Fish Passage Center

Weekly Report #14 - 14

June 20, 2014

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Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 62% and 198% of average at individual sub-basins over June. Precipitation above The Dalles has been 89% of average over June. Over the 2014 water year, precipitation has ranged between 76% and 102% of average.

Table 1. Summary of June precipitation and cumulative October through June 19, 2014, precipitation with respect to average (1971–2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2014 June 1-19, 2014		Water Year 2014 October 1, 2013 to June 19, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	2.36	115	29.0	95
Snake River above Ice Harbor	0.67	65	15.2	79
Columbia above The Dalles	1.17	89	19.5	84
Kootenai	2.24	97	30.9	99
Clark Fork	1.58	102	18.6	82
Flathead	3.93	198	30.4	102
Pend Oreille River Basin above Waneta Dam	2.63	149	24.9	91
Salmon River Basin	1.03	66	18.5	76
Upper Snake Tributaries	0.81	74	20.1	88
Clearwater	1.87	99	32.6	92
Willamette River above Portland	0.97	62	50.1	84

Table 2 displays the June 19th ESP runoff volume forecasts for multiple reservoirs along with the June COE forecasts at Libby and Dworshak. The June 19th ESP forecast at The Dalles between January and July is 107,231 Kaf (106% of average).

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

Location	June 19, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	106	107231
Grand Coulee (Jan–July)	108	64405
Libby Res. Inflow, MT (Apr–Aug)	117	6887 7074*
Hungry Horse Res. Inflow, MT (Jan–July)	128	2680
Lower Granite Res. Inflow (Apr–July)	98	19497
Brownlee Res. Inflow (Apr–July)	65	3565
Dworshak Res. Inflow (Apr–July)	122	2956 2933*

* Denotes COE June Forecast

Grand Coulee Reservoir is at 1287.7 feet (6-19-14) and has refilled 4.4 feet over the last week. Outflows at Grand Coulee have ranged between 105.1 and 173.6 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2432.3 feet (6-19-14) and has refilled 5.7 feet over the previous week. The daily average outflows at Libby Dam have been decreased from 20.0 Kcfs to 17.0 over the last week.

Hungry Horse is currently at an elevation of 3547.6 feet (6-19-14) and has refilled 6.8 feet over the previous week. Outflows at Hungry Horse have been 3.0 Kcfs over the last week.

Dworshak is currently at an elevation of 1592.6 feet (6-19-14) and has refilled 7.5 feet over the previous week. Outflows at Dworshak have been 1.6 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2076.5 feet on June 19, 2014. Inflows to Brownlee Dam have ranged between 12.1 and 16.4 Kcfs last week.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2014), the flow objective this spring is 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 75.6 Kcfs over the last week and 92.1 Kcfs over the spring season.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (which began April 10th) and 135 Kcfs at Priest Rapids Dam (which began April 10th). Over the last week, flows at McNary Dam averaged 241.6 Kcfs over the last week and 287.7 over the spring period. Flows at Priest Rapids Dam have averaged 153.7 Kcfs over the last week and 183.1 Kcfs over the spring period.

Spill

The 2014 fish spill program was initiated at the lower Snake River projects beginning on April 3rd and on April 10th at the lower Columbia River projects. The Snake River projects will transition to the summer spill program on June 21st. At the lower Columbia projects summer spill was initiated on June 16th. Summer spill operations throughout the FCRPS will continue until August 31st.

Spill according to the Spring Fish Operations Plan (FOP) was implemented. Spill equal to 20 Kcfs occurred at Lower Granite Dam. Spill at Little Goose Dam averaged close to the 30% of total flow volume as specified in the FOP. At Lower Monumental Dam spill was at the gas cap levels associated with the higher gas producing bulk spill pattern specified in the FOP. On April 28th the "test-like" conditions, where spill alternates between 30% instantaneous and 45 Kcfs/ Gas Cap, were initiated at Ice Harbor Dam. In general, the net effect of the "test-like" operation is an overall decrease in spill levels during the implementation period.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	30%/30% vs. 45 Kcfs/Gas Cap

At the Middle Columbia River projects, McNary Dam spilled 40% of daily average flow until June 16th when it increased to the 50% summer level. At John Day Dam the testing of the 30% and 40% spill levels occurred over the past week. Spill at The Dalles Dam averaged 40% of total daily flow. Bonneville Dam spilled an instantaneous 100 Kcfs until June 16th when operations changed to an alternating 85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs.

Project	Spill Level Day/Night
McNary	40%/40% 50%/50% (beginning 6/16)
John Day	**Testing**: 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs 85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs (beginning 6/16)

New this year is a change in the way the U.S. Army Corps of Engineers will assess whether a project is in compliance with the total dissolved gas variances in place. The States of Oregon and Washington use different methodologies to estimate the 12-hour average TDG. For Oregon, the 12-hour average is based on the 12 highest hourly TDG measurements in a single calendar day (not necessarily consecutive). For Washington, the 12-hour average is based on 12-hour rolling averages. The highest of the rolling averages is what is reported as the 12-hour average for a given day. In 2014, the location of a TDG monitor and/or type of monitor will dictate which of these methodologies is used for compliance monitoring. The Washington methodology will apply to all the lower Snake River projects, as well as the lower Columbia River forebay monitors (since Oregon does not have a forebay TDG requirement). On any given day the compliance of the tailrace monitors at the lower Columbia River projects will be determined using either the Washington or Oregon methodology, whichever is the most restrictive, and spill may be decreased if needed.

Monitoring for signs of gas bubble trauma (GBT) occurred at Little Goose, Lower Monumental, McNary, Bonneville, and Rock Island dams over the past week. At Bonneville Dam 1% of fish were affected with Rank 1 signs on 6/17. No other sites reported GBT signs this past week. The action criterion for GBT is 15% of total fish with any signs of GBT in the fins, or 5% with severe signs (Rank 3 or greater).

