



Fish Passage Center

Weekly Report #14 - 26

September 12, 2014

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Starting September 12, the weekly reports will be published every other week; the next report will be September 26.

Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 0% and 185% of average at individual sub-basins over the first ten days of September, with the greatest precipitation occurring in the upper Columbia Basins. Precipitation above The Dalles has been 63% of average over September. Over the 2014 water year, precipitation has ranged between 78% and 97% of average.

Table 1. Summary of September precipitation and cumulative October through September 10, 2014, precipitation with respect to average (1971–2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2014		Water Year 2014	
	September 1-10, 2014		October 1, 2013 to September 10, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.97	124	34.6	92
SNAKE RIVER above Ice Harbor	0.01	3	18.0	81
Columbia above The Dalles	0.32	63	22.9	84
Kootenai	1.51	185	37.0	96
Clark Fork	0.05	10	21.9	80
Flathead	0.72	101	34.7	97
Pend Oreille River Basin above Waneta Dam	0.36	57	28.6	88
Salmon River Basin	0.01	1	22.2	78
Upper Snake Tributaries	0.09	16	25.6	95
Clearwater	0.02	3	35.5	87
Willamette River above Portland	0.00	0	52.1	82

Grand Coulee Reservoir is at 1280.6 feet (9-11-14) and has refilled 0.5 feet over the last week. Outflows at Grand Coulee have ranged between 53.8 and 65.2 Kcfs over the last week. On August 31st, 2014, Grand Coulee was at an elevation of 1279.6 feet, reaching the end of August draft target of 1279.7 feet.

The Libby Reservoir is currently at elevation 2450.0 feet (9-11-14) and has drafted 0.7 feet over the previous week. Daily average outflows at Libby Dam have been 9.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3553.1 feet (9-11-14) and has drafted 0.9 feet over the previous week. Outflows at Hungry Horse have been 2.7 Kcfs over the last week.

Dworshak is currently at an elevation of 1529.7 feet (9-11-14) and has drafted 6.6 feet over the previous week. During the afternoon of August 15, 2014, Unit #3 at Dworshak was forced out of service. As a result, outflows at the project had been reduced to 6.6–6.8 Kcfs with the operation of the remaining smaller units (4.4 Kcfs) and spill amounts of 2.0–2.3 Kcfs (limited by the 110% TDG Cap below the project). The Salmon Managers submitted SOR 2014-2 to the Action Agencies on 8-20-14, which asked for outflows of 10 Kcfs to be restored at Dworshak while drafting to elevation 1535 feet by the end of August. To achieve this outflow with Unit #3 out of service, the SOR asked the COE to coordinate a temporary TDG waiver up to 120% below Dworshak (increased spill) while also coordinating with hatcheries below the project that may be impacted by the increased TDG. August 23–September 11 outflows below Dworshak ranged from 8.3 Kcfs to 8.8 Kcfs, with daily average spill amounts between 3.7 and 4.2 Kcfs. At these spill levels, TDG below Dworshak has been approximately 115%, which has been tolerable for the hatcheries below Dworshak Dam. The USACE plans to decrease outflows at Dworshak to approximately

6.7 Kcfs (110% TDG) on September 13th, with a further reduction to 4.0 Kcfs on September 20th.

The Brownlee Reservoir was at an elevation of 2055.3 feet on September 11, 2014, and has drafted 2.6 feet last week. Inflows to Brownlee Dam have ranged between 8.1 and 8.7 Kcfs last week.

The Summer Biological Opinion flow period began on June 21st in the lower Snake River (Lower Granite) and ended on August 31st. According to the June Final Water Supply Forecast (June 6, 2014), the flow objective this summer was 52 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 23.9 Kcfs over the last week of the flow period and 40.4 Kcfs over the entire summer flow period.

The flow objective at McNary over the summer period (July 1st to August 31st) was 200 Kcfs. Flows at McNary Dam have averaged 148.0 Kcfs over the last week of the flow period and 189.8 Kcfs over the entire summer flow period.

Smolt Monitoring

Smolt monitoring is ongoing at six SMP dams (BON, JDA, MCN, LMN, LGS, and LGR). Sampling at Rock Island Dam ended after the August 31st sample and sampling at all SMP traps has been concluded for the 2014 out-migration season.

Subyearling Chinook dominated the collections at all the SMP dam sites this week. When compared to last week, subyearling Chinook passage decreased at all of the SMP dam sites except Lower Monumental Dam. Passage of subyearling Chinook at LMN increased this week, when compared to last week. Due to the high temperature protocol at JDA, comparisons in passage are not possible.

The high temperature sampling protocols that had been in place at Bonneville Dam (BON) since after the July 30th sample ended this week. This means that sampling at BON went back to every day. When compared to the previous week, passage of subyearling Chinook at BON decreased again this week. The daily average passage index for subyearling Chinook at BON this week was about 250 per day, whereas that for last week was about 760 per day. No Pacific

lamprey ammocoetes were encountered this week and macrophthalmia were encountered only once this week, on September 6th.

High temperature sampling protocols were first implemented at John Day (JDA) after the July 31st sample and remained in effect this week. Under these high temperature sampling protocols, the SMP crew at JDA samples only twice a week (Monday and Thursday), for condition only. It is important to note that this type of sampling 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. No Pacific lamprey ammocoetes or macrophthalmia were encountered in this week's samples. The high temperature sampling protocols will continue until the daily average temperature in the forebay falls below 69.5°F. SMP sampling at JDA is scheduled to end after the September 15th sample.

The forebay temperatures at McNary have been below 69.5°F since September 3rd. With this reduction in the forebay temperature, the high temperature sampling protocols that had been in place at McNary Dam (MCN) were terminated and normal sampling was resumed. Subyearling Chinook passage decreased again this week when compared to the previous week. The daily average passage index for subyearling Chinook at MCN this week was about 220 per day. Last week's daily average passage index for subyearling Chinook was about 1,160 per day. Pacific lamprey macrophthalmia were encountered in two of this week's three samples, with a daily average collection of about 11 per day. No Pacific lamprey ammocoetes were encountered in this week's samples.

This week's daily average passage index for subyearling Chinook at Lower Granite Dam (LGR) was about 140 per day, which is a decrease from last week's daily average passage index of about 415 per day. One Pacific lamprey macrophthalmia was sampled this week at LGR, on September 9th

Compared to last week, passage of subyearling Chinook decreased at Little Goose (LGS). The daily average passage index for subyearling Chinook at LGS was less than 50 per day, whereas that for last week was

about 180 per day. No Pacific lamprey ammocoetes were encountered in this week's samples at LGS, but Pacific lamprey macrophthalmia were encountered in all seven of this week's samples. The daily average collection for Pacific macrophthalmia at LGS this week was 9 per day.

Subyearling Chinook passage at Lower Monumental (LMN) increased this week, when compared to last week. The daily average passage index for subyearling Chinook at LMN was nearly 100 per day. Last week's daily average passage index for subyearling Chinook was about 20 per day. No Pacific lamprey ammocoetes were encountered in this week's samples at LMN, but Pacific lamprey macrophthalmia were encountered in two of this week's samples (September 6th and 8th). As typically occurs at this time of year, mortality levels for subyearling Chinook have been relatively high at LMN over the past couple of weeks. These high mortalities often coincide with high river temperatures and increased incidence of the disease *Columnaris*. Over the past 2 weeks, daily mortality rates have been in the 6.1% to 63.6% range. However collections during this time have generally been less than 30 fish per day, until September 7th when collections began to increase. *Columnaris* levels during this same period were in the 0.0% to 53.8% range.

