



# Fish Passage Center

## Weekly Report #12 - 28

September 28, 2012

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 1% and 36% of average at individual sub-basins over September. Precipitation above The Dalles has been 22% of average for September 1-24. Over the 2012 water year, precipitation has ranged between 86% and 114% of average.

**Table 1. Summary of September precipitation and cumulative October through September 24, 2012 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.**

Location	Water Year 2012 September 1-24, 2012		Water Year 2012 October 1, 2011 to September 24, 2012	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	0.35	27	28.02	111
Snake River Above Ice Harbor	0.22	26	16.16	91
Columbia Above The Dalles	0.23	22	24.07	104
Kootenai	0.47	36	29.60	114
Clark Fork	0.05	5	17.07	97
Flathead	0.29	22	25.01	107
Pend Oreille/Spokane	0.09	8	34.46	111
Central Washington	0.02	5	7.93	87
Snake River Plain	0.23	34	9.79	86
Salmon/Boise/Payette	0.09	11	18.08	91
Clearwater	0.02	1	31.57	102
SW Washington Cascades/Cowlitz	0.15	6	69.54	98
Willamette Valley	0.04	2	62.29	105

Grand Coulee Reservoir is at 1283.6 feet (9-27-12) and refilled 0.3 feet over the last week. Outflows at Grand Coulee have ranged between 60.1 and 88.1 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2448.9 feet (9-27-12) and has drafted 0.8 feet over the last week. Outflows at Libby Dam have been 8.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3549.5 feet (9-27-12) and has drafted 1.1 feet over the last week. Outflows at Hungry Horse have ranged between 1.9 and 3.0 Kcfs last week.

Dworshak is currently at an elevation of 1519.1 feet (9-27-12) and has drafted 0.6 feet over the last week. Outflows from Dworshak have been 1.6 Kcfs over the past week.

The Brownlee Reservoir is at an elevation of 2045.2 feet (9-26-12) and drafted 0.6 feet over the past week with outflows at Brownlee ranging between 11.3 and 13.5 Kcfs.

### Smolt Monitoring:

Smolt monitoring activities are ongoing at five SMP dams (BON, MCN, LGR, LGS, and LMN). SMP sampling at JDA ended on September 15<sup>th</sup>. SMP sampling at MCN and LMN is expected to end at the end of this month.

Subyearling Chinook were the dominant species of salmonid at all SMP dams over the past week. When compared to last week, subyearling Chinook passage decreased or remained the same at all SMP sites this week.

Subyearling Chinook numbers at BON have continued to decrease over the past two weeks. The daily average passage index for this week was about 230 per day, compared to last week's daily average passage index of about 600 per day. No other species of salmonid was sampled at BON these past two weeks. A very small number of pacific lamprey ammocoetes and macrophthalmia were collected at BON this week. All but three screens have been pulled from the juvenile

bypass system at the second powerhouse. These screens are expected to remain out for the remainder of the 2012 SMP season. The three screens that remain are in units 11, 12, and 18. Pulled screens will likely result in bias collection estimates, as not as many fish will be guided into the juvenile bypass system in the second powerhouse.

Passage of subyearling Chinook at MCN has also continued to decrease over the past two weeks. The daily average passage index for subyearling Chinook at MCN this week was about 900 per day, compared to about 1,900 per day last week. A very small number of sockeye were collected at MCN this week. No other spring migrants were collected at MCN this week. Daily average collections of pacific lamprey macrophthalmia decreased this week, when compared to last week. Daily collections of pacific lamprey macrophthalmia ranged from 5 to 35 per day this week. No pacific lamprey ammocoetes were collected at MCN this week.

After an increase in subyearling Chinook passage last week, passage this week at LGR decreased. The daily average passage index for subyearling Chinook at LGR this week was about 165 per day. Last week's daily average passage index for subyearling Chinook was about 270 per day. Subyearling Chinook at LGR have had elevated descaling rates since about September 5<sup>th</sup>. On September 18<sup>th</sup>, unit priorities were changed to investigate whether Unit 1 operations may have contributed to the high descaling. Results from these changes were inconclusive. On September 19<sup>th</sup>, COE personnel began cleaning the trash racks at Unit 1, followed by trash rack cleaning at Units 2 and 3. It is unclear what degree these cleaning efforts have helped to reduce descaling rates, given that many units have been out of service during this time. However, over the past two days, descaling rates for subyearling Chinook have been in the 1.7-2.4% range, which is closer to historic levels for this time of year. A very small number of yearling Chinook, coho, sockeye/kokanee, and steelhead juveniles were collected at LGR this week. Only one pacific lamprey macrophthalmia was sampled at LGR this week.

Subyearling Chinook passage at LGS this week was very low, with a daily average passage index of just 7 per day, which is very similar to the daily average passage index of 5 per day last week. At LMN, passage of subyearling Chinook decreased this week when compared to last week. The daily

average passage index for subyearling Chinook at LMN this week was about 24 per day, compared to about 54 per day last week. Collections this week also included a small number of sockeye juveniles at LGS and a very small number of yearling Chinook and steelhead at LMN. Daily collections of pacific lamprey macrophthalmia at LGS ranged from 3 to 37 per day. Only one pacific lamprey macrophthalmia was collected at LMN this week. No pacific lamprey ammocoetes were collected at LGS or LMN this week.

#### **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 over the last two weeks. Beginning in early October, approximately 225,000 spring Chinook pre-smolts will be released into tributaries of the Clearwater River. These pre-smolts are unclipped but are tagged with coded-wire-tags. In addition, about 20,000 sockeye pre-smolts are scheduled for release into Redfish (50%) and Pettit (50%) lakes. Both the spring Chinook and sockeye pre-smolts are not expected to out-migrate until spring of 2013.

**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>. Daily counts of fall Chinook at Bonneville Dam ranged from 2,639 to 6,602. The adult fall Chinook count of 324,652 is about 90.2% of the 2011 count of 359,569 and about 87.7% of the 10 year average count of 370,034. The 2012 Bonneville Dam fall Chinook jack count of 106,059 is about 1.5 times greater than the 2011 count of 69,337 and about 2.3 times greater than 10 year average count of 45,913. The 2012 McNary Dam adult fall Chinook count of 143,596

is about 1.2 times greater than the 2011 count and about 1.4 times larger than the 10 year average. The 2012 McNary Dam 2012 jack count of 37,753 is about 1.3 times greater than the 2011 count and 1.76 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, for instance between Ice Harbor and Lower Granite, and then resume their migration upstream the following year. The summer steelhead run is delineated according to dates of passage past Bonneville Dam and is made up of two components. A-run steelhead are considered those that pass Bonneville Dam from the first of June through August 25th and B-run steelhead pass Bonneville from August 26th through October. The 2012 B-run adult steelhead count at Bonneville of 59,646 is about 63.8% of the 2011 count of 93,402 and 52% of the 10 year average count of 114,514.