Smolt Monitoring

Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, LGR). The Imnaha River Trap (IMN) is the only trap from the SMP that is still operating for the 2014 season.

Passage of spring migrants (e.g., yearling Chinook, steelhead, coho, and sockeye) continued to decrease at most of the SMP sites this week, when compared to last week. Subyearling Chinook continued to dominate the collections at all the SMP dam sites this week. On average, passage of subyearling Chinook increased at all SMP dam sites this week except Lower Monumental Dam (where subyearling Chinook passage decreased) and John Day Dam (where daily average subyearling Chinook passage this week was virtually the same as last week).

At Bonneville Dam (BON), subyearling Chinook passage continued to increase this week while passage of all other salmonid species continued to decrease. The daily average passage index for subyearling Chinook at BON this week was about 7,400 per day. Last week's daily average passage index was about 7,000 per day. With exception to one day for coho, the daily passage indices for yearling Chinook, steelhead, coho, and sockeye over the last week have all been less than 1,000 fish. Finally, Pacific lamprey macropthalmia were collected at BON every day this week. This week's daily average collection for Pacific lamprey macropthalmia at BON was about 120 per day, which is a decrease over last week's daily average collection of about 260 per day.

Passage of spring migrants at John Day Dam (JDA) continued to decrease this week when compared to last week. In fact, the daily passage index for each species of spring migrant was less than 500 every day this week. On average, passage of subyearling Chinook did not change when compared to last week. This week's daily average passage index for subyearling Chinook was about 9,300 per day this week. Pacific lamprey ammocoetes were encountered in only one of this week's samples while Pacific lamprey macropthalmia were present every day this week. The daily average collection for Pacific lamprey macropthalmia this week was about 1,000 per day, which is a decrease from last week's daily average collection of nearly 2,000 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Subyearling Chinook passage increased substantially again this week when compared to the previous week. The daily average passage index for subyearling Chinook at MCN this week was about 49,000 per day. Last week's daily average passage index for subyearling Chinook was about 29,000. Steelhead passage also increased this week, when compared to last week. This week's daily average passage index for steelhead at MCN was about 1,150 per day. Last week's daily average passage index was only about 640 per day. Passage of all other spring migrants continued to decrease this week. On June 14th, McNary collected its first, and so far only, Pacific lamprey ammocoete of the 2014 season. Pacific lamprey macropthalmia were encountered every day this week. The daily average collection for Pacific lamprey macropthalmia this week was about 400 per day, which is a decrease from last week's daily average collection of about 3,600.

Subyearling Chinook continued to dominate the collections at Lower Granite Dam (LGR) this week. This week's daily average passage index for subyearling Chinook at LGR was about 22,300 per day, which is an increase over last week's daily average passage index of about 17,000 per day. Passage of most spring migrants continued to decrease this week, when compared to last week. Pacific lamprey ammocoetes were encountered in three of this week's samples but no Pacific lamprey macropthalmia were encountered at LGR this week.

This week's samples at Little Goose Dam (LGS) were again dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 32,400 per day, which is an increase

over last week's daily average passage index of about 25,400 per day. As with LGR, passage of most spring migrants continued to decrease this week, when compared to last week. Pacific lamprey ammocoetes were collected in four of this week' samples while macropthalmia were collected in only three of this week's samples.

Subyearling Chinook continued to dominate the samples at Lower Monumental Dam (LMN) this week. This week's daily average passage index for subyearling Chinook at LMN was 8,700 per day, which is a decrease over last week's daily average passage index of 15,000 per day. As with most other sites, passage of spring migrants at LMN continued to decrease this week. Only Pacific lamprey macropthalmia have been collected so far this year at LMN. Pacific macropthalmia were present in only two of this week's samples.

Collections at Rock Island Dam (RIS) this week continued to be dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was about 650 per day, which was an increase over last week's daily average passage index of about 600 per day. Furthermore, subyearling Chinook passage has increased substantially over the last 2 days of sampling, when compared to samples from previous days. Passage of spring migrants continued to decrease this week. In fact, the daily average passage indices for spring migrants were all less than 100 fish of each species per day. Finally, Pacific lamprey macropthalmia were encountered only twice this week.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at IMN is year-round, however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through June 17th. Steelhead dominated the collections at IMN for the period of June 11th to June 17th, with a daily average collection of about 80 fish per day. The daily average collection for yearling Chinook during this same period was about 25 fish per day.

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 700,000 spring Chinook parr are scheduled for release into this zone over the next 2 weeks. Of these, about 400,000 are scheduled to be released into Meadow Creek, a tributary of the Selway River. The remaining 300,000 are schedule to be released directly into the Upper Selway River. These spring Chinook parr are 100% unmarked and are not expected to out-migrate until the spring of 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. A volitional release of about 3.45 million subyearling fall Chinook juveniles from Ringold Hatchery began on June 16th. This volitional release is expected to run through the end of next week. All subyearling fall Chinook released from Ringold Hatchery are expected to be adipose fin clipped. Many of the volitional releases of coho and summer steelhead juveniles that began several weeks ago were scheduled to end this week.

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 new releases scheduled for this zone this week. Approximately 6.6 million subyearling fall Chinook brights are scheduled for release into the Little White River, beginning on or around July 1st. There are no other releases scheduled for this zone over the next 2 weeks.

Adult Passage

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 1,709 and 2,973 adult summer Chinook in the last week. The 2014 summer Chinook count of 46,215 is about 1.13 times greater than the 2013 count and 1.2 times greater than the 10-year average. The 2014 Bonneville Dam summer Chinook

jack count of 8,286 is 68.8% of the 2013 count, while having 467 more fish than the 10-year average count. At McNary Dam 22,308 adult summer Chinook have been counted. The 2014 adult summer Chinook count at McNary Dam has 766 more fish than the 2013 count and is about 1.5 times greater than the 10-year average. The 2014 McNary Dam summer Chinook jack count of 3,248 is about 72.2% of the 2013 count, while being 1.14 times greater than the10-year average count. The 2014 adult summer Chinook count at Lower Granite Dam in the Snake River of 1,707 is about 2.2 times greater than the 2013 count and about 1.2 times greater than the 10-year average count. The 2014 Lower Granite summer Chinook jack count of 468 is about 89.6% of the 2013 count, while being 1.3 times greater than the 10-year average count.