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 scheduled for this zone this week. Approximately 300,000 spring Chinook pre-smolts are scheduled for release into the Clearwater River beginning next week. These pre-smolts are 100% unmarked and are not expected to out-migrate until spring 2015.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There were no releases scheduled for this zone this week and no releases are scheduled for this zone over the next 2 weeks.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries

from Bonneville Dam to McNary Dam. There were no releases scheduled for this zone this week. There are no other releases scheduled for this zone over the next 2 weeks.

Adult Passage

Daily adult fall Chinook passage numbers at Bonneville Dam reached record numbers last week, ranging between 16,054 and 67,521. Daily counts of all salmonids passing Bonneville Dam on September 2, 2014 were high enough to initiate the operation of two units at Powerhouse 1 (which began September 3) in an attempt to distribute the high numbers of passing adults over both the Washington and Oregon (Bradford) fishways. Due to continued crowding at the Washington shore count station, two additional units were initiated at Powerhouse 1 on September 4, 2014 (a total of four units operating at Powerhouse 1). Before the flow splitting operation at Bonneville Dam, 85%–90% of fall Chinook were passing via the Washington shore ladder. Since the full four units have been initiated at Powerhouse 1, the percentage passing the Washington shore has been reduced to approximately 60%. This operation has resulted in a more even distribution of fish passing Bonneville Dam and has certainly helped contain overcrowding of ladders during several days of record passage. Along the same lines, beginning on September 9, 2014, approximately 14.7 Kcfs of spill has been occurring at The Dalles Dam between the hours of 0400 and 1600 in attempt to attract a higher percentage of adults to the North fishway. Prior to the spill test operation at The Dalles at least 95% of fish were passing via the East ladder. Since the daily spill test has been occurring, fish passing the East ladder has dropped to approximately 85% on average. Although this distribution is not ideal, it is an improvement over no attraction spill at the Dalles Dam. The attraction spill operation at The Dalles will continue for one week.

The adult fall Chinook count of 461,169 is about 80% of the 2013 count of 573,567, while having 205,004 more fish than the 10-year average count of 256,165. The 2014 Bonneville Dam fall Chinook jack count of 48,903 is about 82% of the 2013 count of 59,725 and 148% of the 10-year average count of 33,043. The 2014 McNary Dam adult fall Chinook count of 91,914 is about 100% of the 2013 count and 190% of the 10-year average. The 2014 McNary Dam

jack count of 11,396 is about 79% of the 2013 count, while being 115% of the 10-year average count.

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 2014 Bonneville Dam adult steelhead count of 255,206 is about 125% of the 2013 count of 204,351, while being 86% of the 10-year average count of 297,089. The 2014 Bonneville Dam adult wild steelhead count of 110,065 is about 122% of the 2013 count of 90,162, and about 113% of the 10-year average count of 97,545. In the Snake River, this year's Lower Granite steelhead count of 24,014 is about 165% of that recorded in 2013, while having 10,555 fewer fish than the 10-year average count of 34,569. The 2014 Lower Granite Dam adult wild steelhead count of 11,486 is about 168% of the 2013 count and about 102% of the 10-year average. At Willamette Falls, the 2014 count for steelhead was 27,055 as of September 10th. This year's steelhead count is 153% of the 2013 count of 17,745 and about 108% of the 10-year average count of 25,121.

Adult sockeye passage numbers at Bonneville Dam were either 0 or 1 each day last week (a total of four for the week). The 2014 adult sockeye count at Bonneville Dam of 614,179 is about 3.3 times greater than the 2013 count of 185,505 and 3.2 times greater than the 10-year average of 192,204. Two of the major spawning sites for sockeye in the Upper Columbia River zone are Lake Wenatchee and Lake Osoyoos (Okanogan basin). The 2014 McNary Dam adult sockeye count of 545,998 is about 4 times greater than the 2013 and 10-year average counts. The Lower Granite Dam 2014 adult sockeye count of 2,765 is about 3.7 times greater than the 2013 count of 738 and 4 times greater than the 10-year average count of 681.

Daily counts of adult coho at Bonneville Dam have been increasing over the last week, ranging between 1,981 and 9,785. The 2014 Bonneville Dam adult coho count of 65,565 is 338% of the 2013 count of 19,410 and is about 149% of the 10-year average count of 44,082. The 2014 Bonneville Dam coho jack count of 4,365 is about 200% of the 2013 count of 2,178 and about 188% of the 10-year average count of 2,321.

Wanapum Dam Update

At Wanapum Dam a significant crack (65-feet long by 2-inches wide) was discovered in a spillway monolith (#4) on February 27, 2014. This discovery has led to an emergency drawdown of the Wanapum pool to an elevation range of 541–545 feet, which is over 20 feet below its typical forebay elevation. Preliminary results of an investigation by Grant PUD and its consultants has determined that the primary contributing factor to a fracture developing within the dam's spillway was a mathematical error during the pre-construction design of Wanapum Dam.

The drawdown of Wanapum pool had caused the adult fishways at Wanapum Dam to not be operational. The adult fishways exits had been approximately 10 feet above the forebay water level. Grant County has designed adult fishway retrofits that involve the use of weir boxes and chutes to deliver adult fish into the forebay of Wanapum Dam. On April 15, 2014, the weir and chute retrofit was operational at the left bank fishway. A weir and chute has also been installed at the right bank fishway at Wanapum and was operational on April 26, 2014. Grant County PUD installed a spiral flume on the left bank fishway that reduces the elevation of the chute outflow from approximately 10 feet down to several feet. At the time of installing the spiral flume at the left bank fishway exit, Grant County also installed a ramp structure leading up to the weir and barriers to prevent jumping outside the structure. Grant PUD has also completed the installation of the spiral flume at the right bank fishway.

Visual observations of the exit retrofits have been promising. During Wanapum Dam site visits on May 7, May 21, June 4, June 18, July 2, July 23, and August 20, 2014, many fish have been seen passing the left bank fishway weir and chute. As of September 10, 2014, a total of 608,127 sockeye and 114,844 adult Chinook had passed Priest Rapids Dam. As of September 10, 2014, 581,054 sockeye and 105,766 adult Chinook had passed Rock Island Dam.

Over the last several weeks, Grant PUD has had problems with aquatic vegetation clogging the upper ladder supply pumps (four per ladder), especially on

the left bank fishway. As long as this issue continues, Grant PUD plans to clean the pumps at least 3 days per week and more often if needed. During pump cleaning, attraction water to the lower fishway will remain on and two of the four upper ladder pumps will be cleaned at a time, always leaving two pumps to supply water to the upper fishway and the weir chute.