The Bonneville Dam 2012 steelhead count of 218,586 is about 61.4% of the 2011 count of 355,844 and about 59.6% of the 10 year average count of 366,868. The 2012 Bonneville wild adult steelhead count of 80,343 is about 64.2% of the 2011 count of 125,080 and about 71.7% of the 10 year average count of 111,996. In the Snake River, this year's Lower Granite steelhead count of 51,400 is about 46% of the 2011 count of 111,762 and 55.7% of the 10 year average of 92,275. The 2012 Lower Granite wild adult steelhead count of 16,204 is about 49.7% of the 2011 count of 32,555 and 66.3% of the 10 year average count of 24,436. At Willamette Falls Dam, the 2012 count for steelhead was 29,101, as of September 15th. This year's steelhead count is about 1.06 times greater than the 2011 count of 27,528 and 1.06 times greater than the 10 year average count of 27,474.

The 2012 accumulated total adult sockeye count at Bonneville Dam of 515,673, as of 9/27/2012, is about 2.77 times greater than the 2011 count of 185,796 and about 3.94 times greater than the 10 year average count of 130,981. The 2012 McNary Dam adult sockeye count of 364,147 is about 3.2 times greater than the 2011 count of 113,950 and 3.9 times greater than the 10 year average count of 93,284. Two of the major spawning sites for sockeye in the Upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). In the Snake River at

Ice Harbor Dam, the 2012 adult sockeye count of 453 is 39.7% of the 2011 count of 1,141, while being 1.16 times greater than the 10 year average count of 390. The Lower Granite Dam 2012 adult sockeye count of 469 is about 31.2% of the 2011 count of 1,501 and about 81.8% of the 10 year average count of 573.

The 2012 adult coho Bonneville Dam count of 39,313 adults is about 34.5% of the 2011 count of 113,957 and about 50.9% of the 10 year average count of 77,213. The 2012 Bonneville Dam coho jack count of 2,323 is about 74% of the 2011 count of 3,139 and about 52.8% of the 10 year average count of 4,395. As of September 27th at Bonneville Dam, the adult shad count was 2,432,394. This year's shad count is about 2.56 times greater than the 2011 count of 948,070, while being 82.8% of the 10 year average count of 2,936,990.

**Hatchery Releases Last Two Weeks**

No releases to report.

### Hatchery Releases Next Two Weeks

Hatchery Release Summary									
From:	9/28/2012		to		10/11/2012				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2013	10,000	10-06-12	10-06-12	Pettit Lake	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2013	10,000	10-06-12	10-06-12	Redfish Lake	Salmon River (ID)
<b>Idaho Dept. of Fish and Game Total</b>					<b>20,000</b>				
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	SP	2013	75,000	10-02-12	10-16-12	Newsome Creek	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	SP	2013	150,000	10-03-12	10-17-12	Lolo Creek	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>225,000</b>				
<b>Grand Total</b>					<b>245,000</b>				

CH = Chinook, ST = Steelhead, CO = Coho, SO = Sockeye, CT = Cutthroat Trout, CM = Chum

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
09/14/2012	90.0	0.1	90.3	0.0	92.0	0.0	93.4	0.0	97.1	0.0	104.6	4.0	103.5	7.3
09/15/2012	68.5	0.1	71.4	0.0	71.9	0.0	74.8	0.0	78.2	0.0	82.8	2.1	80.3	7.7
09/16/2012	49.4	0.1	53.5	0.0	55.5	0.0	57.3	0.0	61.2	0.0	72.1	2.0	73.1	7.2
09/17/2012	90.2	0.1	88.3	0.0	87.7	0.0	86.2	0.0	87.9	0.0	89.6	1.9	85.5	6.7
09/18/2012	86.8	0.1	91.9	0.0	90.4	0.0	88.6	0.0	91.5	0.0	110.9	1.7	105.8	7.4
09/19/2012	85.5	0.1	76.3	0.0	76.6	0.0	80.3	0.2	81.0	0.0	87.4	1.4	90.6	8.2
09/20/2012	87.5	0.1	98.4	0.0	95.8	0.0	94.5	0.0	100.1	0.0	88.1	2.0	78.6	7.0
09/21/2012	85.6	0.1	83.6	0.0	85.1	0.0	86.8	0.0	89.4	0.0	96.8	2.0	94.9	7.4
09/22/2012	67.8	0.1	64.3	0.0	65.3	0.0	66.8	0.0	68.8	0.0	75.3	2.0	73.8	7.4
09/23/2012	60.1	0.1	64.5	0.0	66.0	0.0	63.1	0.0	63.0	0.0	79.3	1.8	80.9	7.3
09/24/2012	87.4	0.1	83.0	0.0	83.1	0.0	87.5	0.0	90.8	0.0	91.1	1.7	87.7	7.0
09/25/2012	61.6	0.1	60.2	0.0	70.0	0.0	75.9	0.0	78.6	0.0	95.5	1.7	94.1	6.7
09/26/2012	75.3	0.1	80.2	0.0	77.7	0.0	76.9	0.0	78.6	0.0	91.4	1.2	90.2	6.2
09/27/2012	88.1	0.1	87.7	0.0	85.2	0.0	81.4	0.0	82.9	0.0	77.3	1.4	74.0	6.7

**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
09/14/2012	4.8	0.0	9.6	12.6	25.5	0.0	25.5	0.0	23.2	0.0	23.0	0.0
09/15/2012	4.8	0.0	10.8	14.2	23.8	0.0	18.9	0.0	18.6	0.0	17.1	0.0
09/16/2012	2.4	0.0	10.6	13.3	22.9	0.0	22.1	0.0	23.3	0.0	22.9	0.0
09/17/2012	2.4	0.0	10.4	15.9	22.5	0.0	26.7	0.0	28.5	0.0	29.3	0.0
09/18/2012	2.4	0.0	9.4	16.2	22.9	0.0	21.3	0.0	22.5	0.0	22.2	0.0
09/19/2012	2.4	0.0	10.5	11.9	23.5	0.0	21.1	0.0	22.5	0.0	23.7	0.0
09/20/2012	1.6	0.0	10.5	12.7	21.7	0.0	21.4	0.0	21.3	0.0	20.9	0.0
09/21/2012	1.6	0.0	10.4	12.3	20.1	0.0	15.3	0.0	16.0	0.0	14.5	0.0
09/22/2012	1.6	0.0	11.0	12.3	18.1	0.0	14.7	0.0	14.7	0.0	11.9	0.0
09/23/2012	1.6	0.0	10.2	10.5	20.6	0.0	20.3	0.0	21.0	0.0	23.2	0.0
09/24/2012	1.6	0.0	10.9	13.0	17.0	0.0	17.1	0.0	17.2	0.0	15.8	0.0
09/25/2012	1.6	0.0	11.0	11.7	16.8	0.0	16.4	0.0	19.7	0.0	19.4	0.0
09/26/2012	1.6	0.0	11.2	11.7	17.5	0.2	17.0	0.0	16.3	0.0	14.7	0.0
09/27/2012	1.6	0.0	---	---	15.5	0.0	13.7	0.0	12.7	0.0	10.0	0.0

