111.9	112.2	112.5	24	112.0	112.6	113.3	20	113.2	114.0	114.8	20	111.7	112.3	112.9	24	114.3	115.7	116.1	24
7/24	111.8	112.4	112.8	24	112.4	112.8	113.7	20	113.5	114.2	115.5	20	112.2	112.9	113.3	24	114.2	115.5	116.3	24
7/25	111.4	111.8	112.4	24	112.2	112.7	113.3	23	113.4	114.3	115.2	23	112.5	112.9	113.1	24	114.4	115.3	116.1	24
7/26	111.4	111.8	112.2	24	111.5	111.9	112.7	22	112.9	113.5	114.5	22	112.2	112.6	112.7	24	114.2	115.2	116.0	24
7/27	111.4	111.6	112.4	24	112.0	112.5	113.3	21	113.1	113.8	114.5	21	111.7	112.0	112.3	24	113.4	113.9	114.6	24
7/28	111.6	112.0	112.4	24	112.1	113.0	113.6	22	113.4	114.4	115.0	22	111.6	111.9	112.5	24	113.4	114.2	115.2	24
7/29	111.4	111.7	112.0	24	111.2	111.8	112.3	23	112.9	113.6	114.4	23	111.8	111.9	112.1	24	113.8	114.6	115.9	24
7/30	111.3	111.8	112.3	24	110.9	111.5	112.0	23	112.4	113.3	113.9	23	111.5	111.8	112.0	24	113.8	114.7	115.8	24
7/31	111.0	111.3	112.0	24	111.5	111.9	112.6	21	113.2	113.8	114.5	21	110.9	111.3	111.5	24	113.6	114.5	114.8	24
8/1	111.8	112.4	113.3	23	110.8	111.3	112.3	21	112.7	113.2	114.1	21	111.4	111.8	112.2	23	113.3	114.2	115.2	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>	
7/19	111.3	112.4	113.2	24	116.5	117.4	118.1	24	112.8	113.8	114.6	24	113.2	113.7	113.9	24	112.5	113.2	113.7	24
7/20	112.2	112.9	113.6	24	117.1	118.0	118.4	24	112.5	113.2	114.2	24	113.8	114.1	114.3	24	112.4	112.9	113.4	24
7/21	111.9	112.4	112.7	24	116.8	117.5	117.8	24	111.1	111.8	112.4	24	112.9	113.2	113.9	24	111.1	111.5	112.0	24
7/22	111.3	111.8	112.4	24	115.6	116.3	117.0	24	110.5	111.2	111.5	24	112.5	112.7	113.0	24	110.3	110.6	111.3	24
7/23	111.0	111.8	112.5	24	115.5	116.5	117.2	24	111.2	112.2	113.1	24	113.5	114.2	116.1	24	111.2	112.6	113.6	24
7/24	111.4	112.0	112.5	24	116.2	116.8	117.7	24	111.1	111.8	112.3	24	113.5	114.3	116.1	24	111.8	112.8	113.6	24
7/25	111.7	112.3	112.9	24	116.1	116.8	117.9	24	112.3	113.4	114.5	24	113.1	113.5	113.8	24	111.9	112.8	114.1	24
7/26	111.6	112.1	112.6	24	116.1	116.9	117.7	24	111.8	112.6	114.4	24	112.7	113.1	113.4	24	111.0	111.4	112.2	24
7/27	111.1	111.5	111.9	24	115.8	116.4	117.4	24	110.5	111.3	112.2	24	112.7	113.2	113.4	24	110.4	111.0	112.5	24
7/28	110.6	111.3	111.9	24	115.6	116.2	116.6	24	110.2	111.1	112.3	24	112.6	113.1	113.9	24	109.8	110.5	111.1	24
7/29	110.8	111.7	112.3	24	116.4	117.4	118.3	24	112.1	113.4	114.2	24	113.2	113.5	113.8	24	110.9	111.6	112.2	24
7/30	110.9	111.6	112.1	24	116.2	117.0	118.0	24	111.4	112.1	113.8	24	114.8	116.7	120.1	24	111.9	112.8	113.7	24
7/31	110.5	110.8	111.2	24	115.8	116.7	117.4	24	112.4	113.5	114.3	24	114.4	115.5	117.2	24	114.0	115.1	116.7	24
8/1	110.4	110.7	111.0	23	115.9	116.8	117.3	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>			# hr	<u>Pasco</u>			# hr	<u>Dworshak</u>			# hr	<u>Clrwtr-Peck</u>			# hr	<u>Anatone</u>			# hr
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
7/19	114.3	114.5	114.7	24	---	---	---	0	99.5	100.0	100.3	24	101.9	103.1	104.1	24	102.9	103.1	105.4	13
7/20	114.5	114.7	114.8	24	---	---	---	0	100.1	100.5	100.9	24	102.2	103.4	104.5	24	102.7	104.1	105.4	24
7/21	113.4	113.7	114.3	24	---	---	---	0	102.4	105.0	105.9	24	103.4	105.7	107.4	24	102.6	104.0	105.4	24
7/22	112.8	113.1	113.3	24	---	---	---	0	104.0	104.9	105.2	24	104.7	105.8	106.8	24	101.8	102.4	104.9	16
7/23	113.0	113.6	113.9	24	---	---	---	0	102.0	102.3	102.6	24	103.2	104.2	105.0	24	103.4	103.6	105.2	13
7/24	114.3	114.9	115.7	24	---	---	---	0	101.9	102.4	102.8	24	102.9	104.1	105.0	24	102.4	103.8	105.2	24
7/25	114.2	114.7	115.3	24	---	---	---	0	100.8	101.4	102.3	24	102.2	103.1	103.7	24	102.3	103.8	105.3	24
7/26	113.8	114.1	114.4	24	---	---	---	0	99.8	100.2	100.6	24	101.1	102.3	103.2	24	102.1	103.7	105.2	24
7/27	113.1	113.6	114.1	24	---	---	---	0	100.1	100.6	100.9	24	101.1	102.3	103.1	24	102.1	103.5	104.9	23
7/28	112.7	113.1	113.4	24	---	---	---	0	100.4	100.8	101.2	24	103.4	106.6	126.2	24	101.9	103.4	105.0	24
7/29	113.0	113.6	113.9	24	---	---	---	0	100.3	100.7	101.1	24	115.8	126.2	126.5	24	101.3	102.1	104.8	18
7/30	114.2	114.8	115.1	24	---	---	---	0	100.0	100.3	100.6	24	101.8	102.8	103.5	24	101.8	103.3	104.9	24
7/31	116.0	116.8	117.7	24	---	---	---	0	100.1	100.6	100.9	24	101.9	103.0	103.9	24	101.9	103.2	104.3	24
8/1	---	---	---	0	---	---	---	0	100.2	100.5	101.0	23	101.7	102.4	103.7	23	101.1	101.9	103.3	23