The drawdown of Wanapum pool has also had a significant impact on the adult fishways at Rock Island Dam, operated by Chelan PUD. With the lower than normal tailrace levels, Chelan PUD has constructed extensions or denils at several ladder entrances. Chelan County PUD currently has all three denils in place, two at the right bank fishway and one on the left bank fishway. Over the last several weeks as flows and project tailwater elevations have decreased, Chelan PUD has begun to operate the denils at both the left and right bank fishways.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 8/29/2014 to 9/11/2014

No Releases Scheduled

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: 9/12/2014 to 9/25/2014

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CH0	SP	2015	300,000	09-16-14	09-18-14	Selway River	Clearwater River M F
Nez Perce Tribe Total					300,000				
Grand Total					300,000				

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
08/29/2014	110.8	0.2	116.2	0.0	98.4	0.0	91.8	0.0	95.2	0.3	99.6	3.7	99.6	1.5
08/30/2014	96.2	0.1	96.4	0.0	98.3	0.0	92.1	0.0	93.9	0.5	96.2	3.4	99.8	1.5
08/31/2014	91.4	0.1	90.6	0.0	91.7	0.0	87.1	0.0	90.0	0.6	91.1	3.6	95.5	1.5
09/01/2014	70.3	0.1	70.9	0.0	73.4	0.0	74.8	0.0	78.7	0.4	75.0	4.0	75.5	1.5
09/02/2014	76.7	0.1	69.2	0.0	83.6	0.0	87.1	0.0	86.7	24.7	87.5	4.6	94.4	2.1
09/03/2014	77.0	0.1	73.4	0.0	77.9	0.0	70.5	0.0	75.6	22.5	81.3	3.9	79.6	1.6
09/04/2014	75.6	0.1	69.1	0.0	74.8	0.0	74.9	0.0	79.5	4.8	78.7	4.0	80.9	4.8
09/05/2014	65.2	0.1	65.2	0.0	65.2	0.0	64.7	0.0	67.7	21.0	71.8	4.4	71.0	2.1
09/06/2014	56.9	0.1	62.0	0.0	63.6	0.0	61.3	0.0	59.8	32.6	63.7	3.9	62.5	2.3
09/07/2014	55.8	0.1	54.9	0.0	49.8	0.0	50.3	0.0	51.9	38.7	52.8	4.1	51.5	2.4
09/08/2014	53.8	0.1	54.5	0.0	57.1	0.0	56.4	0.0	59.0	29.9	61.1	4.0	57.8	3.3
09/09/2014	57.6	0.1	57.7	0.0	60.4	0.0	53.7	0.0	56.1	31.7	55.7	4.3	56.9	7.8
09/10/2014	62.2	0.1	65.3	0.0	61.4	0.0	62.6	0.0	63.0	24.4	70.2	4.4	69.8	10.1
09/11/2014	59.0	0.1	54.8	0.0	63.9	0.0	67.8	0.0	68.6	22.7	62.3	4.1	62.1	3.2

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill			Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
08/29/2014	8.4	3.8	---	10.0	23.9	11.0	24.0	7.3	24.3	12.1	12.1	16.0
08/30/2014	8.4	3.8	---	9.4	22.9	9.6	24.3	7.3	24.2	12.0	12.0	16.0
08/31/2014	8.4	3.8	---	9.4	23.2	10.2	24.1	7.3	24.1	12.0	12.0	15.9
09/01/2014	8.5	3.9	---	9.9	24.0	0.0	21.7	0.0	20.3	0.0	0.0	0.0
09/02/2014	8.5	3.8	---	9.5	25.9	0.0	23.7	0.0	19.2	0.0	0.0	0.0
09/03/2014	8.5	3.8	---	9.7	25.2	0.0	19.8	0.0	19.6	0.0	0.0	0.0
09/04/2014	8.6	3.9	---	10.4	24.3	0.0	20.0	0.0	19.6	0.0	0.0	0.0
09/05/2014	8.6	4.0	---	9.4	26.1	0.0	20.7	0.0	21.9	0.0	0.0	0.0
09/06/2014	8.8	4.1	---	9.4	24.7	0.0	20.7	0.0	22.8	0.0	0.0	0.0
09/07/2014	8.8	4.1	---	9.3	24.6	0.0	22.4	0.0	21.8	0.0	0.0	0.0
09/08/2014	8.8	4.1	---	9.5	24.2	0.0	24.0	0.0	23.7	0.0	0.0	0.0
09/09/2014	8.8	4.1	---	8.7	25.1	0.0	24.1	0.0	27.4	0.0	0.0	0.0
09/10/2014	8.8	4.1	---	9.4	23.6	0.0	21.6	0.0	21.1	0.0	0.0	0.0
09/11/2014	8.7	4.0	---	8.6	24.5	0.0	22.5	0.0	23.9	0.0	0.0	0.0

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
08/29/2014	152.0	76.2	141.4	42.2	131.0	52.2	143.1	93.0	0.0	37.6
08/30/2014	138.9	69.7	123.3	37.1	117.9	47.4	141.9	97.8	0.0	31.7
08/31/2014	138.0	69.2	131.2	39.3	124.5	49.5	141.3	97.5	0.0	31.4
09/01/2014	90.2	0.0	88.9	1.0	88.8	0.1	107.0	8.9	3.0	87.7
09/02/2014	104.4	0.0	97.3	0.9	96.1	0.0	101.5	3.6	9.3	81.3
09/03/2014	104.7	0.0	101.2	1.0	100.1	0.0	100.4	1.3	13.2	78.6
09/04/2014	106.7	0.0	110.7	1.0	110.9	0.0	100.3	1.3	24.7	66.9
09/05/2014	105.5	0.0	101.7	1.0	101.1	0.0	106.2	1.3	38.9	58.6
09/06/2014	94.4	0.0	97.4	1.0	98.0	0.0	104.8	1.3	43.6	52.6
09/07/2014	79.7	0.0	80.2	1.0	80.4	0.0	91.6	1.3	35.8	47.0
09/08/2014	83.2	0.0	76.1	1.0	78.7	0.0	83.8	1.4	41.8	33.2
09/09/2014	88.1	0.0	80.7	1.0	79.1	7.3	82.3	1.3	41.7	31.8
09/10/2014	77.4	0.0	80.2	1.1	80.4	7.5	87.8	1.4	47.4	31.6
09/11/2014	87.8	0.0	79.5	1.0	76.5	7.3	88.5	1.4	48.5	31.3