**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
09/14/2012	115.4	12.0	103.3	1.0	103.9	0.0	103.3	1.3	36.5	53.1
09/15/2012	106.9	9.6	109.4	0.9	106.6	0.0	112.9	1.3	44.2	55.0
09/16/2012	101.2	0.0	101.9	1.0	102.6	0.0	118.6	1.3	82.4	27.4
09/17/2012	109.4	8.6	103.8	0.9	104.7	0.0	114.1	1.2	82.6	22.9
09/18/2012	127.0	18.4	118.4	0.9	116.5	0.0	119.2	1.2	88.1	22.5
09/19/2012	128.9	26.8	130.2	1.0	125.9	0.0	134.8	1.2	94.4	31.7
09/20/2012	108.8	4.0	103.5	0.9	103.8	0.0	112.1	1.2	87.4	16.1
09/21/2012	114.4	0.1	112.3	0.9	112.9	0.0	109.6	1.3	95.0	5.9
09/22/2012	96.0	0.0	95.4	0.9	94.2	0.0	104.3	1.3	85.8	9.8
09/23/2012	96.6	0.0	99.2	0.9	101.4	0.0	113.0	1.2	87.1	17.3
09/24/2012	103.2	0.0	93.5	2.8	89.2	0.0	101.8	1.0	74.0	19.4
09/25/2012	102.1	0.0	102.6	0.9	102.4	0.0	100.4	0.6	81.5	11.1
09/26/2012	101.8	0.0	102.4	1.5	101.0	0.0	108.8	0.6	80.7	20.9
09/27/2012	101.4	0.0	88.7	0.9	87.3	0.0	94.6	0.6	77.5	10.0

## 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>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
9/14	101.5	102.0	102.3	24	105.9	106.6	107.2	21	104.5	104.6	104.7	24	106.7	107.1	107.6	21	107.9	108.3	108.6	24
9/15	101.4	101.9	102.3	24	105.3	105.5	105.9	22	104.4	104.5	104.7	24	106.1	106.5	106.7	22	107.9	108.2	108.7	24
9/16	101.5	101.9	102.2	24	104.4	104.9	105.6	24	103.8	103.9	104.1	24	105.7	106.2	106.8	24	107.4	107.8	108.5	24
9/17	101.8	102.3	102.6	24	104.1	104.5	105.6	21	105.9	107.1	107.4	24	105.7	106.2	107.1	21	106.6	106.8	107.0	24
9/18	101.9	102.3	102.6	24	104.2	104.8	105.2	23	105.1	105.6	106.2	24	105.8	106.3	106.9	23	106.8	107.2	107.6	24
9/19	101.7	102.3	102.6	24	104.8	105.0	105.5	21	104.3	104.7	105.3	23	105.7	106.3	107.1	21	107.2	107.8	108.1	24
9/20	101.7	102.2	102.5	24	104.5	105.0	105.5	23	104.3	104.6	105.6	19	105.5	105.8	106.6	23	107.1	107.5	107.9	24
9/21	102.2	102.9	103.6	24	104.7	105.3	105.5	24	104.5	105.0	105.6	23	105.3	105.9	106.5	24	106.5	106.8	107.1	24
9/22	102.6	103.0	103.2	24	104.4	104.4	104.8	14	104.3	104.7	105.2	24	105.0	105.0	105.6	14	106.3	106.7	106.9	24
9/23	102.5	102.9	103.2	24	---	---	---	0	104.8	105.5	106.0	24	---	---	---	0	105.8	106.1	106.4	24
9/24	102.8	102.8	102.8	2	---	---	---	0	105.1	105.5	106.3	24	---	---	---	0	105.8	106.2	106.4	24
9/25	103.3	103.6	104.0	19	104.9	105.0	105.4	16	104.3	104.8	106.7	24	103.5	103.8	106.1	16	105.6	105.8	106.1	24
9/26	102.9	103.1	103.5	23	104.8	105.3	106.2	20	104.3	104.7	105.5	23	102.1	102.4	103.1	20	105.6	105.9	106.1	24
9/27	102.6	102.8	103.1	23	104.7	105.3	105.7	22	104.9	105.3	105.9	24	102.0	102.8	103.7	22	105.3	105.6	105.9	24

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

Date	<u>Chief J. Dnst</u>			#	<u>Wells</u>			#	<u>Wells Dwnstrm</u>			#	<u>Rocky Reach</u>			#	<u>Rocky R. Tlwr</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
9/14	106.7	107.3	107.7	24	107.0	107.0	107.9	8	105.4	105.4	106.0	10	104.6	105.1	105.4	24	104.1	104.4	104.7	24
9/15	106.8	107.3	107.8	24	106.9	106.9	107.6	7	105.2	105.2	105.7	7	105.1	105.4	105.5	24	104.2	104.6	104.9	24
9/16	106.6	107.3	107.9	24	107.2	107.2	108.1	12	105.2	105.2	105.8	12	105.2	105.6	106.6	24	104.1	104.5	105.0	24
9/17	105.6	106.0	106.2	24	107.0	107.0	107.9	11	104.9	104.9	105.7	10	105.5	105.7	105.9	24	104.3	104.9	105.0	24
9/18	105.9	106.3	106.5	24	107.4	107.4	108.3	9	105.4	105.4	106.1	9	105.8	106.1	106.3	24	104.8	105.1	105.4	24
9/19	106.5	107.1	107.4	24	106.3	106.3	106.8	11	104.8	104.8	105.0	5	105.6	105.9	106.1	24	104.8	105.1	105.4	24
9/20	106.6	107.3	108.2	24	106.3	106.3	106.8	11	---	---	---	0	105.5	105.8	106.1	24	105.0	105.2	105.5	24
9/21	105.7	106.1	106.4	24	107.0	107.0	107.9	13	---	---	---	0	105.5	105.8	106.0	23	104.8	105.1	105.4	23
9/22	105.6	106.0	106.4	24	106.6	106.6	106.9	11	---	---	---	0	105.2	105.4	105.7	24	104.2	104.6	104.9	24
9/23	105.1	105.5	106.2	24	106.0	105.9	106.5	8	---	---	---	0	104.8	105.0	105.1	24	103.8	104.1	104.3	24
9/24	104.8	105.4	105.8	24	105.7	105.8	106.5	13	---	---	---	0	105.1	105.4	105.5	24	104.4	104.8	104.9	24
9/25	104.9	105.4	106.0	24	105.5	105.5	105.7	2	---	---	---	0	104.8	105.0	105.3	24	104.1	104.4	104.5	24
9/26	104.7	105.2	105.6	24	---	---	---	0	---	---	---	0	104.4	104.7	105.1	24	103.2	104.1	104.3	24
9/27	104.3	104.6	104.9	24	---	---	---	0	---	---	---	0	104.4	104.8	105.0	24	103.7	104.2	104.5	24