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

Date	<u>Clrwtr-Lewiston</u>			# hr	<u>Lower Granite</u>			# hr	<u>L. Granite Tlwr</u>			# hr	<u>Little Goose</u>			# hr	<u>L. Goose Tlwr</u>			# hr
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
7/19	104.1	106.5	108.3	24	102.4	102.6	102.9	24	116.7	117.3	117.8	24	110.6	110.7	110.9	24	103.2	104.4	105.1	24
7/20	104.2	106.7	108.4	24	102.9	103.1	103.4	24	116.7	117.0	117.8	24	111.9	112.5	113.3	24	104.0	105.1	105.8	24
7/21	104.1	106.6	108.3	24	103.0	103.1	103.4	24	115.7	116.7	117.0	24	113.4	113.6	113.8	24	105.2	106.0	106.4	24
7/22	105.0	107.3	108.9	24	102.1	102.3	102.6	24	115.6	117.1	117.3	24	113.5	113.7	113.8	24	107.3	108.4	109.1	24
7/23	104.7	107.0	108.7	24	101.7	101.9	102.0	24	116.0	117.8	119.3	24	113.5	113.7	113.9	24	106.8	107.4	107.9	24
7/24	104.5	106.8	108.4	24	101.6	101.8	101.9	24	116.4	117.8	118.8	24	112.7	112.9	113.4	24	107.4	108.2	108.3	24
7/25	104.3	106.7	108.3	24	101.5	101.6	101.8	24	115.3	116.8	118.5	24	112.1	112.2	112.4	24	109.4	110.5	111.1	24
7/26	103.8	106.3	108.1	24	101.4	101.7	102.0	24	115.6	116.4	116.8	24	111.7	111.9	112.0	24	110.9	112.4	113.4	24
7/27	103.9	106.3	108.0	24	101.7	102.0	102.5	24	113.2	113.9	114.5	24	112.1	112.3	112.5	24	112.9	113.4	113.9	24
7/28	103.7	105.9	107.6	24	102.3	102.5	102.8	24	112.3	112.6	113.2	24	112.4	112.6	112.7	24	113.3	113.7	114.2	24
7/29	103.7	105.9	107.6	24	102.0	102.2	102.4	24	112.2	112.7	113.2	24	111.8	112.2	112.4	24	113.0	113.5	113.9	24
7/30	103.3	105.3	106.7	24	101.9	102.0	102.2	24	116.3	117.8	118.4	24	110.3	110.5	110.7	24	112.9	113.3	113.7	24
7/31	103.3	105.2	106.7	24	102.0	102.2	102.3	24	114.6	115.9	116.1	24	110.6	111.0	111.1	24	112.9	113.2	113.5	24
8/1	102.4	103.7	105.2	23	101.8	101.9	102.1	23	111.6	111.9	112.3	23	110.9	111.1	111.4	23	111.0	112.6	112.9	23