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>				
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>hr</u>	
8/29	104.7	105.3	105.6	24	---	---	---	0	105.3	105.6	106.1	24	104.4	105.0	105.8	24	105.0	105.4	105.8	24
8/30	104.7	105.1	105.5	24	---	---	---	0	105.7	105.8	105.9	24	104.6	105.0	105.5	24	104.6	104.9	105.1	24
8/31	104.5	104.8	105.0	24	---	---	---	0	105.3	105.4	105.7	24	104.3	104.6	104.9	24	104.1	104.3	104.4	24
9/1	103.7	104.0	104.1	24	---	---	---	0	105.1	105.2	105.2	24	104.4	104.9	105.5	24	104.1	104.4	104.8	24
9/2	103.6	104.0	104.4	24	---	---	---	0	105.6	105.9	106.4	24	105.3	105.9	106.5	24	104.9	105.7	106.4	24
9/3	103.0	103.4	104.0	24	---	---	---	0	104.8	105.2	105.5	24	103.9	104.2	104.7	24	104.4	104.6	105.0	24
9/4	102.4	102.9	103.4	24	---	---	---	0	104.0	104.2	104.4	24	103.6	104.0	104.3	24	103.8	104.2	104.5	24
9/5	102.9	103.2	103.3	24	---	---	---	0	103.6	103.7	104.0	24	103.5	103.9	104.2	24	104.1	104.7	105.1	24
9/6	103.0	103.5	103.8	24	---	---	---	0	103.6	103.8	103.9	24	103.4	103.9	104.4	24	104.2	104.9	105.5	24
9/7	103.4	103.9	104.1	24	---	---	---	0	103.9	104.2	104.6	24	104.3	105.0	105.5	24	105.3	106.0	106.2	24
9/8	103.5	103.8	104.0	24	---	---	---	0	103.9	104.1	104.2	24	104.6	105.1	105.5	24	105.8	106.4	107.2	24
9/9	104.1	104.5	105.4	24	---	---	---	0	102.9	103.1	104.3	24	103.7	104.3	105.4	24	104.2	104.6	104.8	24
9/10	103.2	103.7	105.4	24	---	---	---	0	101.6	101.9	102.1	24	102.7	103.2	103.8	24	102.7	103.1	103.7	24
9/11	102.4	102.8	103.3	23	---	---	---	0	100.0	100.2	100.9	23	102.0	102.4	102.7	23	101.9	102.4	102.7	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>				
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>hr</u>	
8/29	105.5	106.2	107.3	24	105.5	106.0	106.5	23	105.2	105.8	106.3	23	105.7	105.8	105.8	24	104.8	105.0	105.3	24
8/30	105.8	106.4	107.3	24	104.9	105.1	105.6	20	104.7	105.0	105.6	20	105.4	105.5	105.6	24	104.6	104.8	105.0	24
8/31	104.8	105.3	106.8	24	104.2	104.4	104.9	18	104.0	104.2	104.6	18	104.5	104.7	105.0	24	103.7	103.9	104.2	24
9/1	104.9	105.4	106.0	24	104.2	104.6	105.0	21	103.8	104.4	104.9	21	104.0	104.2	104.3	24	103.1	103.3	103.4	24
9/2	105.8	106.6	107.1	24	104.9	105.1	105.5	19	104.4	104.8	105.5	19	104.3	104.5	104.8	24	103.5	103.8	104.2	24
9/3	106.2	107.0	108.1	24	104.0	104.4	104.8	21	103.3	103.7	104.0	21	103.6	103.9	104.3	24	102.7	102.9	103.7	24
9/4	105.1	105.8	107.2	24	103.6	104.1	104.5	21	102.5	103.1	103.7	21	102.8	103.0	103.2	24	102.5	102.7	102.8	24
9/5	105.3	105.8	106.7	24	104.4	104.9	105.5	18	103.6	104.0	104.6	18	102.7	103.0	103.4	24	101.9	102.4	102.8	24
9/6	105.5	106.3	107.0	24	105.4	106.2	106.8	23	104.5	105.6	106.3	23	103.5	103.9	104.3	24	102.3	103.2	103.4	24
9/7	106.2	107.0	108.6	24	106.3	106.8	108.4	19	105.3	106.2	107.7	19	104.5	104.8	105.3	24	102.7	103.5	104.2	24
9/8	106.9	107.6	109.5	24	106.5	106.9	107.4	22	106.0	106.8	107.5	22	105.3	105.6	106.0	24	103.6	104.5	104.9	24
9/9	104.9	105.5	106.4	24	104.9	105.2	105.4	20	104.6	104.9	105.6	20	104.9	105.1	105.3	24	103.4	103.8	104.2	24
9/10	104.0	104.6	105.7	24	103.4	103.7	104.2	19	103.1	103.6	104.4	19	103.7	104.0	104.6	24	102.6	102.9	103.2	24
9/11	103.5	104.7	105.8	23	101.9	102.2	102.9	21	102.1	102.7	103.5	21	102.5	102.7	102.8	23	101.7	102.2	102.7	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>High</u>	<u>#</u>				
	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>		<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>hr</u>	
8/29	104.9	105.0	105.3	24	104.7	104.9	105.3	24	103.1	103.6	104.1	24	103.9	104.2	104.6	24	103.4	104.5	105.8	24
8/30	104.5	104.8	105.0	24	104.4	104.6	105.5	24	102.8	103.3	103.7	24	103.5	103.8	104.0	24	101.2	101.7	102.0	24
8/31	103.6	103.9	104.7	24	103.7	104.2	106.9	24	101.5	101.9	102.3	24	102.3	102.6	103.2	24	100.4	101.0	101.5	24
9/1	103.1	103.5	103.8	24	103.1	103.5	104.7	24	102.1	103.2	104.0	24	102.4	103.0	103.5	24	99.8	100.9	102.1	24
9/2	103.2	103.7	103.9	24	107.4	111.6	119.7	24	102.5	103.1	103.6	24	103.5	104.0	106.9	24	101.2	102.7	104.1	24
9/3	102.1	102.7	103.4	24	104.8	108.2	116.9	24	101.3	101.6	102.0	24	102.1	102.3	102.6	24	100.4	101.1	101.9	24
9/4	102.3	102.7	102.8	24	103.3	104.4	106.9	24	103.2	105.3	108.1	24	103.6	104.9	106.9	24	99.7	100.9	102.5	24
9/5	102.3	102.6	102.8	24	101.5	102.8	106.3	24	105.0	105.9	107.1	24	106.3	107.3	109.2	24	100.9	101.9	102.5	24
9/6	103.0	103.3	103.5	24	111.7	116.2	118.2	24	104.1	105.3	106.5	23	104.3	105.0	105.5	23	104.6	105.8	106.8	23
9/7	103.9	104.2	104.7	24	113.4	115.0	116.5	24	---	---	---	0	---	---	---	0	---	---	---	0
9/8	104.1	104.5	104.6	24	110.8	114.4	118.0	24	104.0	104.8	106.2	24	---	---	---	0	102.8	103.4	104.2	24
9/9	103.6	103.9	104.2	24	109.9	112.6	115.3	24	103.6	104.4	106.2	24	---	---	---	0	100.7	101.1	101.7	24
9/10	103.1	103.3	103.5	24	108.1	112.1	114.9	23	---	---	---	0	---	---	---	0	---	---	---	0
9/11	101.9	102.1	102.5	23	107.3	112.1	117.2	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		
8/29	104.5	105.5	106.6	24	---	---	---	0	114.6	114.8	115.0	24	110.4	111.5	113.3	24	101.3	102.4	103.6	24
8/30	102.8	103.2	103.5	24	---	---	---	0	114.5	114.7	115.1	24	110.3	111.3	112.4	24	100.8	101.5	102.6	24
8/31	102.2	102.5	102.7	24	---	---	---	0	114.2	114.4	114.6	24	109.9	110.7	111.6	24	100.4	101.4	102.4	24
9/1	102.0	102.7	103.0	24	---	---	---	0	114.4	114.5	114.9	24	109.5	110.6	111.7	24	100.8	101.9	103.1	24
9/2	102.9	103.5	104.0	24	---	---	---	0	114.5	114.7	115.0	24	109.2	110.4	111.8	24	101.6	103.0	104.5	24
9/3	102.3	102.6	103.0	24	---	---	---	0	114.4	114.6	114.9	24	110.1	111.9	113.5	24	100.2	100.9	102.0	24
9/4	101.9	102.4	103.0	24	---	---	---	0	114.5	114.6	115.3	24	111.1	112.1	113.3	24	100.6	101.9	103.4	24
9/5	102.5	103.4	103.9	24	---	---	---	0	114.5	114.9	115.3	24	111.0	112.2	113.3	24	100.7	101.9	103.3	24
9/6	105.5	106.8	107.3	23	---	---	---	0	115.2	115.7	116.1	24	111.5	112.9	114.0	24	100.8	102.2	103.5	24
9/7	---	---	---	0	---	---	---	0	115.5	115.9	116.4	24	111.8	113.1	114.2	24	100.9	102.1	103.4	24
9/8	105.1	105.5	105.9	24	---	---	---	0	115.6	116.0	116.5	24	111.8	113.0	114.1	24	100.8	102.0	103.4	24
9/9	103.4	104.0	107.1	24	---	---	---	0	115.2	115.5	115.9	24	111.4	112.5	113.5	24	100.0	100.8	101.8	24
9/10	---	---	---	0	---	---	---	0	114.7	115.0	115.4	24	110.8	111.7	112.5	24	99.7	100.5	101.4	23
9/11	---	---	---	0	---	---	---	0	114.0	114.3	114.9	23	110.4	111.4	112.7	23	99.6	100.8	102.0	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		
8/29	105.2	107.3	109.0	24	101.0	101.7	102.2	24	113.5	114.0	114.9	24	109.0	109.2	109.4	24	108.8	109.2	109.6	24
8/30	105.0	106.5	107.9	24	101.7	102.1	102.4	24	112.6	113.1	113.8	24	108.4	108.5	108.7	24	108.6	108.9	109.3	24
8/31	104.7	106.2	107.5	24	101.8	102.1	102.3	24	113.1	114.0	115.1	24	107.4	107.8	108.4	24	107.9	108.3	108.6	24
9/1	104.9	106.9	108.4	24	101.4	101.6	102.0	24	101.3	102.2	110.9	24	106.1	106.3	106.6	24	105.3	105.8	107.4	24
9/2	105.1	107.1	108.8	24	102.1	102.5	102.8	24	101.6	102.3	103.3	24	105.8	105.9	106.1	24	104.8	105.2	105.4	24
9/3	103.8	105.2	106.5	24	101.3	101.5	102.0	24	100.4	100.6	100.9	24	104.2	104.6	105.4	24	103.9	104.2	104.3	24
9/4	104.9	106.9	108.5	24	100.3	100.4	100.7	24	99.8	100.1	101.1	24	103.1	103.3	103.7	24	103.3	103.6	103.9	24
9/5	105.0	106.9	108.4	24	99.9	100.1	100.3	24	100.2	100.8	103.9	24	102.5	102.7	102.9	24	102.7	103.1	103.4	24
9/6	105.2	107.3	108.9	24	100.4	100.7	101.0	24	100.7	101.5	101.9	24	103.0	103.4	103.6	24	102.9	103.5	103.9	24
9/7	105.4	107.2	108.8	24	101.1	101.3	101.4	24	101.2	101.7	102.1	24	103.2	103.3	103.4	24	102.6	102.9	103.2	24
9/8	105.1	106.7	107.9	24	101.3	101.6	101.8	24	100.4	100.7	101.2	24	102.4	102.6	102.9	24	101.5	101.9	102.2	24
9/9	104.7	106.1	107.2	24	100.9	101.2	101.5	24	99.1	99.3	99.8	24	99.9	100.8	101.7	24	99.6	100.0	100.4	24
9/10	104.4	105.7	106.9	24	100.3	100.6	101.0	24	98.9	99.1	99.2	24	100.7	101.4	101.7	24	99.6	100.3	100.8	24
9/11	104.2	106.1	107.6	23	99.4	99.8	100.1	23	99.2	99.8	100.3	23	101.2	101.8	102.9	23	100.3	100.9	101.2	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		
8/29	107.4	107.6	107.8	24	112.8	113.1	113.2	24	109.2	109.4	109.6	24	110.6	111.2	111.7	24	---	---	---	0
8/30	107.3	107.4	107.5	24	112.6	113.1	113.5	24	109.8	109.9	109.9	24	110.4	110.9	111.8	24	---	---	---	0
8/31	106.5	106.6	106.8	24	112.8	113.1	114.3	24	108.5	108.7	109.6	24	110.3	111.0	112.0	24	---	---	---	0
9/1	105.8	105.9	106.2	24	105.2	106.4	111.9	24	107.7	108.0	108.2	24	108.1	108.9	109.5	24	---	---	---	0
9/2	105.5	105.7	105.8	24	104.4	105.2	107.3	24	107.7	107.9	108.1	24	107.3	108.2	108.7	24	---	---	---	0
9/3	104.1	104.2	104.6	24	103.6	104.6	107.4	24	106.5	106.8	107.3	24	105.5	106.2	106.9	24	---	---	---	0
9/4	103.3	103.5	103.7	24	102.0	102.9	104.0	24	105.4	105.7	106.0	24	105.0	106.0	107.1	24	---	---	---	0
9/5	103.1	103.4	103.5	24	102.3	103.0	103.6	24	105.3	105.5	105.6	24	104.8	105.7	106.7	24	---	---	---	0
9/6	103.4	103.6	103.8	24	102.4	103.3	105.8	24	105.4	105.9	106.6	24	104.8	106.2	107.3	24	---	---	---	0
9/7	103.3	103.4	103.6	24	102.7	103.4	103.9	24	105.9	106.0	106.3	24	105.7	106.9	107.9	24	---	---	---	0
9/8	102.0	102.4	103.3	24	101.4	102.0	103.0	24	104.7	105.4	105.9	24	104.5	105.2	105.6	24	---	---	---	0
9/9	100.8	100.9	101.1	24	101.0	101.6	103.9	24	102.5	102.8	103.1	24	102.4	102.9	103.4	24	---	---	---	0
9/10	101.0	101.2	101.3	24	100.1	100.8	101.5	24	103.1	103.9	104.9	24	101.9	103.1	103.9	24	---	---	---	0
9/11	101.0	101.2	101.3	23	100.3	100.7	101.5	23	102.5	103.0	104.1	23	101.1	102.0	102.9	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>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>		<u>24h</u>	<u>AVG</u>	<u>High</u>	<u>#</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>	<u>Avg</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>
8/29	109.0	109.2	109.5	24	114.9	115.3	115.9	24	105.2	105.7	106.0	24	114.7	114.9	115.5	24	105.9	106.2	106.5	24			
8/30	107.6	108.1	108.5	24	114.0	114.6	115.5	24	105.4	105.6	105.9	24	114.6	115.1	116.8	24	105.7	105.9	106.1	24			
8/31	106.1	106.3	106.9	24	114.6	115.3	116.3	24	104.6	104.7	105.0	24	114.2	114.6	114.9	24	105.8	106.1	106.5	24			
9/1	104.6	104.8	105.1	24	105.3	106.5	113.0	24	103.8	104.0	104.0	24	104.1	105.0	109.4	24	105.6	106.3	106.8	24			
9/2	103.5	104.0	104.6	24	103.1	103.7	104.1	24	103.8	104.0	104.1	24	103.0	103.4	103.7	24	105.0	105.9	106.0	24			
9/3	101.4	101.7	102.2	24	101.1	101.4	101.6	24	102.3	102.7	103.5	24	101.4	101.8	102.0	24	101.3	101.7	102.4	24			
9/4	100.8	101.0	101.4	24	100.7	101.1	101.4	24	101.8	102.5	103.2	24	101.0	101.7	102.0	24	100.4	100.9	101.2	24			
9/5	101.1	101.7	102.5	24	101.2	101.6	102.1	24	101.9	102.7	103.2	24	100.8	101.2	101.6	24	101.0	101.4	101.7	24			
9/6	101.4	101.8	102.8	24	101.1	101.4	101.8	24	101.7	102.3	103.7	24	100.8	101.6	102.2	24	101.5	102.1	102.5	24			
9/7	101.9	102.2	102.4	24	101.4	101.8	102.2	24	101.5	101.8	102.4	24	100.6	101.2	101.6	24	102.0	102.4	102.8	24			
9/8	103.1	103.7	104.2	24	102.0	102.6	103.0	24	101.3	101.5	101.6	24	100.4	100.7	101.1	24	101.7	101.9	102.4	24			
9/9	102.2	102.4	102.6	24	101.4	101.8	102.1	24	100.5	100.7	101.2	24	99.4	99.8	100.0	24	100.2	100.5	101.1	24			
9/10	102.3	102.9	103.3	24	101.3	101.7	102.1	24	100.2	100.8	101.5	24	98.1	98.7	98.9	24	99.3	99.5	99.6	24			
9/11	101.5	102.0	102.8	23	100.6	101.0	101.4	23	99.7	100.1	100.7	23	97.3	97.8	98.2	23	99.0	99.3	99.6	23			