The 2014 Bonneville Dam adult steelhead count of 9,522 is about 1.9 times greater than the 2013 count of 4,967 and has 74 more fish than the 10-year average count of 9,448. The 2014 Bonneville Dam adult wild steelhead count of 2,550 is about 2 times greater than the 2013 count of 1,301 and has 93 more fish than the 10-year average count of 2,457. Daily adult steelhead counts at Lower Granite Dam ranged from 4 to 12 adults per day last week. This year's Lower Granite steelhead count of 7,628 has 152 more fish than the 2013 count of 7,476, while being about 85.9% of the 10-year average count of 8,877. The 2014 Lower Granite Dam adult wild steelhead count of 3,489 has 249 more fish than the 2013 count of 3,240 and is about 1.1 times greater than the 10-year average count of 3,158. At Willamette Falls, the 2014 count for steelhead was 17,187 as of June 16th. This year's steelhead count is about 1.21 times greater than the 2013 count of 14,161, while being about 89.7% of the 10-year average count of 19,158.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 3,869 and 8,533 last week. The 2014 adult sockeye count at Bonneville Dam of 49,521 is about 1.2 times greater than the 2013 count and about 1.3 times greater than the 10-year average count. The 2014 McNary Dam adult sockeye count of 15,660 is about 1.2 times greater than the 2013 count of 13,034 and about 2.2 times greater than the 10-year average count of 7,142.

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 have 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.

Visual observations of the exit retrofits have been promising. During Wanapum Dam site visits on May 7, May 21, June 4, and June 18, 2014, many fish have been seen passing the left bank fishway weir and chute. During these observations, fish generally pass the left bank weir quickly and there were no signs of stress or mortality upon entry into the forebay. On the dates of observation, no adult fish have been seen passing the right bank weir structure. 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 some barriers to prevent jumping outside the structure. On June 18, 2014, Grant PUD was in the process of installing the spiral flume at the right bank fishway and it was nearly completed.

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 of the left bank fishway.

The WDFW has noticed an unusually large percentage of adult fish at the Wells Dam Trap with significant injuries. The WDFW has sampled fish from the trap at Wells Dam for approximately 4 weeks and the last weeks of available sampling indicated that approximately 15% of fish had notable injuries. The source of these injuries continues to be investigated. The PUDs have all been reviewing video counts and recording significant injuries. Based on one week of video counts, the significant injury rate at Priest Rapids Dam is at approximately 1%. At Rock Island, based on count review between April 26, 2014, and June 5, 2014, the overall project significant injury rate is 0.6%. At Rocky Reach over the same dates, the rate is 0.3%. Additionally, the Leavenworth Hatchery has noted that of 778 adult spring Chinook collected, all looked in good shape, with nothing out of the ordinary. The fish coming into Leavenworth Hatchery would have to pass all dams below and including Rock Island Dam. Video Counts and injury rates at each ladder of Wells Dam from May 28, 2014 to June 16, 2014, are now available. This count review has shown an injury rate of 2.4% on the west ladder and 1.4% on the east ladder. The west ladder trap was dewatered last week and was inspected for any obstructions or sharp edges that could be contributing to west ladder elevated injury rates; nothing obvious was discovered. Discussions continue in terms of the cause of the injury seen at the Wells Dam West Ladder Trap.

Hatchery Releases Last Two Weeks

Hatchery Release Summary

From: 6/6/2014 to 06/19/14

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	252,889	06-10-14	06-10-14	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	255,283	06-10-14	06-10-14	Lukes Gulch Acclim.	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	526,278	06-11-14	06-11-14	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					**1,034,450**				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2014	200,000	06-12-14	06-12-14	Cpt John Acclim Pond	Snake River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2014	100,000	05-05-14	06-15-14	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2014	7,229,543	06-10-14	06-15-14	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2014	3,450,000	06-16-14	06-27-14	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					**10,979,543**				
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	72,750	04-15-14	06-15-14	Easton Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,105	04-15-14	06-15-14	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	92,376	04-15-14	06-15-14	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	94,680	04-15-14	06-15-14	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	140,342	04-15-14	06-15-14	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	43,408	04-15-14	06-15-14	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	108,570	04-15-14	06-15-14	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2014	221,567	04-15-14	06-15-14	Prosser Acclim Pond	Yakima River
Yakama Tribe Total					**865,798**				
Grand Total					**12,879,791**				

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: 6/20/2014 to 7/3/2014

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CH0	SP	2015	300,000	07-01-14	07-05-14	Selway River	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	SP	2015	400,000	06-25-14	07-01-14	Meadow Creek - SELW	Selway River
Nez Perce Tribe Total					**700,000**				
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2014	2,000,000	07-01-14	07-01-14	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2014	2,500,000	07-01-14	07-01-14	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Willard Hatchery	CH0	FA	2014	2,145,000	07-01-14	07-01-14	Willard Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service Total					**6,645,000**				
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2014	3,450,000	06-16-14	06-27-14	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					**3,450,000**				
Grand Total					**10,795,000**				