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

Date	<u>Lower Mon.</u>			# hr	<u>L. Mon. Tlwr</u>			# hr	<u>Ice Harbor</u>			# hr	<u>Ice Harbor Tlwr</u>			# hr	<u>McNary-Oregon</u>			# hr
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
7/19	109.3	109.7	110.1	24	114.8	116.1	116.8	24	110.5	110.7	111.0	24	111.7	112.7	113.2	24	---	---	---	0
7/20	109.4	109.6	109.8	24	116.1	116.2	116.4	24	111.1	111.4	111.7	24	113.4	114.4	115.2	24	---	---	---	0
7/21	109.5	109.8	110.3	24	116.1	116.4	116.9	24	111.3	111.6	112.1	24	112.2	113.2	114.2	24	---	---	---	0
7/22	109.9	110.1	110.3	24	115.2	115.7	116.2	24	111.6	112.0	112.3	24	112.3	113.5	114.2	24	---	---	---	0
7/23	109.9	110.1	110.3	24	115.3	116.0	116.4	24	111.9	112.1	112.2	24	112.8	113.5	114.0	24	---	---	---	0
7/24	109.7	110.0	110.1	24	116.2	116.4	116.7	24	111.7	111.9	112.0	24	112.7	113.5	114.2	24	---	---	---	0
7/25	109.0	109.3	109.5	24	115.5	116.1	116.6	24	111.4	111.5	111.7	24	113.0	113.6	114.1	24	---	---	---	0
7/26	109.7	110.9	112.1	24	116.0	116.5	116.8	24	111.3	111.5	111.7	24	113.1	113.7	114.4	24	---	---	---	0
7/27	111.2	111.4	111.5	24	113.7	114.3	114.9	24	111.6	112.0	112.3	24	111.3	112.2	113.0	24	---	---	---	0
7/28	111.2	111.4	111.7	24	115.0	115.1	115.4	24	111.8	112.0	112.5	24	112.8	113.8	114.3	24	---	---	---	0
7/29	111.0	111.1	111.5	24	114.9	115.7	116.8	24	111.9	112.1	112.5	24	112.9	113.6	114.1	24	---	---	---	0
7/30	110.0	110.2	110.6	24	114.0	114.3	114.6	24	111.6	111.9	112.1	24	110.5	111.2	111.7	24	---	---	---	0
7/31	109.7	110.0	110.2	24	113.6	114.0	114.2	24	111.3	111.4	111.6	24	110.4	110.8	111.1	24	---	---	---	0
8/1	109.7	109.9	110.5	23	113.8	114.0	114.2	23	110.4	110.6	111.0	23	110.9	111.8	112.8	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>				
7/19	109.6	109.9	110.2	24	116.4	116.8	117.1	24	108.9	109.4	109.6	24	114.5	115.3	116.0	24	109.6	110.1	110.8	24
7/20	110.6	110.8	111.3	24	116.9	117.3	117.7	24	108.9	109.2	109.5	24	114.8	115.8	116.2	24	110.1	110.4	110.6	24
7/21	111.2	111.5	111.6	24	116.8	117.0	117.4	24	108.2	108.6	108.9	24	114.5	114.7	114.9	24	108.9	109.6	110.2	24
7/22	110.8	111.0	111.2	24	116.6	117.0	117.3	24	107.3	107.5	107.7	24	114.7	114.9	115.4	24	107.2	107.5	107.7	24
7/23	110.3	110.8	111.6	24	116.1	116.6	116.9	24	107.5	108.4	109.3	24	114.0	114.6	115.2	24	107.8	108.3	108.8	24
7/24	109.7	109.9	110.3	24	115.8	116.7	117.2	24	108.6	109.1	109.5	24	114.9	115.3	115.8	24	109.1	109.4	109.5	24
7/25	109.5	109.9	110.2	24	116.3	116.8	117.1	24	108.3	108.6	108.9	24	114.4	114.7	115.0	24	108.6	108.8	109.0	24