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas\Washougal</u>			#	<u>Cascade Island</u>						
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		<u>24h</u>	<u>AVG</u>	<u>High</u>	<u>#</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>	<u>Avg</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>
8/29	113.0	113.2	113.5	24	108.2	108.5	109.2	24	115.7	116.0	116.1	24	113.2	113.6	114.0	24	115.3	116.7	118.3	24			
8/30	112.8	113.2	113.5	24	107.1	107.3	107.7	24	116.3	117.4	118.0	24	112.6	113.1	113.7	24	116.1	117.9	118.4	24			
8/31	112.6	113.5	114.1	24	105.9	106.2	106.8	24	115.9	116.9	117.8	24	112.9	114.8	116.0	24	115.5	117.2	118.7	24			
9/1	107.8	109.0	112.8	24	105.8	106.2	106.3	24	109.5	111.9	117.0	24	113.0	114.2	115.4	24	114.7	115.1	116.0	24			
9/2	106.2	106.8	107.0	24	106.0	106.2	106.3	24	106.2	106.6	107.0	24	107.0	108.1	111.0	24	112.8	115.2	117.0	24			
9/3	103.1	103.8	104.4	24	103.6	104.0	104.9	24	103.9	104.4	105.0	24	104.2	104.7	105.0	24	111.2	113.8	117.8	24			
9/4	101.9	102.2	102.4	24	102.3	102.6	102.9	24	103.7	104.2	104.7	24	103.5	103.8	104.2	24	109.8	112.2	114.9	24			
9/5	102.3	102.9	103.3	24	101.8	102.1	102.4	24	102.7	103.2	103.7	24	102.7	103.0	103.3	24	110.0	112.6	115.9	24			
9/6	102.7	103.1	103.4	24	101.9	102.1	102.3	24	103.6	104.6	105.0	24	102.3	102.9	103.3	24	108.8	110.6	113.0	24			
9/7	103.5	104.0	104.3	24	102.0	102.3	102.7	24	104.1	104.8	105.2	24	103.2	104.2	105.0	24	109.2	111.1	114.0	24			
9/8	103.4	103.7	103.7	24	102.0	102.2	102.4	24	104.1	104.3	104.7	24	103.6	103.9	104.3	24	107.5	109.5	113.9	24			
9/9	103.5	104.9	105.5	24	100.2	100.5	100.9	24	103.7	104.3	105.0	24	102.7	103.3	103.7	24	107.6	109.4	110.5	24			
9/10	103.0	104.7	105.4	24	100.0	100.4	100.8	24	103.4	104.2	105.0	24	103.1	103.9	104.5	24	107.6	109.4	111.4	24			
9/11	102.9	104.6	105.4	23	99.8	100.0	100.4	23	101.6	101.9	102.5	23	101.3	101.8	102.7	23	107.5	109.0	112.3	23			