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

Date	<u>Rock Island</u>			#	<u>Rock I. Tlwr</u>			#	<u>Wanapum</u>			#	<u>Wanapum Tlwr</u>			#	<u>Priest Rapids</u>			#
	<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>		<u>24 h</u>	<u>12 h</u>	<u>High</u>	
	<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>			<u>Avg</u>	<u>Avg</u>		
9/14	104.0	104.3	104.6	24	104.1	104.5	104.8	24	103.2	104.2	105.0	24	105.6	106.8	120.8	24	102.4	103.3	104.6	24
9/15	104.1	104.3	104.4	24	104.3	104.4	104.6	24	103.2	103.7	104.1	24	104.7	105.0	105.3	24	103.4	103.7	104.2	24
9/16	104.1	104.5	104.9	24	103.4	104.2	104.4	24	102.1	102.9	103.3	24	103.7	104.1	104.2	24	102.1	102.6	102.8	24
9/17	104.9	105.3	105.6	24	103.4	105.5	105.8	24	102.0	103.0	103.4	24	103.9	104.5	104.8	24	102.0	102.3	102.6	24
9/18	104.9	105.1	105.3	24	103.6	105.1	105.5	24	103.2	103.8	104.0	24	104.4	104.8	105.0	24	102.0	102.4	102.9	24
9/19	104.8	105.0	105.1	24	100.7	101.6	104.5	24	102.2	102.8	103.6	24	104.3	104.7	105.8	24	101.6	101.8	101.9	24
9/20	104.7	104.9	105.1	24	104.0	105.0	105.4	24	103.8	105.7	106.5	24	104.2	104.8	105.1	24	102.2	103.8	104.6	24
9/21	104.9	105.1	105.4	23	104.5	105.3	105.5	23	104.4	104.4	105.3	11	104.8	105.2	105.7	24	103.7	104.3	104.7	24
9/22	104.6	104.8	105.2	24	104.2	104.9	105.4	24	---	---	---	0	104.4	104.7	105.0	24	102.8	103.1	103.7	24
9/23	104.0	104.1	104.3	24	102.3	103.9	104.4	24	---	---	---	0	103.7	103.8	104.0	24	102.1	102.6	103.7	24
9/24	104.3	104.6	105.0	24	103.3	104.9	105.4	24	---	---	---	0	104.1	104.7	104.9	24	103.0	103.7	104.3	24
9/25	104.3	104.5	104.8	24	102.4	104.1	105.1	24	---	---	---	0	103.5	103.8	104.5	24	103.1	103.6	104.0	24
9/26	103.6	104.0	104.1	24	99.9	100.0	100.1	24	105.0	105.4	106.2	16	103.5	104.1	104.7	24	102.3	102.8	103.5	24
9/27	103.8	104.2	104.4	24	100.0	100.2	101.6	24	104.7	105.7	106.8	24	104.0	105.0	106.4	24	103.3	103.9	104.6	24

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

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

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clwrtr-Peck</u>			<u>Anatone</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<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>				
9/14	105.3	105.9	107.5	24	103.4	104.1	104.5	24	99.7	100.1	100.7	24	98.9	100.0	101.3	22	101.8	102.9	104.0	24
9/15	106.5	107.1	108.2	24	103.6	104.1	104.4	24	99.7	100.1	100.6	24	98.8	99.7	101.1	24	101.4	102.2	103.3	24
9/16	105.1	105.4	105.7	24	103.7	104.5	104.9	24	99.9	100.5	101.3	24	98.3	98.5	99.8	13	101.4	102.3	103.3	24
9/17	105.0	105.7	105.9	24	103.7	104.3	104.7	24	99.9	100.5	101.3	24	97.9	97.9	99.1	11	101.4	102.4	103.5	24
9/18	105.4	105.9	106.3	24	103.8	104.6	105.1	24	99.9	100.5	101.3	24	97.2	97.2	98.2	5	101.7	102.6	103.8	24
9/19	105.4	105.8	106.2	24	103.7	104.5	105.1	24	99.7	100.3	101.0	24	---	---	---	0	101.1	101.3	103.2	14
9/20	105.5	106.0	106.3	24	103.6	104.3	104.6	24	103.3	104.3	105.5	22	---	---	---	0	---	---	---	0
9/21	105.8	106.2	106.6	24	103.7	104.5	105.0	24	103.9	104.6	105.4	24	---	---	---	0	---	---	---	0
9/22	105.3	105.6	106.0	24	103.4	104.0	104.4	24	104.0	104.6	105.6	24	---	---	---	0	---	---	---	0
9/23	104.7	105.0	105.3	24	102.4	102.9	103.3	24	103.9	104.5	105.3	24	---	---	---	0	---	---	---	0
9/24	105.1	105.7	106.1	24	103.0	103.9	104.4	24	103.9	104.7	105.6	24	---	---	---	0	---	---	---	0
9/25	104.9	105.2	105.5	24	103.6	104.2	104.7	24	104.1	104.8	105.8	24	---	---	---	0	---	---	---	0
9/26	104.4	104.8	105.1	24	103.2	103.8	104.1	24	104.2	105.1	105.9	24	---	---	---	0	---	---	---	0
9/27	104.8	105.4	105.8	24	103.2	104.0	104.5	24	105.2	106.0	107.3	24	---	---	---	0	---	---	---	0