7/26	109.5	109.8	110.2	24	116.6	116.8	117.1	24	107.9	108.2	108.7	24	113.8	114.3	114.7	24	108.2	108.4	108.6	24
7/27	109.6	110.0	110.2	24	116.3	116.5	116.8	24	107.0	107.2	107.5	24	114.0	114.3	114.7	24	106.9	107.7	108.5	24
7/28	110.0	110.2	110.5	24	115.4	116.0	116.6	24	106.6	106.9	107.3	24	113.9	114.3	114.7	24	105.2	105.4	105.6	24
7/29	109.2	109.5	109.8	24	115.8	116.6	117.0	24	106.2	106.8	107.1	24	113.7	114.3	114.6	24	105.4	105.9	106.5	24
7/30	107.7	108.2	108.7	24	115.8	116.4	116.7	24	105.5	105.8	106.0	24	113.2	113.9	114.4	24	106.7	106.9	107.1	24
7/31	107.2	107.5	108.1	24	116.3	116.4	116.6	24	105.6	106.1	106.5	24	113.0	113.6	114.6	24	107.5	107.6	108.2	24
8/1	107.2	107.4	107.6	23	116.2	116.4	116.7	23	105.5	105.6	105.7	23	113.2	113.6	114.1	23	107.0	107.9	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>				
7/19	113.8	114.5	115.1	24	108.2	108.5	108.8	24	114.4	114.9	115.1	24	111.5	112.6	113.4	24	117.3	117.5	117.8	24
7/20	113.8	114.5	115.1	24	107.4	107.7	107.9	24	113.5	113.8	114.0	24	111.0	111.9	112.5	24	116.2	116.8	119.2	24
7/21	113.0	113.7	114.0	24	106.9	107.2	107.4	24	114.0	114.7	115.9	24	110.3	111.8	113.2	24	116.4	117.4	119.4	24
7/22	111.8	112.4	112.6	24	106.5	107.0	107.3	24	113.1	114.4	116.3	24	110.4	112.4	114.2	24	116.3	117.4	119.3	24
7/23	112.1	112.7	113.1	24	107.3	107.9	108.3	24	114.4	114.9	115.6	24	110.7	112.7	113.8	24	116.1	117.4	119.5	24
7/24	113.9	115.3	115.8	24	107.9	108.2	108.7	24	115.8	116.4	117.5	24	112.5	114.4	115.9	24	116.2	117.3	118.9	24
7/25	114.6	115.2	115.7	24	107.2	107.6	108.0	24	116.1	117.1	118.0	24	113.6	115.4	117.0	24	116.1	117.2	118.8	24
7/26	114.4	114.8	115.3	24	107.4	107.8	108.3	24	114.9	116.4	117.8	24	112.7	114.2	115.7	24	116.6	117.5	119.3	24
7/27	113.6	113.9	114.2	24	106.4	106.6	107.5	24	114.9	115.6	116.3	24	110.2	112.3	113.8	24	116.0	117.2	119.1	24
7/28	112.4	112.8	113.1	24	104.9	105.2	106.1	24	115.2	116.1	117.5	24	111.1	112.7	114.3	24	115.7	117.0	119.2	24
7/29	112.2	113.2	113.5	24	104.4	104.7	105.2	24	114.9	116.0	117.2	24	112.0	113.8	115.5	24	116.0	117.1	119.2	24
7/30	113.0	113.9	114.5	24	104.4	105.0	105.5	24	114.3	115.7	117.2	24	111.1	112.9	114.6	24	115.7	116.9	119.2	24
7/31	113.9	114.6	115.1	24	106.1	106.6	107.0	24	114.1	115.4	117.4	24	110.2	111.9	113.1	24	116.2	117.2	119.2	24
8/1	113.6	114.0	114.3	23	105.8	106.0	106.2	23	114.0	115.4	116.9	23	109.0	110.2	111.4	23	116.4	117.4	119.0	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 8/2/2013 7:24