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 9/12/2014 7:15

Two-Week Summary of Passage Indices

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

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

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

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

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)
08/29/2014	*	---	---	---	---	0	0	0	0	0	0
08/30/2014	*	---	---	---	---	0	0	2	0	---	---
08/31/2014	*	---	---	---	---	0	0	0	0	---	0
09/01/2014	*	---	---	---	---	0	0	0	---	---	---
09/02/2014	*	---	---	---	---	0	0	0	---	0	0
09/03/2014	*	---	---	---	---	0	0	0	---	---	---
09/04/2014	*	---	---	---	---	0	0	0	---	0	0
09/05/2014	*	---	---	---	---	1	0	0	---	0	---
09/06/2014	*	---	---	---	---	0	0	0	---	0	0
09/07/2014	*	---	---	---	---	0	0	2	---	---	0
09/08/2014	*	---	---	---	---	0	0	0	---	0	0
09/09/2014	*	---	---	---	---	0	0	0	---	0	0
09/10/2014	*	---	---	---	---	0	0	0	---	0	0
09/11/2014	*	---	---	---	---	0	0	0	---	---	0
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
<hr/>											
Total:		0	0	0	0	1	0	4	0	0	0
# Days:		0	0	0	0	14	14	14	3	7	4
Average:		0	0	0	0	0	0	0	0	0	0
YTD		65,404	63,591	25,420	10,159	4,807,475	2,838,738	1,969,633	26,427	2,022,048	2,320,483

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)
08/29/2014	*	---	---	---	581	208	31	67	2,060	79	1,511
08/30/2014	*	---	---	---	566	161	31	34	---	---	---
08/31/2014	*	---	---	---	675	330	22	24	2,037	---	443
09/01/2014	*	---	---	---	339	278	19	---	---	---	---
09/02/2014	*	---	---	---	263	137	12	---	300	97	498
09/03/2014	*	---	---	---	216	91	15	---	---	---	---
09/04/2014	*	---	---	---	262	72	13	---	260	---	581
09/05/2014	*	---	---	---	341	66	19	---	---	47	---
09/06/2014	*	---	---	---	222	38	32	---	328	---	396
09/07/2014	*	---	---	---	149	32	82	---	---	---	343
09/08/2014	*	---	---	---	82	26	102	---	212	---	181
09/09/2014	*	---	---	---	80	29	81	---	---	8	135
09/10/2014	*	---	---	---	59	34	155	---	120	---	137
09/11/2014	*	---	---	---	47	33	201	---	---	---	339
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
<hr/>											
Total:		0	0	0	3,882	1,535	815	125	5,317	231	4,564
# Days:		0	0	0	14	14	14	3	7	4	10
Average:		0	0	0	277	110	58	42	760	58	456
YTD		0	27	4	332	947,992	1,047,687	380,796	38,664	4,914,166	2,591,828