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

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
06/06/2014	157.7	0.1	156.7	30.2	181.2	10.0	180.6	25.0	188.9	43.7	192.9	68.5	212.0	80.9
06/07/2014	157.8	0.1	156.7	18.7	169.8	10.0	165.8	19.6	174.2	43.0	170.5	41.8	182.3	40.2
06/08/2014	156.5	0.1	152.4	2.5	171.7	12.3	166.7	20.7	174.6	41.1	172.6	50.3	182.8	43.8
06/09/2014	151.7	0.1	155.9	9.2	178.2	11.3	175.7	21.5	183.6	39.5	179.2	57.1	193.5	71.4
06/10/2014	140.8	0.1	144.1	0.0	161.9	10.0	158.8	17.1	166.9	38.4	168.3	46.8	181.6	39.7
06/11/2014	142.7	0.1	144.1	0.0	159.7	10.0	154.8	16.3	165.2	36.1	161.0	28.6	171.7	22.5
06/12/2014	103.4	0.1	108.1	0.0	125.6	10.0	130.2	12.2	138.8	25.6	140.5	20.2	157.9	21.4
06/13/2014	105.2	0.1	101.8	0.0	133.6	10.0	135.6	12.6	142.9	29.9	143.6	24.9	142.1	19.5
06/14/2014	107.2	0.1	106.5	0.0	123.7	10.0	116.4	12.4	123.2	28.8	124.7	20.0	138.3	20.9
06/15/2014	113.0	0.1	112.9	0.0	117.4	10.0	109.1	11.8	117.8	26.1	119.1	20.1	123.0	21.4
06/16/2014	131.4	0.1	126.9	0.0	141.6	10.0	137.6	13.1	144.3	29.2	132.1	9.4	135.7	23.8
06/17/2014	124.6	0.1	128.2	0.0	149.2	10.0	146.8	13.1	153.4	29.1	153.6	19.8	165.6	24.8
06/18/2014	158.4	0.1	154.9	17.5	171.0	11.2	161.4	24.2	166.1	34.1	155.0	22.2	167.5	25.9
06/19/2014	173.5	1.7	173.3	43.4	197.1	28.7	191.5	32.4	194.4	37.4	188.8	61.7	203.4	78.8

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

	Dworshak		Brownlee	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
06/06/2014	4.4	0.0	16.0	16.9	116.5	26.8	112.1	32.8	112.0	26.0	115.0	44.9
06/07/2014	4.4	0.0	15.3	16.3	109.8	20.5	105.0	31.4	104.8	25.9	108.5	54.7
06/08/2014	4.4	0.0	14.8	17.9	105.7	23.3	101.9	30.7	101.1	25.8	104.5	64.7
06/09/2014	4.4	0.0	14.2	15.9	103.5	20.4	100.2	29.9	100.9	24.1	104.8	46.4
06/10/2014	4.3	0.0	13.4	10.3	98.7	20.3	93.8	28.1	92.5	23.9	94.6	28.5
06/11/2014	4.1	0.0	13.0	14.0	95.1	20.3	91.0	27.3	91.7	23.8	96.9	50.5
06/12/2014	1.6	0.0	12.3	14.3	92.4	20.4	89.1	26.7	89.0	25.0	90.1	60.4
06/13/2014	1.5	0.0	12.5	9.1	88.5	20.3	85.5	25.6	85.6	24.6	88.1	41.4
06/14/2014	1.6	0.0	12.1	8.8	82.0	20.2	78.4	23.4	78.3	25.4	80.1	24.3
06/15/2014	1.5	0.0	13.3	9.1	72.9	20.3	72.0	21.6	72.9	26.2	74.3	46.3
06/16/2014	1.5	0.0	14.1	14.1	70.1	20.3	66.9	20.1	67.3	28.8	69.0	53.6
06/17/2014	1.5	0.0	15.8	14.8	72.2	20.4	69.3	20.8	72.4	29.6	76.1	32.2
06/18/2014	1.5	0.0	15.9	18.1	74.9	20.4	71.5	21.7	71.3	30.0	73.2	24.1
06/19/2014	1.5	0.0	16.4	17.6	68.6	20.3	66.1	19.7	66.5	29.4	67.7	42.2

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

	McNary		John Day		The Dalles		Bonneville			
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
06/06/2014	334.5	187.3	341.6	135.1	322.1	122.7	332.0	107.2	94.6	117.8
06/07/2014	306.6	154.9	306.3	117.3	290.1	115.5	313.5	100.7	90.3	110.0
06/08/2014	293.3	141.8	298.7	90.0	282.6	112.8	314.5	100.2	91.6	110.3
06/09/2014	293.8	144.9	285.8	90.8	269.2	107.7	289.2	100.0	71.5	105.3
06/10/2014	297.4	146.9	297.3	118.6	281.9	112.5	299.2	100.3	80.3	106.1
06/11/2014	278.9	130.3	280.8	107.5	262.7	105.3	285.9	100.6	70.8	102.0
06/12/2014	259.9	113.2	247.1	74.3	236.9	94.0	247.4	101.5	38.1	95.4
06/13/2014	250.7	100.8	239.7	76.2	219.3	87.8	250.9	100.7	31.4	106.5
06/14/2014	243.8	97.7	241.9	96.7	229.2	91.5	244.5	100.0	30.0	102.0
06/15/2014	214.9	86.1	211.9	81.0	198.2	79.3	224.1	100.3	12.6	98.9
06/16/2014	207.4	103.9	208.4	62.2	190.5	76.3	205.2	96.7	1.6	94.5
06/17/2014	253.2	126.8	227.5	71.9	213.2	85.3	229.8	96.0	20.7	100.6
06/18/2014	259.3	129.7	263.9	105.5	250.2	100.2	265.8	91.1	56.4	105.9
06/19/2014	261.9	131.1	251.9	95.9	235.0	93.8	252.6	96.1	41.0	103.1

Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank: Rank 1	Rank 2	Rank 3	Rank 4
Little Goose Dam											
	06/09/14	Chinook + Steelhead	99	0	0	0.00%	0.00%	0	0	0	0
	06/16/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	06/11/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/18/14	Chinook + Steelhead	50	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	06/09/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/13/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/15/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/19/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	06/07/14	Chinook + Steelhead	68	0	0	0.00%	0.00%	0	0	0	0
	06/11/14	Chinook + Steelhead	79	1	1	1.27%	0.00%	1	0	0	0
	06/14/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/17/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Rock Island Dam											
	06/10/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/12/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/17/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/19/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