### Two-Week Summary of Passage Indices

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

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

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

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

<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)
07/19/2013	*	---	---	---	---	0	0	0	0	---	55
07/20/2013		---	---	---	---	0	0	0	0	0	0
07/21/2013	*	---	---	---	---	0	0	0	0	---	221
07/22/2013		---	---	---	---	0	0	0	0	0	0
07/23/2013	*	---	---	---	---	0	0	0	2	---	0
07/24/2013		---	---	---	---	0	0	5	0	0	0
07/25/2013	*	---	---	---	---	10	0	0	0	---	0
07/26/2013	*	---	---	---	---	0	0	0	0	0	---
07/27/2013	*	---	---	---	---	0	0	0	0	---	0
07/28/2013	*	---	---	---	---	0	0	0	0	---	---
07/29/2013	*	---	---	---	---	6	0	0	0	---	0
07/30/2013	*	---	---	---	---	0	2	0	---	0	---
07/31/2013	*	---	---	---	---	0	0	4	---	---	0
08/01/2013	*	---	---	---	---	0	0	0	---	0	0
08/02/2013		---	---	---	---	---	---	---	---	---	---
<hr/>											
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>2</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>276</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>25</b>
<b>YTD</b>		<b>50,632</b>	<b>55,650</b>	<b>26,301</b>	<b>2,797</b>	<b>2,607,070</b>	<b>1,500,074</b>	<b>614,211</b>	<b>28,314</b>	<b>2,123,325</b>	<b>2,056,882</b>
										<b>1,881,668</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)	
07/19/2013	*	---	---	---	---	3,496	1,616	1,431	378	---	30,526	13,284
07/20/2013		---	---	---	---	2,637	1,602	1,452	272	62,315	18,694	12,467
07/21/2013	*	---	---	---	---	2,328	1,628	891	439	---	14,559	14,809
07/22/2013		---	---	---	---	2,073	1,084	463	364	68,393	13,190	12,278
07/23/2013	*	---	---	---	---	1,650	741	465	480	---	20,624	20,284
07/24/2013		---	---	---	---	2,254	2,720	594	447	33,168	25,755	7,136
07/25/2013	*	---	---	---	---	2,383	3,980	557	368	---	19,131	10,136
07/26/2013	*	---	---	---	---	2,722	2,374	716	479	42,813	2,665	---
07/27/2013	*	---	---	---	---	2,358	3,144	686	512	---	---	22,545
07/28/2013	*	---	---	---	---	1,493	1,516	294	511	38,269	---	---
07/29/2013	*	---	---	---	---	1,197	2,010	170	323	---	---	10,516
07/30/2013	*	---	---	---	---	2,365	1,516	304	---	27,709	2,643	---
07/31/2013	*	---	---	---	---	1,778	2,364	287	---	---	---	11,890
08/01/2013	*	---	---	---	---	1,452	1,637	291	---	30,331	---	15,261
08/02/2013		---	---	---	---	---	---	---	---	---	---	---
<hr/>												
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30,186</b>	<b>27,932</b>	<b>8,601</b>	<b>4,573</b>	<b>302,998</b>	<b>147,787</b>	<b>150,606</b>
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>	<b>11</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,156</b>	<b>1,995</b>	<b>614</b>	<b>416</b>	<b>43,285</b>	<b>16,421</b>	<b>13,691</b>
<b>YTD</b>		<b>2</b>	<b>61</b>	<b>195</b>	<b>2,668</b>	<b>684,555</b>	<b>594,550</b>	<b>259,582</b>	<b>16,680</b>	<b>3,551,829</b>	<b>2,419,659</b>	<b>4,809,513</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)
07/19/2013 *	---	---	---	---	0	0	0	6	---	0	0
07/20/2013	---	---	---	---	0	0	0	0	0	0	0
07/21/2013 *	---	---	---	---	0	0	0	6	---	0	221
07/22/2013	---	---	---	---	0	0	0	0	0	0	0
07/23/2013 *	---	---	---	---	0	0	0	2	---	0	0
07/24/2013	---	---	---	---	0	0	0	9	0	0	0
07/25/2013 *	---	---	---	---	0	0	0	6	---	0	0
07/26/2013 *	---	---	---	---	0	0	0	5	0	0	---
07/27/2013 *	---	---	---	---	0	0	0	0	---	---	0
07/28/2013 *	---	---	---	---	0	0	0	0	0	---	---
07/29/2013 *	---	---	---	---	0	0	0	0	---	---	0
07/30/2013 *	---	---	---	---	0	0	0	---	41	0	---
07/31/2013 *	---	---	---	---	0	0	0	---	---	---	0
08/01/2013 *	---	---	---	---	0	0	0	---	0	---	0
08/02/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>41</b>	<b>0</b>	<b>221</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>	<b>11</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>3</b>	<b>6</b>	<b>0</b>	<b>20</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>61,810</b>	<b>54,156</b>	<b>10,580</b>	<b>49,970</b>	<b>85,380</b>	<b>188,509</b>	<b>770,818</b>