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)
08/29/2014	*	---	---	---	2	0	0	0	0	0	0
08/30/2014	*	---	---	---	0	0	0	0	---	---	---
08/31/2014	*	---	---	---	0	0	0	0	0	---	0
09/01/2014	*	---	---	---	0	0	0	---	---	---	---
09/02/2014	*	---	---	---	0	0	0	---	0	0	0
09/03/2014	*	---	---	---	0	0	0	---	---	---	---
09/04/2014	*	---	---	---	0	0	0	---	0	---	0
09/05/2014	*	---	---	---	0	0	0	---	---	0	---
09/06/2014	*	---	---	---	0	0	0	---	0	---	0
09/07/2014	*	---	---	---	0	0	0	---	---	---	0
09/08/2014	*	---	---	---	0	0	0	---	0	---	0
09/09/2014	*	---	---	---	0	0	0	---	---	0	0
09/10/2014	*	---	---	---	0	0	0	---	0	---	0
09/11/2014	*	---	---	---	0	0	0	---	---	---	0
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	2	0	0	0	0	0	0
# Days:		0	0	0	14	14	14	3	7	4	10
Average:		0	0	0	0	0	0	0	0	0	0
YTD		0	0	0	267	74,170	59,431	27,316	66,433	147,455	225,188

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)
08/29/2014	*	---	---	---	0	4	2	1	0	0	0
08/30/2014	*	---	---	---	2	0	0	3	---	---	---
08/31/2014	*	---	---	---	0	0	0	3	0	---	0
09/01/2014	*	---	---	---	0	0	0	---	---	---	---
09/02/2014	*	---	---	---	0	0	1	---	0	0	0
09/03/2014	*	---	---	---	0	0	0	---	---	---	---
09/04/2014	*	---	---	---	1	0	0	---	0	---	0
09/05/2014	*	---	---	---	0	1	1	---	---	0	---
09/06/2014	*	---	---	---	0	0	1	---	0	---	0
09/07/2014	*	---	---	---	1	0	0	---	---	---	0
09/08/2014	*	---	---	---	1	1	0	---	0	---	0
09/09/2014	*	---	---	---	3	0	1	---	---	0	0
09/10/2014	*	---	---	---	0	0	0	---	0	---	0
09/11/2014	*	---	---	---	0	0	0	---	---	---	0
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	8	6	6	7	0	0	0
# Days:		0	0	0	14	14	14	3	7	4	10
Average:		0	0	0	1	0	0	2	0	0	0
YTD		2,080	43,465	4,243	12,842	3,376,192	1,975,620	1,183,215	27,522	586,885	1,032,890

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)
08/29/2014	*	---	---	---	---	2	0	0	0	0	0
08/30/2014	*	---	---	---	---	0	0	0	2	---	---
08/31/2014	*	---	---	---	---	0	0	0	2	0	0
09/01/2014	*	---	---	---	---	3	0	0	---	---	---
09/02/2014	*	---	---	---	---	0	1	0	---	10	0
09/03/2014	*	---	---	---	---	0	1	0	---	---	---
09/04/2014	*	---	---	---	---	2	0	0	---	0	0
09/05/2014	*	---	---	---	---	0	0	0	---	---	0
09/06/2014	*	---	---	---	---	0	0	0	---	0	0
09/07/2014	*	---	---	---	---	0	1	0	---	---	0
09/08/2014	*	---	---	---	---	0	2	0	---	4	0
09/09/2014	*	---	---	---	---	2	1	0	---	---	0
09/10/2014	*	---	---	---	---	0	2	0	---	0	0
09/11/2014	*	---	---	---	---	0	2	0	---	---	0
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	9	10	0	4	14	0
# Days:		0	0	0	0	14	14	14	3	7	4
Average:		0	0	0	0	1	1	0	1	2	0
YTD		0	0	2	0	182,058	88,449	69,804	37,962	1,495,578	577,701

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR [†] (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
08/29/2014	*	---	---	---	---	1	8	0	0	20	0
08/30/2014	*	---	---	---	---	4	7	1	1	---	---
08/31/2014	*	---	---	---	---	2	12	1	1	50	0
09/01/2014	*	---	---	---	---	0	7	1	---	---	---
09/02/2014	*	---	---	---	---	0	11	0	---	80	0
09/03/2014	*	---	---	---	---	2	12	0	---	---	---
09/04/2014	*	---	---	---	---	0	18	0	---	48	10
09/05/2014	*	---	---	---	---	0	5	0	---	---	0
09/06/2014	*	---	---	---	---	0	20	1	---	24	7
09/07/2014	*	---	---	---	---	0	17	0	---	---	0
09/08/2014	*	---	---	---	---	0	2	2	---	0	0
09/09/2014	*	---	---	---	---	1	1	0	---	---	0
09/10/2014	*	---	---	---	---	0	5	0	---	8	0
09/11/2014	*	---	---	---	---	0	13	0	---	---	0
09/12/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	0	10	138	6	2	230	0
# Days:		0	0	0	0	14	14	14	3	7	4
Average:		0	0	0	0	1	10	0	1	33	0
YTD		1	3	0	0	175	21,011	29,488	220	60,665	98,903

Two-Week Summary of Passage Indices

* See sampling comments

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

Smolt indices, clipped & unclipped or combined, are presented in the following order: yearling chinook (chinook 1's,) subyearling chinook (chinook 0's), steelhead, coho, sockeye, and lamprey juveniles. Two classes of fish counts are shown in these tables:

Two classes of fish counts are shown in these tables:

Sample counts (Samp) are provided for juvenile lamprey at LGR. See note below for details †.

Collection counts (Coll), which account for sample rates but are not adjusted for flow;

Passage indices (INDEX), which are collection counts divided by the proportion of water passing through the sampled powerhouse.

Passage indices are not population estimates, but are used to adjust collection counts for daily fluctuations in the site's or project's operations.

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Combined lamprey juvenile collection counts are provided for all sites. Combined lamprey juveniles is a combination of pacific lamprey ammocoetes, brook lamprey ammocoetes, unknown lamprey ammocoetes, pacific lamprey macrophthalmia, and unidentified lamprey species.

† In 2013 it was confirmed that juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection. Therefore, only sample counts are provided in this report.

Definitions for Smolt Index Counts

WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts

IMN (Collection) = Imnaha River Trap : Collection Counts

GRN (Collection) = Grande Ronde River Trap : Collection Counts

LEW (Collection) = Snake River Trap at Lewiston : Collection Counts

LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)

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

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

9/12/14 7:14 AM

08/29/14 TO 09/12/14

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
LGR	Sum of NumberCollected	2,946	1	1	7	7	2,962	
	Sum of NumberBarged	0	0	0	0	0	0	
	Sum of NumberBypassed	0	0	0	7	0	7	
	Sum of Numbertrucked	2,920	1	1	0	7	2,929	
	Sum of SampleMorts	26	0	0	0	0	26	
	Sum of FacilityMorts	0	0	0	0	0	0	
	Sum of ResearchMorts	0	0	0	0	0	0	
	Sum of TotalProjectMorts	26	0	0	0	0	26	
LGS	Sum of NumberCollected	1,250				5	10	1,265
	Sum of NumberBarged	0				0	0	0
	Sum of NumberBypassed	0				0	1	1
	Sum of Numbertrucked	1,206				5	6	1,217
	Sum of SampleMorts	33				0	3	36
	Sum of FacilityMorts	11				0	0	11
	Sum of ResearchMorts	0				0	0	0
	Sum of TotalProjectMorts	44				0	3	47
LMN	Sum of NumberCollected	764	3			5		772
	Sum of NumberBarged	0	0			0		0
	Sum of NumberBypassed	0	0			0		0
	Sum of Numbertrucked	644	3			5		652
	Sum of SampleMorts	120	0			0		120
	Sum of FacilityMorts	0	0			0		0
	Sum of ResearchMorts	0	0			0		0
	Sum of TotalProjectMorts	120	0			0		120
Total Sum of NumberCollected		4,960	4	1	17	17		4,999
Total Sum of NumberBarged		0	0	0	0	0		0
Total Sum of NumberBypassed		0	0	0	0	7	1	8
Total Sum of Numbertrucked		4,770	4	1	10	13		4,798
Total Sum of SampleMorts		179	0	0	0	0	3	182
Total Sum of FacilityMorts		11	0	0	0	0	0	11
Total Sum of ResearchMorts		0	0	0	0	0	0	0
Total Sum of TotalProjectMorts		190	0	0	0	0	3	193