	Hungry H. Dnst				Boundary				Grand Coulee				Grand C. Tlwr				Chief Joseph			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	104.9	105.3	105.7	24	---	---	---	0	117.8	118.2	118.4	24	114.6	114.9	115.3	24	114.9	115.2	115.3	24
6/7	104.7	105.1	105.6	24	---	---	---	0	117.8	118.0	118.0	24	115.0	115.3	115.5	24	115.4	115.6	115.8	24
6/8	104.9	105.3	105.6	24	---	---	---	0	117.6	117.8	117.9	24	115.3	115.8	116.3	24	115.8	116.2	116.5	24
6/9	102.6	104.0	105.3	24	---	---	---	0	118.2	118.3	118.5	24	115.7	115.9	116.4	24	116.1	116.4	116.8	24
6/10	101.1	101.5	102.1	24	---	---	---	0	118.1	118.3	118.5	24	115.6	115.9	116.4	24	115.6	115.9	116.1	24
6/11	100.8	101.2	101.6	24	---	---	---	0	118.3	118.5	118.8	24	115.4	116.1	116.8	24	115.3	115.8	115.9	24
6/12	102.9	104.2	104.6	24	---	---	---	0	119.4	119.7	120.2	24	116.0	116.5	117.2	24	116.9	117.5	117.9	24
6/13	103.7	104.0	104.1	24	---	---	---	0	118.9	119.1	119.4	24	115.1	115.4	116.1	24	116.4	116.5	117.0	24
6/14	103.2	103.3	103.4	24	---	---	---	0	118.8	118.9	119.3	24	115.2	115.6	116.0	24	116.1	116.5	116.7	24
6/15	103.3	103.5	103.8	24	---	---	---	0	119.6	119.7	120.0	24	115.9	116.3	116.5	24	116.6	116.9	117.2	24
6/16	103.5	103.8	104.0	24	---	---	---	0	119.4	119.6	119.9	24	115.8	116.0	116.7	24	115.9	116.1	116.3	24
6/17	103.2	103.4	103.8	24	---	---	---	0	118.6	119.0	119.2	24	114.8	115.3	115.5	24	114.7	115.1	115.5	24
6/18	104.0	104.2	104.6	24	---	---	---	0	119.0	119.5	119.7	24	115.2	115.6	116.0	24	115.1	115.8	116.1	24
6/19	104.2	104.6	105.0	23	---	---	---	0	118.4	118.7	119.2	23	115.5	115.8	116.0	23	115.7	116.0	116.4	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

	Chief J. Dnst				Wells				Wells Dwnstrm				Rocky Reach				Rocky R. Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	112.1	112.2	112.4	24	113.2	113.4	113.5	19	114.0	114.2	114.4	19	113.9	114.6	115.0	24	117.3	117.5	118.2	24
6/7	113.0	114.1	115.3	24	113.3	113.4	113.5	23	114.0	114.4	114.7	23	113.6	113.8	114.3	24	116.9	117.3	117.5	24
6/8	114.5	115.2	115.7	24	113.8	114.1	114.4	22	114.8	115.1	115.4	22	113.0	113.5	113.8	24	116.4	116.9	117.5	24
6/9	112.6	114.0	115.0	24	114.7	114.9	115.1	21	115.6	115.9	116.5	21	113.5	113.9	114.1	24	117.1	118.0	119.0	24
6/10	115.0	115.3	115.7	19	113.6	113.7	114.4	17	114.4	114.6	114.9	17	113.2	113.5	113.5	24	116.1	116.6	116.9	24
6/11	114.7	114.8	115.0	24	113.9	114.0	114.7	13	114.5	114.5	115.6	13	113.3	113.7	113.8	24	116.9	118.0	118.6	24
6/12	116.4	117.0	117.7	24	115.3	115.6	116.1	17	115.8	116.2	116.9	17	114.4	115.0	115.3	24	115.8	116.6	117.3	24
6/13	116.2	116.6	117.0	24	113.6	113.6	114.5	12	114.3	114.3	115.2	12	113.2	113.5	114.1	24	114.9	115.7	116.0	24
6/14	115.2	115.6	116.6	24	113.6	113.8	114.2	18	114.2	114.5	114.9	18	112.2	112.4	112.6	24	113.8	114.6	115.0	24
6/15	116.2	116.5	116.9	24	114.6	114.9	115.5	19	115.2	115.6	116.3	19	113.0	113.3	113.5	24	113.9	114.4	114.9	24
6/16	115.3	115.6	116.3	24	113.7	113.7	114.2	13	114.6	114.7	115.3	13	112.6	112.9	113.2	24	114.9	115.9	116.3	24
6/17	114.3	114.7	115.2	24	113.1	113.2	113.5	15	113.9	114.0	114.1	15	112.3	112.7	113.0	24	115.0	115.8	116.2	24
6/18	113.9	115.0	115.7	24	113.7	114.1	114.5	18	114.7	115.1	115.6	18	113.0	113.3	113.6	24	117.1	118.2	119.2	24
6/19	114.7	115.7	116.0	23	113.8	113.9	114.1	16	116.4	116.6	116.9	16	113.4	113.8	114.1	23	118.9	119.7	120.1	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock Island				Rock I. Tlwr				Wanapum				Wanapum Tlwr				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	113.5	114.1	114.6	23	116.8	117.6	118.0	22	115.6	116.2	116.5	24	118.7	120.2	120.5	24	119.0	120.6	121.4	24
6/7	113.3	113.8	114.2	24	116.4	117.2	117.6	24	114.4	115.5	116.1	24	114.5	115.6	116.9	24	114.5	116.0	119.5	24
6/8	112.7	113.7	114.5	24	115.6	116.6	117.0	24	113.7	114.7	115.2	24	115.5	116.4	117.4	24	113.8	115.1	117.4	24
6/9	113.0	113.8	114.9	24	115.7	116.7	117.5	24	112.7	113.7	114.4	24	115.9	116.4	116.7	24	113.5	114.2	114.9	24
6/10	112.1	112.6	113.0	24	115.9	117.3	118.3	24	112.2	113.4	114.4	24	113.9	115.0	115.9	24	112.6	113.2	114.0	24
6/11	112.8	114.0	114.8	24	116.3	118.1	118.7	24	113.3	115.1	115.7	24	113.2	114.4	114.9	24	111.4	112.6	113.6	24
6/12	113.1	113.5	114.0	24	110.2	115.1	117.5	24	114.8	115.9	116.9	24	114.1	115.1	115.9	24	113.5	114.1	114.4	24
6/13	111.9	112.2	112.6	24	110.0	114.9	115.5	24	110.0	110.6	112.3	24	110.6	111.9	120.0	24	110.7	112.0	113.6	24
6/14	111.3	111.7	112.0	24	103.2	106.5	114.7	24	108.8	109.8	110.7	24	108.9	109.8	110.4	24	107.1	107.3	107.5	24
6/15	111.4	111.8	112.1	24	100.0	100.0	100.1	24	110.5	111.4	112.3	24	110.1	110.7	111.5	24	107.8	108.2	108.4	24
6/16	111.2	111.6	112.0	24	107.8	115.0	115.2	24	109.1	109.8	110.1	23	109.0	109.5	109.9	23	107.3	107.7	108.2	23
6/17	111.4	111.7	112.1	24	114.2	115.2	115.6	24	110.9	111.9	112.3	24	110.6	111.5	111.8	24	107.6	108.4	109.2	24
6/18	112.8	114.2	115.9	24	114.4	117.1	118.3	22	112.0	113.5	114.0	24	111.9	113.6	116.7	24	109.8	110.2	110.8	24
6/19	113.4	114.7	116.0	23	116.7	118.6	119.1	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