COMBINED STEELHEAD											
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)
07/19/2013 *	---	---	---	---	10	7	0	0	---	0	0
07/20/2013	---	---	---	---	10	11	0	0	0	0	0
07/21/2013 *	---	---	---	---	0	11	9	3	---	0	0
07/22/2013	---	---	---	---	0	0	5	1	0	0	0
07/23/2013 *	---	---	---	---	7	9	0	0	---	0	60
07/24/2013	---	---	---	---	0	9	5	0	0	0	10
07/25/2013 *	---	---	---	---	0	18	0	2	---	0	0
07/26/2013 *	---	---	---	---	0	0	0	0	0	29	---
07/27/2013 *	---	---	---	---	0	6	4	0	---	---	0
07/28/2013 *	---	---	---	---	6	0	0	3	0	---	---
07/29/2013 *	---	---	---	---	0	0	0	1	---	---	0
07/30/2013 *	---	---	---	---	0	0	0	---	0	0	---
07/31/2013 *	---	---	---	---	0	9	0	---	---	---	0
08/01/2013 *	---	---	---	---	6	0	2	---	0	---	0
08/02/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>80</b>	<b>25</b>	<b>10</b>	<b>0</b>	<b>29</b>	<b>70</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>6</b>
<b>YTD</b>	<b>3,789</b>	<b>40,841</b>	<b>3,547</b>	<b>9,925</b>	<b>2,036,993</b>	<b>1,715,731</b>	<b>610,897</b>	<b>14,964</b>	<b>471,593</b>	<b>732,388</b>	<b>470,274</b>

### Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/19/2013 *	---	---	---	---	0	7	0	4	---	0	0
07/20/2013	---	---	---	---	0	0	0	3	1,025	0	0
07/21/2013 *	---	---	---	---	0	0	0	9	---	0	230
07/22/2013	---	---	---	---	0	0	0	8	412	57	56
07/23/2013 *	---	---	---	---	0	0	0	7	---	286	179
07/24/2013	---	---	---	---	0	0	0	7	0	0	0
07/25/2013 *	---	---	---	---	0	0	0	2	---	0	0
07/26/2013 *	---	---	---	---	7	0	0	10	785	0	---
07/27/2013 *	---	---	---	---	0	0	0	8	---	---	234
07/28/2013 *	---	---	---	---	0	0	0	3	166	---	---
07/29/2013 *	---	---	---	---	6	0	0	3	---	---	12
07/30/2013 *	---	---	---	---	0	0	0	---	247	40	---
07/31/2013 *	---	---	---	---	0	0	0	---	---	---	134
08/01/2013 *	---	---	---	---	0	0	0	---	329	---	61
08/02/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>64</b>	<b>2,964</b>	<b>383</b>	<b>906</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>	<b>11</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>6</b>	<b>423</b>	<b>43</b>	<b>82</b>
<b>YTD</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>326</b>	<b>54,665</b>	<b>32,998</b>	<b>11,379</b>	<b>25,039</b>	<b>632,556</b>	<b>414,126</b>	<b>395,807</b>

COMBINED LAMPREY JUVENILES											
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)
07/19/2013 *	---	---	---	---	0	80	12	1	---	600	50
07/20/2013	---	---	---	---	0	128	0	0	100	100	50
07/21/2013 *	---	---	---	---	0	72	0	3	---	160	20
07/22/2013	---	---	---	---	0	40	0	2	0	240	50
07/23/2013 *	---	---	---	---	0	24	2	3	---	200	25
07/24/2013	---	---	---	---	0	12	0	1	0	100	0
07/25/2013 *	---	---	---	---	0	18	4	4	---	67	0
07/26/2013 *	---	---	---	---	0	16	4	5	40	0	---
07/27/2013 *	---	---	---	---	0	16	4	4	---	---	50
07/28/2013 *	---	---	---	---	0	32	4	0	40	---	---
07/29/2013 *	---	---	---	---	0	12	2	1	---	---	0
07/30/2013 *	---	---	---	---	4	16	0	---	140	0	---
07/31/2013 *	---	---	---	---	0	8	4	---	---	---	0
08/01/2013 *	---	---	---	---	0	8	4	---	180	---	25
08/02/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>482</b>	<b>40</b>	<b>24</b>	<b>500</b>	<b>1,467</b>	<b>270</b>
<b># Days:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>7</b>	<b>9</b>	<b>11</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>3</b>	<b>2</b>	<b>71</b>	<b>163</b>	<b>25</b>
<b>YTD</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>4,960</b>	<b>54,964</b>	<b>63,636</b>	<b>141</b>	<b>74,510</b>	<b>173,687</b>	<b>6,124</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:

8/2/13 7:23 AM

07/19/13 TO 08/02/13

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	14,612		8		20	8	14,648
	Sum of NumberBarged	15,142		8		15	8	15,173
	Sum of NumberBypassed	0		0		0	0	0
	Sum of Numbertrucked	0		0		0	0	0
	Sum of SampleMorts	20		0		0	0	20
	Sum of FacilityMorts	17		0		1	0	18
	Sum of ResearchMorts	0		0		0	0	0
	Sum of TotalProjectMorts	37		0		1	0	38
<b>LGS</b>	Sum of NumberCollected	18,412		1		55	5	18,473
	Sum of NumberBarged	18,595		1		55	5	18,656
	Sum of NumberBypassed	0		0		0	0	0
	Sum of Numbertrucked	0		0		0	0	0
	Sum of SampleMorts	39		0		0	0	39
	Sum of FacilityMorts	85		0		0	0	85
	Sum of ResearchMorts	0		0		0	0	0
	Sum of TotalProjectMorts	124		0		0	0	124
<b>LMN</b>	Sum of NumberCollected	3,964		4		11		3,979
	Sum of NumberBarged	4,786		8		18		4,812
	Sum of NumberBypassed	158		0		1		159
	Sum of Numbertrucked	0		0		0		0
	Sum of SampleMorts	10		0		0		10
	Sum of FacilityMorts	49		0		0		49
	Sum of ResearchMorts	0		0		0		0
	Sum of TotalProjectMorts	59		0		0		59
<b>MCN</b>	Sum of NumberCollected	147,183			20		1,441	148,644
	Sum of NumberBarged	0			0		0	0
	Sum of NumberBypassed	147,058			20		1,440	148,518
	Sum of Numbertrucked	0			0		0	0
	Sum of SampleMorts	98			0		1	99
	Sum of FacilityMorts	27			0		0	27
	Sum of ResearchMorts	0			0		0	0
	Sum of TotalProjectMorts	125			0		1	126
Total Sum of NumberCollected		184,171		13	20	86	1,454	185,744
Total Sum of NumberBarged		38,523		17	0	88	13	38,641
Total Sum of NumberBypassed		147,216		0	20	1	1,440	148,677
Total Sum of Numbertrucked		0		0	0	0	0	0
Total Sum of SampleMorts		167		0	0	0	1	168
Total Sum of FacilityMorts		178		0	0	1	0	179
Total Sum of ResearchMorts		0		0	0	0	0	0
Total Sum of TotalProjectMorts		345		0	0	1	1	347

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

8/2/13 7:23 AM

TO: 08/02/13

Site	Data	Species						Grand Total
		CH0	CH1	CO	SO	ST	LU	
<b>LGR</b>	Sum of NumberCollected	444,501	1,865,119	48,070	42,638	1,444,838		3,845,166
	Sum of NumberBarged	429,015	1,554,572	47,801	42,569	1,087,913		3,161,870
	Sum of NumberBypassed	13,693	308,258	210	52	356,574		678,787
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	475	173	2	2	40		692
	Sum of FacilityMorts	325	2,066	57	15	259		2,722
	Sum of ResearchMorts	38	52	0	0	47		137
	Sum of TotalProjectMorts	838	2,291	59	17	346		3,551
<b>LGS</b>	Sum of NumberCollected	412,111	1,026,507	36,885	22,611	1,174,645		2,672,759
	Sum of NumberBarged	410,438	979,235	36,685	22,607	1,108,312		2,557,277
	Sum of NumberBypassed	251	46,698	200	1	66,201		113,351
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	97	14	0	0	9		120
	Sum of FacilityMorts	309	560	0	3	123		995
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	406	574	0	3	132		1,115
<b>LMN</b>	Sum of NumberCollected	162,412	470,877	7,998	8,064	459,572	1	1,108,924
	Sum of NumberBarged	148,053	469,265	7,997	8,058	458,177	0	1,091,550
	Sum of NumberBypassed	13,370	1,079	0	2	1,142	109	15,702
	Sum of NumberTrucked	0	0	0	0	0	0	0
	Sum of SampleMorts	90	15	0	0	18	0	123
	Sum of FacilityMorts	305	518	1	4	235	0	1,063
	Sum of ResearchMorts	0	0	0	0	0	0	0
	Sum of TotalProjectMorts	395	533	1	4	253	0	1,186
<b>MCN</b>	Sum of NumberCollected	1,706,842	1,098,880	43,803	313,977	255,352		3,418,854
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	1,706,372	1,098,057	43,799	313,728	255,297		3,417,253
	Sum of NumberTrucked	0	0	0	0	0		0
	Sum of SampleMorts	332	62	1	34	8		437
	Sum of FacilityMorts	138	761	3	215	47		1,164
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	470	823	4	249	55		1,601
Total Sum of NumberCollected		2,725,866	4,461,383	136,756	387,290	3,334,407	1	11,045,703
Total Sum of NumberBarged		987,506	3,003,072	92,483	73,234	2,654,402	0	6,810,697
Total Sum of NumberBypassed		1,733,686	1,454,092	44,209	313,783	679,214	109	4,225,093
Total Sum of NumberTrucked		0	0	0	0	0	0	0
Total Sum of SampleMorts		994	264	3	36	75	0	1,372
Total Sum of FacilityMorts		1,077	3,905	61	237	664	0	5,944
Total Sum of ResearchMorts		38	52	0	0	47	0	137
Total Sum of TotalProjectMorts		2,109	4,221	64	273	786	0	7,453