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

Date	<u>Clwrtr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<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>				
9/14	101.0	102.5	103.9	23	100.1	100.6	101.0	24	99.1	99.9	100.2	24	---	---	---	0	97.9	98.4	98.8	24
9/15	101.2	102.8	104.4	23	99.6	99.8	100.0	24	98.8	99.5	100.1	24	---	---	---	0	97.5	98.1	98.7	24
9/16	101.4	103.3	105.1	23	98.2	98.4	98.7	24	97.1	97.5	98.0	24	---	---	---	0	96.8	97.3	97.6	24
9/17	100.8	102.9	104.8	24	97.9	98.5	98.9	24	96.9	97.8	98.1	24	---	---	---	0	96.9	97.5	98.1	24
9/18	100.8	102.9	104.8	24	99.6	100.6	103.1	24	98.3	99.1	99.4	24	---	---	---	0	97.1	97.9	98.6	24
9/19	98.6	98.6	100.8	12	102.1	102.6	103.0	24	99.7	100.3	101.0	24	---	---	---	0	99.9	102.3	107.3	24
9/20	---	---	---	0	101.9	102.7	103.4	23	100.3	100.8	101.2	24	---	---	---	0	99.8	101.7	108.0	24
9/21	---	---	---	0	101.8	102.0	102.2	24	100.4	101.0	101.3	24	---	---	---	0	98.6	99.7	102.2	24
9/22	---	---	---	0	100.9	101.2	101.5	24	99.7	100.1	100.6	24	---	---	---	0	95.9	96.3	96.9	24
9/23	---	---	---	0	99.7	99.9	100.2	24	98.5	98.6	99.0	24	---	---	---	0	95.1	95.6	96.1	24
9/24	---	---	---	0	99.3	99.6	99.7	24	98.9	99.5	100.0	24	---	---	---	0	96.5	98.1	102.1	24
9/25	---	---	---	0	99.4	99.6	99.6	24	99.2	99.7	100.4	24	---	---	---	0	97.7	99.3	103.7	24
9/26	---	---	---	0	99.4	99.7	100.0	24	98.5	99.5	101.9	24	---	---	---	0	99.9	103.5	108.2	24
9/27	---	---	---	0	99.3	100.0	102.2	24	99.6	100.9	101.8	24	---	---	---	0	99.4	101.2	103.6	24

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
9/14	99.6	99.7	100.0	24	99.2	99.8	100.0	24	101.2	101.4	101.5	24	101.6	102.3	102.7	24	---	---	---	0
9/15	99.1	99.2	99.4	24	99.1	99.7	101.6	24	101.3	101.4	101.6	24	101.9	102.8	103.5	24	---	---	---	0
9/16	99.2	99.5	99.9	24	99.2	100.0	101.3	24	101.1	101.4	101.5	24	101.8	102.7	103.3	24	---	---	---	0
9/17	98.9	99.0	99.2	24	99.0	99.6	100.2	24	101.4	101.5	101.7	24	102.0	102.8	103.1	24	---	---	---	0
9/18	99.0	99.5	99.9	24	98.9	99.8	100.5	24	102.3	102.7	103.0	24	102.4	103.4	104.1	24	---	---	---	0
9/19	98.7	98.9	99.1	24	98.5	99.5	100.4	24	101.6	102.1	102.3	24	102.2	102.8	103.2	24	---	---	---	0
9/20	97.8	98.0	98.3	23	97.8	98.7	99.4	24	100.2	100.4	100.9	24	101.3	101.7	102.2	24	---	---	---	0
9/21	97.7	98.2	98.7	24	97.4	97.9	98.3	24	99.8	100.0	100.1	24	101.2	102.0	102.7	24	---	---	---	0
9/22	95.8	96.1	96.4	24	97.2	97.8	98.9	24	99.5	99.6	99.7	24	100.9	101.4	102.0	24	---	---	---	0
9/23	96.0	96.3	96.5	24	97.1	97.5	98.1	24	99.4	99.7	99.9	24	100.5	100.8	101.1	24	---	---	---	0
9/24	97.0	97.4	97.9	24	97.5	98.1	98.6	24	100.1	100.4	100.7	24	100.5	101.4	102.2	24	---	---	---	0
9/25	97.0	97.2	97.3	24	99.3	101.5	139.0	24	99.7	99.9	100.2	24	100.4	100.9	101.2	24	---	---	---	0
9/26	96.7	96.7	96.9	13	119.2	139.2	139.8	24	98.9	99.0	99.2	24	100.1	100.9	101.2	24	---	---	---	0
9/27	---	---	---	0	98.9	99.4	99.8	24	98.6	98.8	99.1	24	100.1	101.3	102.0	24	---	---	---	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	Avg	AVG	High
9/14	101.1	101.4	101.8	24	102.1	103.9	109.7	24	101.6	102.0	102.5	24	101.5	102.2	102.6	24	101.4	101.7	101.9	24		
9/15	101.5	101.9	102.6	24	104.7	107.2	110.1	24	102.0	102.2	102.3	24	101.8	102.2	102.6	24	101.4	101.6	101.7	24		
9/16	102.0	102.5	103.4	24	101.6	101.9	102.0	24	101.4	101.5	101.7	24	101.0	101.4	101.7	24	101.1	101.3	101.5	24		
9/17	102.9	103.6	104.4	24	104.4	105.8	109.0	24	101.1	101.4	102.0	24	101.0	101.4	101.8	24	101.1	101.3	101.6	24		
9/18	103.0	103.5	104.4	24	105.8	107.9	110.1	24	100.8	100.8	101.2	13	101.3	102.1	106.0	24	101.2	101.4	101.6	24		
9/19	103.5	104.3	105.1	24	108.2	110.1	110.4	24	---	---	---	0	101.7	102.2	102.5	24	101.0	101.0	101.2	7		
9/20	103.4	104.0	105.1	24	105.3	106.6	110.5	22	---	---	---	0	101.9	102.4	103.0	23	---	---	---	0		
9/21	103.0	103.1	103.5	24	103.2	103.3	103.5	24	---	---	---	0	102.0	102.4	103.0	24	---	---	---	0		
9/22	102.7	102.8	103.0	24	102.6	102.8	102.9	24	---	---	---	0	101.6	102.1	102.6	24	---	---	---	0		
9/23	102.5	102.6	102.8	24	102.2	102.3	102.4	24	---	---	---	0	101.4	101.7	101.8	24	---	---	---	0		
9/24	102.5	102.6	102.7	24	102.3	102.5	102.6	24	---	---	---	0	101.5	102.1	104.5	24	---	---	---	0		
9/25	102.2	102.3	102.4	24	102.2	102.3	102.4	24	---	---	---	0	101.1	101.3	101.7	24	---	---	---	0		
9/26	102.0	102.2	102.3	24	101.8	101.9	102.0	24	---	---	---	0	101.0	101.2	101.6	21	---	---	---	0		
9/27	102.0	102.1	102.2	24	101.7	101.9	102.1	24	---	---	---	0	101.0	101.5	102.1	24	---	---	---	0		