	Priest R. Dnst				Pasco				Dworshak				Clrwtr-Peck				Anatone			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	118.9	119.4	120.0	24	---	---	---	0	100.3	100.9	101.5	24	103.1	104.1	104.7	24	106.1	106.8	107.4	24
6/7	114.4	115.3	117.2	24	---	---	---	0	100.2	100.8	101.4	24	102.8	103.7	104.3	24	106.0	106.7	107.1	24
6/8	114.2	115.2	115.8	24	---	---	---	0	100.2	100.8	101.4	24	102.9	104.0	104.6	24	106.0	106.9	107.5	24
6/9	115.8	116.1	116.3	24	---	---	---	0	100.7	101.3	101.7	24	103.0	104.0	104.5	24	105.9	106.7	107.3	24
6/10	113.6	114.7	115.6	24	---	---	---	0	100.6	101.2	101.7	24	102.8	103.7	104.3	24	105.4	106.1	106.7	24
6/11	111.5	112.2	113.2	24	---	---	---	0	100.9	101.6	102.1	24	103.0	104.2	104.9	24	105.5	106.5	107.1	24
6/12	113.5	114.0	114.4	24	---	---	---	0	105.9	107.6	109.1	24	103.0	103.6	104.1	24	105.4	105.9	106.6	24
6/13	111.2	111.6	112.6	24	---	---	---	0	104.9	105.6	106.4	24	102.0	102.4	102.7	24	104.5	105.0	105.8	24
6/14	109.2	109.6	110.5	24	---	---	---	0	104.5	104.9	105.2	24	101.9	102.2	102.5	24	104.5	105.0	105.6	24
6/15	109.8	110.4	110.5	24	---	---	---	0	105.7	106.8	107.8	24	102.4	102.9	103.5	24	104.8	105.4	105.9	22
6/16	109.7	110.1	110.6	23	---	---	---	0	106.0	106.8	107.6	24	101.8	102.2	102.5	24	104.1	104.5	105.2	24
6/17	109.7	110.1	110.5	24	---	---	---	0	105.0	105.4	105.7	24	101.1	101.5	101.6	24	103.4	103.8	104.0	24
6/18	110.9	111.1	111.4	24	---	---	---	0	105.5	106.3	107.0	24	101.8	102.3	102.6	24	104.0	104.6	104.9	24
6/19	---	---	---	0	---	---	---	0	106.2	107.5	108.5	23	102.3	103.3	104.1	23	104.4	105.3	106.1	23