Cumulative Adult Passage at Mainstem Dams Through: 08/02

DAM	ENDDA	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	08/01	83345	33820	158089	7592	141713	20323	93097	26186	81663	12235	87543	17586	456	63	722	237	339	69
TDA	08/01	69202	32311	117087	7175	107368	16911	84859	20590	68375	10131	73829	13722	0	0	0	0	0	0
JDA	08/01	56991	28957	107655	6755	92410	15875	73554	19377	59360	10036	66471	14256	0	0	0	0	0	0
MCN	07/31	52176	22279	102763	4787	83990	13854	72753	14158	61416	4633	61007	10367	0	0	0	0	0	0
IHR	08/01	38017	18611	71957	2905	58986	8558	11203	6241	13733	1377	17144	4199	0	0	0	0	0	0
LMN	08/01	36470	19053	68608	2891	58025	7379	11055	7540	14630	1491	18443	4130	0	0	0	0	0	0
LGS	08/01	35072	19443	68247	3449	53406	8429	9358	7483	13996	1538	17015	4812	0	0	0	0	0	0
LGR	08/01	35031	19940	66366	3525	53382	9851	7797	7161	12476	1610	15539	5417	0	0	0	0	0	0
PRD	07/30	13725	1298	19495	1015	15225	1406	65538	2092	44730	801	49054	1835	0	0	0	0	0	0
WAN	07/30	13715	1661	19804	973	15699	2278	64793	1427	44258	685	42352	1284	0	0	0	0	0	0
RIS	07/28	13345	3100	19881	800	14248	2237	60416	2183	41724	1362	43969	4025	0	0	0	0	0	0
RRH	07/28	6841	2101	6641	459	5306	853	50972	2532	31093	1140	30761	2995	0	0	0	0	0	0
WEL	07/17	7133	2980	5311	700	4618	880	28137	2374	11297	748	13021	708	0	0	0	0	0	0
WFA	07/20	27273	1567	34963	1224	45613	1065	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDA	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.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	08/01	1	0	7	2	0	0	185033	515530	177489	68420	92197	114353	38170	39889	48251	19049	20143	27442
TDA	08/01	0	0	8	0	0	0	161456	409880	146170	36540	56576	55854	21387	26238	25588	5948	2612	5650
JDA	08/01	1	0	9	0	0	0	154943	393885	148894	21508	32951	44751	11347	16010	18590	3492	1845	4288
MCN	07/31	1	0	0	0	0	0	133370	363841	125611	14663	24881	29456	7107	10303	11097	698	159	1299
IHR	08/01	0	0	0	0	0	0	884	447	424	11215	6186	17181	3524	2054	4953	145	98	176
LMN	08/01	0	0	0	0	0	0	1008	472	527	7505	7156	19345	3041	3069	6006	38	32	47
LGS	08/01	0	0	0	0	0	0	965	427	497	4203	5564	14089	2095	3023	4594	13	15	44
LGR	08/01	0	0	0	0	0	0	695	429	599	8695	10264	13164	3858	4528	4476	7	6	6
PRD	07/30	0	0	1	0	0	0	161416	406401	153937	1334	2036	2610	0	0	0	994	151	444
WAN	07/30	0	0	1	0	0	0	153959	447873	195231	1130	2036	2623	0	0	0	245	79	175
RIS	07/28	0	0	0	0	0	0	155158	404256	150110	809	1430	1577	536	794	965	49	6	81
RRH	07/28	0	0	0	0	0	0	127199	355124	126859	547	1566	1307	374	1013	779	20	4	24
WEL	07/17	0	0	0	0	0	0	84525	199715	88402	180	290	242	128	180	143	0	0	0
WFA	07/20	2	0	0	0	0	0	0	0	0	16935	30495	24909	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.