YTD Transportation Summary

Source: Fish Passage Center

Updated:

9/12/14 7:14 AM

TO: 09/12/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	645,008	3,442,339	52,723	130,974	2,404,244	6,675,288
	Sum of NumberBarged	622,537	1,939,440	48,991	70,855	1,326,856	4,008,679
	Sum of NumberBypassed	11,727	1,501,375	3,722	59,638	1,077,100	2,653,562
	Sum of NumberTrucked	8,707	1	1	19	0	8,728
	Sum of SampleMorts	480	139	1	47	60	727
	Sum of FacilityMorts	1,547	1,305	8	415	121	3,396
	Sum of ResearchMorts	10	79	0	0	107	196
	Sum of TotalProjectMorts	2,037	1,523	9	462	288	4,319
LGS	Sum of NumberCollected	739,117	1,951,719	41,832	61,243	1,369,630	4,163,541
	Sum of NumberBarged	731,173	1,768,377	40,932	54,864	1,149,468	3,744,814
	Sum of NumberBypassed	324	182,657	890	6,110	220,103	410,084
	Sum of NumberTrucked	6,011	0	0	8	6	6,025
	Sum of SampleMorts	226	34	1	24	16	301
	Sum of FacilityMorts	1,383	651	9	237	167	2,447
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,609	685	10	261	183	2,748
LMN	Sum of NumberCollected	257,985	1,326,226	19,905	48,375	792,151	2,444,642
	Sum of NumberBarged	253,846	1,138,579	17,505	45,110	686,179	2,141,219
	Sum of NumberBypassed	616	177,066	0	2,568	89,957	270,207
	Sum of NumberTrucked	1,368	4	0	1	9	1,382
	Sum of SampleMorts	214	25	0	1	17	257
	Sum of FacilityMorts	541	964	0	301	193	1,999
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	755	989	0	302	210	2,256
Total Sum of NumberCollected		1,642,110	6,720,284	114,460	240,592	4,566,025	13,283,471
Total Sum of NumberBarged		1,607,556	4,846,396	107,428	170,829	3,162,503	9,894,712
Total Sum of NumberBypassed		12,667	1,861,098	4,612	68,316	1,387,160	3,333,853
Total Sum of NumberTrucked		16,086	5	1	28	15	16,135
Total Sum of SampleMorts		920	198	2	72	93	1,285
Total Sum of FacilityMorts		3,471	2,920	17	953	481	7,842
Total Sum of ResearchMorts		10	79	0	0	107	196
Total Sum of TotalProjectMorts		4,401	3,197	19	1,025	681	9,323

Cumulative Adult Passage at Mainstem Dams Through: 09/11

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	09/11	188083	26094	83345	33820	130283	22257	109734	25342	93097	26186	85511	18881	461169	48903	573567	59725	256165	33043
TDA	09/11	143142	21080	69202	32311	99813	18973	96134	19525	85639	20750	73080	14947	238914	27421	255112	39890	117987	22713
JDA	09/11	123224	19103	56991	28957	87036	17743	86033	17655	75248	19714	65621	15576	160995	17363	132435	32650	75071	18217
MCN	09/11	107147	16033	52176	22279	79413	14950	87974	17022	75741	14808	61586	11232	91914	11396	92148	14375	48257	9878
IHR	09/11	79298	12428	38017	18611	54814	9602	17433	4474	11912	6321	16717	4436	18985	2778	25582	6932	12101	4692
LMN	09/11	79942	14020	36470	19053	54458	8539	16064	8136	11765	7703	18241	4639	16593	3081	19449	5871	9825	4084
LGS	09/11	77966	13649	35072	19443	49920	9660	17058	7477	10120	7632	17208	5330	12833	1749	18186	5022	8326	2825
LGR	09/11	79167	13732	35031	19940	49728	11001	14668	7106	8423	7572	15316	5918	10411	1525	8067	2087	5807	2457
PRD	09/10	23742	2649	13725	1298	14700	1468	78434	4889	71083	3174	52746	2498	12668	3090	23524	6535	10050	2782
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	09/10	23247	2934	13345	3100	13890	2468	77982	6494	68386	3986	50079	5174	4537	2729	4835	7575	3423	1883
RRH	09/10	12376	2377	6841	2101	5576	1020	58569	5017	59685	4044	38940	4099	3527	2029	3535	4226	2642	1201
WEL	09/10	15376	2544	7133	2980	4880	1164	49255	5989	49451	4264	29289	3038	1087	741	1460	256	1356	542
WFA	09/10	30071	1598	27897	1664	40347	1124	0	0	0	0	0	0	416	87	774	207	364	67

DAM	END DATE	Coho						Sockeye			Steelhead			Lamprey					
		2014		2013		10-Yr Avg.		2014	2013	10-Yr Avg.	2014	2013	10-Yr Avg.	2014	2013	10-Yr Avg.			
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	09/11	65565	4365	19410	2178	44082	2321	614179	185505	192204	255206	204351	297089	110065	90162	97545	31544	23487	24165
TDA	09/11	24117	3482	3713	542	10849	1395	586182	161896	159036	140696	109832	172153	63321	50974	58882	11076	8477	6179
JDA	09/11	10653	1420	1275	220	7384	1193	557530	155486	161067	85062	69459	137674	36897	30769	46463	8011	6035	5607
MCN	09/11	4342	1282	318	97	2634	335	545998	134192	135990	74814	52862	99399	33138	23467	32365	1582	1401	1988
IHR	09/11	270	94	75	33	173	20	2390	895	505	35944	35871	60572	12344	10714	15654	689	284	266
LMN	09/11	161	117	51	8	95	8	2803	1014	632	34391	27486	53847	13977	10538	15953	216	106	76
LGS	09/11	132	49	74	14	57	13	2810	989	607	22459	15317	38982	10240	6814	11480	127	34	43
LGR	09/11	9	1	1	0	5	1	2765	738	681	24014	14536	34569	11486	6823	11215	76	18	11
PRD	09/10	143	22	26	3	370	60	608127	163078	167425	9683	7811	12659	0	0	0	6245	5064	3060
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	09/10	2	0	0	0	104	32	581054	159196	164839	6481	5593	10457	3181	3290	4920	2312	1685	968
RRH	09/10	0	0	0	0	4	1	492812	131654	139952	3760	4078	7698	1832	2252	3374	3371	1211	435
WEL	09/10	0	0	0	0	0	0	490711	129967	133687	2777	3171	4906	1441	1675	2136	5	20	2
WFA	09/10	75	154	1121	625	484	170	0	0	0	27055	17745	25121	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.