Total Dissolved Gas Saturation Data at Snake River Sites

	Clrwtr-Lewiston				Lower Granite				L. Granite Tlwr				Little Goose				L. Goose Tlwr			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	102.9	103.7	104.2	24	105.1	105.2	105.3	24	114.1	115.1	117.0	24	112.1	112.5	113.3	24	115.5	116.2	116.3	24
6/7	102.8	103.4	104.0	24	105.0	105.1	105.2	24	111.2	111.5	113.8	24	111.9	112.2	112.4	24	115.2	115.7	116.1	24
6/8	103.0	103.9	104.6	24	105.0	105.1	105.3	24	111.9	112.9	117.1	24	111.0	111.7	112.1	24	114.7	115.3	115.5	24
6/9	103.0	103.9	104.6	24	105.4	105.5	105.7	24	110.9	111.1	111.4	24	110.5	110.8	111.6	24	114.4	114.9	115.1	24
6/10	102.7	103.5	103.9	24	105.5	105.6	105.7	24	111.0	111.1	111.6	24	109.9	110.1	110.2	24	113.9	114.1	114.3	24
6/11	102.9	103.9	104.6	24	104.7	104.9	105.1	24	110.8	111.1	111.4	24	108.8	109.1	109.3	24	113.3	113.5	113.6	24
6/12	102.7	103.3	104.3	24	105.0	105.2	105.3	24	111.0	111.3	111.7	24	109.6	110.0	110.4	24	113.7	114.1	114.5	24
6/13	101.8	102.4	103.3	24	104.0	104.2	104.4	24	110.3	110.5	110.9	24	107.8	108.1	108.7	24	112.7	113.0	113.3	24
6/14	101.6	102.1	102.5	24	103.0	103.2	103.5	24	109.9	110.2	110.6	24	106.3	106.4	106.6	24	112.3	112.6	113.1	24
6/15	102.5	103.5	104.1	24	103.0	103.3	103.5	24	110.9	111.4	111.9	24	105.9	106.2	106.3	24	113.4	113.7	114.5	24
6/16	102.0	102.7	103.4	24	103.0	103.1	103.4	24	111.7	112.1	112.8	24	105.9	106.1	106.2	24	112.7	113.6	114.0	24
6/17	100.9	101.2	101.5	24	102.6	102.7	102.8	24	110.7	111.0	111.5	24	105.5	105.7	105.9	24	111.5	112.0	112.1	24
6/18	102.1	103.3	104.5	24	102.6	102.6	102.7	24	110.7	111.0	111.4	24	106.0	106.3	106.8	24	111.5	112.3	114.9	24
6/19	102.9	104.4	105.4	23	102.3	102.4	102.6	23	110.9	111.1	111.6	23	107.4	108.2	108.5	23	110.9	111.3	113.6	23

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

	Lower Mon.				L. Mon. Tlwr				Ice Harbor				Ice Harbor Tlwr				McNary-Oregon			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	113.9	114.4	115.1	24	119.0	119.4	119.6	24	115.0	115.3	115.4	24	117.1	117.9	118.8	24	---	---	---	0
6/7	115.4	115.8	116.2	24	118.9	119.4	119.8	24	115.1	115.4	115.5	24	117.7	118.7	119.8	24	---	---	---	0
6/8	115.6	115.9	116.1	24	119.1	119.3	119.7	24	115.8	116.3	116.6	24	117.7	118.5	119.6	24	---	---	---	0
6/9	115.9	116.2	116.4	24	117.8	119.4	119.9	24	116.7	117.1	117.4	24	117.4	117.9	119.3	24	---	---	---	0
6/10	114.7	115.0	115.8	24	114.4	114.6	115.0	24	116.6	116.8	116.9	24	117.0	117.2	117.5	24	---	---	---	0
6/11	113.9	114.2	114.3	24	115.7	117.3	118.8	24	115.6	115.9	116.2	24	116.9	117.2	117.6	24	---	---	---	0
6/12	114.8	115.0	115.3	24	118.0	118.4	118.6	24	115.6	115.9	116.2	24	116.7	117.2	117.6	24	---	---	---	0
6/13	112.4	113.2	114.0	24	116.5	116.8	117.1	24	113.0	113.5	114.2	24	115.5	116.3	117.8	24	---	---	---	0
6/14	110.5	110.7	111.1	24	117.1	117.3	117.6	24	110.8	111.0	111.6	24	114.0	114.4	115.1	24	---	---	---	0
6/15	110.7	111.0	111.3	24	118.1	118.9	119.4	24	111.1	111.5	111.9	24	115.2	115.9	116.1	24	---	---	---	0
6/16	110.6	110.8	111.0	24	119.4	120.0	121.0	24	111.7	111.9	112.1	24	115.5	115.9	116.1	24	---	---	---	0
6/17	109.8	110.0	110.3	24	119.6	120.2	120.5	24	111.2	111.4	111.9	24	114.3	114.8	115.9	24	---	---	---	0
6/18	109.4	109.6	109.7	24	119.5	120.0	120.5	24	111.7	112.4	113.0	24	114.3	114.9	116.1	24	---	---	---	0
6/19	109.4	109.6	109.8	23	119.2	119.8	120.3	23	113.5	114.0	114.7	23	115.1	115.6	115.9	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

	McNary-Wash				McNary Tlwr				John Day				John Day Tlwr				The Dalles			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
6/6	114.9	115.3	115.8	24	120.0	120.5	120.7	24	113.3	113.6	113.9	24	118.7	119.1	120.0	24	113.8	114.9	115.5	24
6/7	114.5	115.2	115.7	24	118.1	118.7	119.2	24	114.2	114.9	115.3	24	118.0	118.6	118.9	24	113.6	114.2	114.7	24
6/8	115.2	115.6	115.9	24	117.5	117.6	117.7	24	115.5	116.4	116.9	24	116.1	116.8	117.4	24	113.6	114.3	114.7	24
6/9	114.2	114.7	115.8	24	120.3	121.7	121.9	24	116.1	116.4	116.6	24	115.6	117.1	118.0	24	112.5	113.0	113.7	24
6/10	112.4	112.9	113.3	24	121.5	122.1	122.7	24	114.3	114.9	115.7	24	117.8	118.2	118.5	24	111.7	112.1	112.3	24
6/11	112.5	113.1	114.0	24	119.7	120.2	120.5	24	113.3	113.8	114.2	24	117.2	117.8	118.1	24	113.7	115.0	115.8	24
6/12	112.4	112.9	113.8	24	117.5	118.5	119.0	24	113.9	114.2	114.4	24	113.2	114.0	115.1	24	112.9	114.5	115.7	24
6/13	108.5	109.4	110.1	24	116.2	116.3	116.5	24	111.8	112.5	112.8	24	113.1	113.9	114.9	24	109.2	109.3	109.7	24
6/14	106.2	106.4	106.7	24	116.0	116.1	116.4	24	109.1	109.4	109.9	24	114.8	115.4	116.0	24	108.5	109.2	109.5	24
6/15	106.6	106.7	106.9	24	115.5	116.0	116.2	24	107.8	108.2	108.5	24	113.1	113.5	114.2	24	109.2	109.4	109.6	24
6/16	105.9	106.1	106.6	24	115.8	116.1	116.4	24	105.3	105.9	106.7	24	111.5	111.8	112.4	24	107.5	108.3	108.5	24
6/17	105.6	105.7	105.8	24	117.4	118.2	118.9	24	102.9	103.1	103.7	24	111.9	112.8	114.4	24	104.9	105.2	105.5	24
6/18	106.0	106.5	107.2	24	117.5	118.1	118.8	24	102.6	102.9	103.1	24	115.4	116.7	117.4	24	106.3	108.0	109.1	24
6/19	107.1	107.3	107.6	23	117.9	118.4	118.6	23	103.1	103.5	103.9	23	113.9	115.7	116.3	23	108.9	109.4	110.1	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