### 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	Avg	AVG	High
9/14	101.9	102.2	102.6	24	101.2	101.5	101.7	24	106.1	107.6	108.2	24	---	---	---	0	105.2	105.9	106.8	24		
9/15	101.9	102.1	102.4	24	101.8	101.9	102.1	24	106.9	107.7	108.5	24	---	---	---	0	106.5	107.1	108.8	20		
9/16	101.6	101.9	102.4	24	101.7	101.9	102.1	24	104.2	105.2	107.6	24	---	---	---	0	104.6	105.5	109.2	24		
9/17	101.6	102.1	102.6	24	101.5	101.7	101.8	24	103.2	103.4	103.6	24	---	---	---	0	104.6	105.4	106.3	20		
9/18	101.8	102.2	102.4	24	101.6	101.9	102.1	23	103.0	103.5	104.6	24	---	---	---	0	104.2	105.0	105.6	21		
9/19	102.0	102.7	103.2	24	101.8	101.8	102.0	11	103.2	103.3	103.4	24	---	---	---	0	104.2	104.3	105.8	13		
9/20	102.5	103.0	103.3	23	---	---	---	0	103.0	103.2	103.5	22	---	---	---	0	---	---	---	0		
9/21	102.6	102.7	102.9	24	---	---	---	0	102.3	102.5	102.9	24	---	---	---	0	---	---	---	0		
9/22	102.2	102.5	102.8	24	---	---	---	0	102.5	102.7	103.3	24	---	---	---	0	---	---	---	0		
9/23	101.8	102.1	102.8	24	---	---	---	0	102.2	102.4	102.8	24	---	---	---	0	---	---	---	0		
9/24	102.1	102.5	102.9	24	---	---	---	0	101.9	102.1	102.4	24	---	---	---	0	---	---	---	0		
9/25	102.2	102.6	103.0	24	---	---	---	0	101.5	101.7	101.8	24	---	---	---	0	---	---	---	0		
9/26	101.6	101.8	102.1	21	---	---	---	0	102.4	102.8	103.1	21	---	---	---	0	---	---	---	0		
9/27	101.9	102.4	102.6	24	---	---	---	0	102.8	103.2	103.7	24	---	---	---	0	---	---	---	0		

Two-Week Summary of Passage Indices

COMBINED YEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
09/14/2012	*	---	---	---	0	0	0	---	0	0	0	
09/15/2012		---	---	---	0	0	0	---	0	0	0	
09/16/2012	*	---	---	---	0	0	0	---	0	---	0	
09/17/2012	*	---	---	---	0	0	0	---	0	---	0	
09/18/2012	*	---	---	---	0	0	0	---	0	---	0	
09/19/2012	*	---	---	---	0	0	0	---	0	---	0	
09/20/2012	*	---	---	---	0	0	1	---	0	---	0	
09/21/2012	*	---	---	---	0	0	1	---	0	---	0	
09/22/2012	*	---	---	---	0	0	0	---	0	---	0	
09/23/2012	*	---	---	---	1	0	0	---	0	---	0	
09/24/2012	*	---	---	---	0	0	0	---	0	---	0	
09/25/2012	*	---	---	---	0	0	0	---	0	---	0	
09/26/2012	*	---	---	---	0	0	0	---	0	---	0	
09/27/2012	*	---	---	---	0	0	0	---	0	---	0	
09/28/2012	*	---	---	---	---	---	---	---	---	---	0	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</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>14</b>	<b>0</b>	<b>14</b>	<b>2</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>YTD</b>		<b>58,098</b>	<b>10,922</b>	<b>26,417</b>	<b>13,494</b>	<b>4,042,663</b>	<b>2,266,021</b>	<b>754,597</b>	<b>25,797</b>	<b>2,179,425</b>	<b>4,290,562</b>	<b>2,538,937</b>

COMBINED SUBYEARLING CHINOOK												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
09/14/2012	*	---	---	---	209	2	76	---	3,250	1,141	550	
09/15/2012		---	---	---	215	6	66	---	2,286	1,150	490	
09/16/2012	*	---	---	---	159	10	32	---	1,750	---	1,118	
09/17/2012	*	---	---	---	151	7	34	---	1,406	---	870	
09/18/2012	*	---	---	---	165	4	22	---	1,874	---	576	
09/19/2012	*	---	---	---	398	1	71	---	1,491	---	262	
09/20/2012	*	---	---	---	588	4	76	---	1,278	---	426	
09/21/2012	*	---	---	---	271	5	74	---	1,169	---	270	
09/22/2012	*	---	---	---	160	12	46	---	1,070	---	0	
09/23/2012	*	---	---	---	109	5	17	---	735	---	386	
09/24/2012	*	---	---	---	143	15	10	---	725	---	401	
09/25/2012	*	---	---	---	171	1	9	---	845	---	167	
09/26/2012	*	---	---	---	173	6	4	---	870	---	214	
09/27/2012	*	---	---	---	130	2	8	---	1,000	---	171	
09/28/2012	*	---	---	---	---	---	---	---	---	---	262	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>3,042</b>	<b>80</b>	<b>545</b>	<b>0</b>	<b>19,749</b>	<b>2,291</b>	<b>6,163</b>	
<b># Days:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>15</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>6</b>	<b>39</b>	<b>0</b>	<b>1,411</b>	<b>1,146</b>	<b>411</b>	
<b>YTD</b>		<b>0</b>	<b>5</b>	<b>67</b>	<b>327</b>	<b>1,067,673</b>	<b>1,049,278</b>	<b>378,067</b>	<b>28,725</b>	<b>3,298,702</b>	<b>3,974,621</b>	<b>5,579,988</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)
09/14/2012 *	---	---	---	---	1	0	0	---	0	0	0
09/15/2012	---	---	---	---	1	0	0	---	0	0	0
09/16/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/17/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/18/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/19/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/20/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/21/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/22/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/23/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/24/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/25/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/26/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/27/2012 *	---	---	---	---	3	0	0	---	0	---	0
09/28/2012 *	---	---	---	---	---	---	---	---	---	---	0
<hr/>											
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</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>14</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>15</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>0</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>69,832</b>	<b>78,639</b>	<b>19,964</b>	<b>49,618</b>	<b>145,764</b>	<b>287,512</b>	<b>689,839</b>

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
09/14/2012 *	---	---	---	---	1	0	0	---	0	0	0
09/15/2012	---	---	---	---	0	0	0	---	0	0	0
09/16/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/17/2012 *	---	---	---	---	0	0	1	---	0	---	0
09/18/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/19/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/20/2012 *	---	---	---	---	2	0	0	---	0	---	0
09/21/2012 *	---	---	---	---	2	0	0	---	0	---	0
09/22/2012 *	---	---	---	---	2	0	0	---	0	---	0
09/23/2012 *	---	---	---	---	1	0	0	---	0	---	0
09/24/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/25/2012 *	---	---	---	---	0	0	0	---	0	---	0
09/26/2012 *	---	---	---	---	0	0	1	---	0	---	0
09/27/2012 *	---	---	---	---	3	0	0	---	0	---	0
09/28/2012 *	---	---	---	---	---	---	---	---	---	---	0
<hr/>											
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>2</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>14</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>15</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>0</b>
<b>YTD</b>	<b>2,722</b>	<b>21,616</b>	<b>2,065</b>	<b>2,311</b>	<b>3,539,017</b>	<b>1,490,314</b>	<b>611,064</b>	<b>17,329</b>	<b>543,078</b>	<b>2,834,971</b>	<b>296,204</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)	
09/14/2012	*	---	---	---	---	6	1	0	---	0	0	
09/15/2012		---	---	---	---	8	2	0	---	0	0	
09/16/2012	*	---	---	---	---	4	3	0	---	0	---	
09/17/2012	*	---	---	---	---	7	1	0	---	5	---	
09/18/2012	*	---	---	---	---	4	1	0	---	5	---	
09/19/2012	*	---	---	---	---	2	3	0	---	12	---	
09/20/2012	*	---	---	---	---	1	0	2	---	0	---	
09/21/2012	*	---	---	---	---	1	1	0	---	5	---	
09/22/2012	*	---	---	---	---	1	3	0	---	0	---	
09/23/2012	*	---	---	---	---	3	2	0	---	0	---	
09/24/2012	*	---	---	---	---	8	2	0	---	0	---	
09/25/2012	*	---	---	---	---	3	0	0	---	0	---	
09/26/2012	*	---	---	---	---	3	0	0	---	0	---	
09/27/2012	*	---	---	---	---	0	1	0	---	0	---	
09/28/2012	*	---	---	---	---	---	---	---	---	---	0	
<hr/>												
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>51</b>	<b>20</b>	<b>2</b>	<b>0</b>	<b>27</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>14</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>15</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>YTD</b>		<b>5</b>	<b>0</b>	<b>0</b>	<b>475</b>	<b>43,465</b>	<b>37,243</b>	<b>18,251</b>	<b>46,856</b>	<b>1,135,873</b>	<b>851,019</b>	<b>778,777</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)	
09/14/2012	*	---	---	---	---	1	3	0	---	50	29	0
09/15/2012		---	---	---	---	0	4	1	---	40	10	4
09/16/2012	*	---	---	---	---	2	10	0	---	90	---	0
09/17/2012	*	---	---	---	---	0	2	0	---	20	---	0
09/18/2012	*	---	---	---	---	1	2	0	---	35	---	0
09/19/2012	*	---	---	---	---	0	3	0	---	20	---	0
09/20/2012	*	---	---	---	---	0	1	0	---	15	---	0
09/21/2012	*	---	---	---	---	0	3	0	---	35	---	0
09/22/2012	*	---	---	---	---	0	7	0	---	10	---	0
09/23/2012	*	---	---	---	---	0	9	1	---	15	---	0
09/24/2012	*	---	---	---	---	0	37	0	---	15	---	0
09/25/2012	*	---	---	---	---	0	3	0	---	5	---	4
09/26/2012	*	---	---	---	---	1	11	0	---	15	---	4
09/27/2012	*	---	---	---	---	0	3	0	---	5	---	0
09/28/2012	*	---	---	---	---	---	---	---	---	---	---	0
<hr/>												
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>98</b>	<b>2</b>	<b>0</b>	<b>370</b>	<b>39</b>	<b>12</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>0</b>	<b>14</b>	<b>2</b>	<b>15</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>20</b>	<b>1</b>
<b>YTD</b>		<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,002</b>	<b>6,592</b>	<b>2,212</b>	<b>135</b>	<b>121,932</b>	<b>502,951</b>	<b>31,915</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.

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

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

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

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

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

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

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

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

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

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

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

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

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

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.

RIS data collected for the FPC by Chelan Co. PUD.

LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.

LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.

IMN data collected for the FPC by the Nez Perce Tribe.

WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

### Two Week Transportation Summary

Source: Fish Passage Center

Updated:

9/28/12 9:42 AM

09/14/12 TO 09/28/12

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	3,041	1	7	14	51	3,114
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,208	0	0	0	1	1,209
	Sum of Numbertrucked	1,806	1	7	13	40	1,867
	Sum of SampleMorts	26	0	0	1	10	37
	Sum of FacilityMorts	0	0	0	0	0	0
	Sum of ResearchMorts	1	0	0	0	0	1
	Sum of TotalProjectMorts	27	0	0	1	10	38
<b>LGS</b>	Sum of NumberCollected	80				20	100
	Sum of NumberBarged	0				0	0
	Sum of NumberBypassed	0				0	0
	Sum of Numbertrucked	77				20	97
	Sum of SampleMorts	1				0	1
	Sum of FacilityMorts	2				0	2
	Sum of ResearchMorts	0				0	0
	Sum of TotalProjectMorts	3				0	3
<b>LMN</b>	Sum of NumberCollected	545	2			2	551
	Sum of NumberBarged	0	0			0	0
	Sum of NumberBypassed	0	0			1	1
	Sum of Numbertrucked	428	2			0	431
	Sum of SampleMorts	117	0			1	119
	Sum of FacilityMorts	0	0			0	0
	Sum of ResearchMorts	0	0			0	0
	Sum of TotalProjectMorts	117	0			1	119
<b>MCN</b>	Sum of NumberCollected	18,605				25	18,630
	Sum of NumberBarged	0				0	0
	Sum of NumberBypassed	0				0	0
	Sum of Numbertrucked	18,339				24	18,363
	Sum of SampleMorts	15				0	15
	Sum of FacilityMorts	251				1	252
	Sum of ResearchMorts	0				0	0
	Sum of TotalProjectMorts	266				1	267
Total Sum of NumberCollected		22,271	3	7	16	98	22,395
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		1,208	0	0	0	1	1,210
Total Sum of Numbertrucked		20,650	3	7	13	85	20,758
Total Sum of SampleMorts		159	0	0	2	11	172
Total Sum of FacilityMorts		253	0	0	0	1	254
Total Sum of ResearchMorts		1	0	0	0	0	1
Total Sum of TotalProjectMorts		413	0	0	2	12	427

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/28/12 9:42 AM

TO: 09/28/12

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	673,326	2,693,486	47,676	30,703	2,353,394	5,798,585
	Sum of NumberBarged	652,812	989,041	39,447	29,087	949,611	2,659,998
	Sum of NumberBypassed	13,124	1,702,758	8,165	1,430	1,403,473	3,128,950
	Sum of NumberTrucked	5,135	3	27	81	30	5,276
	Sum of SampleMorts	434	180	4	41	63	722
	Sum of FacilityMorts	1,820	1,429	33	64	182	3,528
	Sum of ResearchMorts	1	75	0	0	35	111
	Sum of TotalProjectMorts	2,255	1,684	37	105	280	4,361
<b>LGS</b>	Sum of NumberCollected	663,047	1,498,505	53,315	25,802	971,266	3,211,935
	Sum of NumberBarged	659,750	1,109,509	51,706	25,027	683,534	2,529,526
	Sum of NumberBypassed	121	388,249	1,601	691	287,507	678,169
	Sum of NumberTrucked	2,262	1	6	73	37	2,379
	Sum of SampleMorts	160	30	0	3	15	208
	Sum of FacilityMorts	754	716	2	8	173	1,653
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	914	746	2	11	188	1,861
<b>LMN</b>	Sum of NumberCollected	251,944	543,406	14,387	13,403	438,643	1,261,783
	Sum of NumberBarged	235,990	531,284	14,356	13,372	428,327	1,223,329
	Sum of NumberBypassed	12,941	11,582	19	13	9,831	34,386
	Sum of NumberTrucked	1,968	8	2	6	0	1,984
	Sum of SampleMorts	507	60	0	4	38	609
	Sum of FacilityMorts	538	472	10	8	150	1,178
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,045	532	10	12	188	1,787
<b>MCN</b>	Sum of NumberCollected	1,388,895	1,040,187	72,876	555,784	247,889	3,305,631
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,178,183	1,039,959	72,876	555,534	247,862	3,094,414
	Sum of NumberTrucked	208,707	49	0	173	0	208,929
	Sum of SampleMorts	216	43	0	28	10	297
	Sum of FacilityMorts	1,789	136	0	49	17	1,991
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	2,005	179	0	77	27	2,288
Total Sum of NumberCollected		2,977,212	5,775,584	188,254	625,692	4,011,192	13,577,934
Total Sum of NumberBarged		1,548,552	2,629,834	105,509	67,486	2,061,472	6,412,853
Total Sum of NumberBypassed		1,204,369	3,142,548	82,661	557,668	1,948,673	6,935,919
Total Sum of NumberTrucked		218,072	61	35	333	67	218,568
Total Sum of SampleMorts		1,317	313	4	76	126	1,836
Total Sum of FacilityMorts		4,901	2,753	45	129	522	8,350
Total Sum of ResearchMorts		1	75	0	0	35	111
Total Sum of TotalProjectMorts		6,219	3,141	49	205	683	10,297

Cumulative Adult Passage at Mainstem Dams Through: 09/28

DAM	EndDate	Spring Chinook						Summer Chinook						Fall Chinook					
		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.		2012		2011		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	09/27	158075	7591	167097	50945	152015	20110	81663	12235	108279	51451	92437	17241	324652	106059	359569	69337	370034	45913
TDA	09/26	117071	7173	124164	40146	112195	16495	69222	10392	81123	39845	79218	13523	196839	83750	193200	54782	189989	35313
JDA	09/27	107655	6755	103401	39823	94492	15370	60814	10415	75375	35544	72273	14191	144791	72479	145024	49156	140112	31306
MCN	09/27	102763	4787	101246	31750	86252	13687	64428	5104	74621	28165	68072	11090	143596	37753	119459	29234	103977	21427
IHR	09/27	71957	2905	69306	18161	60108	8392	14182	1481	26758	12378	18923	4410	34835	18406	26270	14447	18452	9613
LMN	09/27	68608	2891	69832	18094	58469	7193	15150	1611	31176	13730	19948	4267	29274	18654	21755	11835	16224	8434
LGS	09/27	68247	3449	67321	23492	54053	8198	14748	1613	42211	18214	18393	5041	28781	14837	20944	10416	14458	6338
LGR	09/27	66366	3525	59342	22063	54084	9639	13163	1717	36764	16425	17083	5652	27860	14968	17861	10673	12333	7669
PRD	09/25	19495	1015	15246	6030	16630	1325	50667	1994	50865	4223	58386	2526	25802	5564	22289	3793	21362	3493
RIS	09/22	19881	800	13089	8394	14658	2236	52184	3343	44432	14299	54861	5446	5018	3252	5250	3344	6398	1702
RRH	09/22	6641	459	6989	3491	5643	822	45528	2775	38861	8131	42042	4317	3622	1829	4461	2279	4403	1275
WEL	09/26	5311	700	4153	3969	4833	817	38588	3271	29821	8465	31187	2517	2148	736	1900	1512	2490	988
WFA	09/15	35899	1314	43748	1399	50770	1108	-	-	-	-	-	-	758	186	468	135	386	50

DAM	Coho						Sockeye			Steelhead					
	2012		2011		10-Yr Avg.		2012	2011	10-Yr Avg.	2012	2011	10-Yr Avg.	Wild 2012	Wild 2011	Wild 10-Yr
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Adult	Avg.	Adult	Adult	Avg.	Adult	Adult	Avg.
BON	39313	2323	113957	3139	77213	4395	515673	185796	130981	218586	355844	366868	80343	125080	111996
TDA	27682	2538	47972	3616	22580	2578	410099	138293	109313	174608	267384	256600	62106	93868	78244
JDA	26255	3304	35747	2141	19408	2816	394162	143605	113830	129988	215427	232226	49418	76399	69366
MCN	13461	929	21528	1413	9868	1176	364147	113950	93284	112750	194012	176299	38584	62195	50527
IHR	2043	249	2954	694	976	111	453	1141	390	69605	146812	124325	18273	37237	30490
LMN	1274	206	1453	158	785	81	486	1395	486	61689	128835	112286	17694	33572	28931
LGS	1279	176	1250	220	710	89	453	1436	467	54216	112860	95294	16950	31552	23849
LGR	589	82	1111	111	510	98	469	1501	573	51400	111762	92275	16204	32555	24436
PRD	6536	1236	1603	308	1414	193	408258	145070	118727	14945	18007	16845	-	-	-
RIS	3206	52	1875	203	992	164	410615	146111	115768	12554	15437	14677	5425	7256	7206
RRH	592	12	263	26	109	19	363297	132096	94737	10129	11282	10851	4235	4996	4815
WEL	509	0	245	8	42	0	326089	111507	92052	7488	8701	8110	3295	3513	3563
WFA	201	544	207	342	865	171	-	-	-	29101	27528	27474	-	-	-

PRD and WFA do 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.

Page last updated on: 09/28/12

BON counts from January 1, 2012 to March 14, 2012 (historical counts begin March 15):

Year	Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
2012	12	1	1,471	497
2011	47	0	1,370	580