	The Dalles Dnst				Bonneville				Warrendale				Camas\Washougal				Cascade Island			
	24 h	12 h		#	24 h	12 h		#	24h	12h		#	24h	12h		#	24h	12h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
6/6	118.4	118.9	119.4	24	114.9	115.3	115.5	24	115.6	116.2	116.7	24	113.8	114.9	115.9	24	119.5	120.1	120.7	24
6/7	118.6	119.0	119.4	24	113.9	114.5	115.5	24	115.0	115.4	116.0	24	114.1	114.7	115.6	24	120.0	120.3	120.9	24
6/8	118.5	118.9	119.3	24	113.3	113.6	113.9	24	114.4	114.6	114.7	24	113.5	114.3	115.2	24	119.8	120.3	120.4	24
6/9	118.1	118.3	118.6	24	112.9	113.3	113.9	24	114.4	114.6	114.8	24	112.9	113.6	114.5	24	118.4	118.6	118.6	24
6/10	117.4	117.8	118.2	24	111.0	111.4	111.8	24	113.3	113.4	113.6	24	112.3	113.0	113.8	24	118.9	119.5	120.1	24
6/11	118.7	119.7	120.3	24	113.8	115.2	115.8	24	115.1	116.1	116.4	24	113.1	114.8	115.6	24	118.7	118.9	119.3	24
6/12	118.1	119.0	119.5	24	114.7	115.6	116.3	24	116.4	116.6	116.7	24	113.8	114.0	114.3	24	118.1	118.4	119.0	24
6/13	115.5	115.7	116.1	24	111.1	112.0	113.2	24	114.6	115.3	116.1	24	111.5	111.9	112.9	24	117.6	117.7	117.8	24
6/14	115.4	115.7	116.0	24	108.9	109.2	109.7	24	113.6	113.7	113.9	24	111.0	111.4	111.7	24	117.4	117.4	117.6	24
6/15	115.5	115.8	116.0	24	109.7	109.8	109.9	24	114.5	115.0	115.2	24	111.1	111.5	111.7	24	117.4	117.5	117.6	24
6/16	114.6	115.0	115.5	24	109.1	109.5	109.8	24	114.5	114.7	115.0	24	110.8	111.2	111.6	24	116.8	117.0	117.3	24
6/17	113.0	113.3	113.7	24	107.7	108.0	108.6	24	113.4	114.0	114.3	24	110.0	110.3	110.9	24	116.9	117.1	117.3	24
6/18	114.0	114.9	115.4	24	107.4	107.8	108.0	24	111.6	112.1	112.5	24	110.8	111.7	112.6	24	116.2	117.0	119.2	24
6/19	115.9	116.4	116.7	23	109.4	110.6	111.1	23	113.5	114.0	115.5	23	111.1	112.8	114.5	23	116.6	117.6	119.1	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center Updated: 6/20/2014 7:25

Two-Week Summary of Passage Indices

* One or more of the sites on this date had an incomplete or biased sample.
See Sampling Comments: http://www.fpc.org/currentDaily/smpcomments.htm
For clip information see: http://www.fpc.org/CurrentDaily/catch.htm
For sockeye and yearling chinook (Snake only) race information see: http://www.fpc.org/smoltqueries/currentsmpsubmitdata.asp

				COMBINED YEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/06/2014	*	---	26	---	---	2,587	712	1,175	26	4,379	3,427	4,384
06/07/2014	*	---	32	---	---	3,039	850	263	27	---	2,240	2,791
06/08/2014	*	---	24	---	---	1,399	430	331	10	7,003	1,933	1,830
06/09/2014	*	---	21	---	---	1,124	787	206	19	---	1,445	2,477
06/10/2014	*	---	42	---	---	1,620	788	660	10	3,275	1,472	1,872
06/11/2014	*	---	23	---	---	189	931	749	10	---	1,279	1,329
06/12/2014	*	---	20	---	---	1,091	215	279	14	1,715	691	1,008
06/13/2014	*	---	9	---	---	450	143	632	4	---	474	573
06/14/2014	*	---	25	---	---	720	501	430	10	1,374	479	737
06/15/2014	*	---	40	---	---	438	645	78	5	---	294	293
06/16/2014	*	---	34	---	---	489	718	129	0	903	187	216
06/17/2014	*	---	26	---	---	348	1,077	169	3	---	174	235
06/18/2014		---	---	---	---	210	429	86	0	204	305	427
06/19/2014	*	---	---	---	---	483	937	133	2	---	406	346
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**322**	**0**	**0**	**14,187**	**9,163**	**5,320**	**140**	**18,853**	**14,806**	**18,518**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**27**	**0**	**0**	**1,013**	**655**	**380**	**10**	**2,693**	**1,058**	**1,323**
YTD		**65,404**	**63,447**	**25,420**	**10,159**	**4,804,683**	**2,836,707**	**1,968,428**	**26,415**	**2,018,377**	**2,312,239**	**2,147,325**

				COMBINED SUBYEARLING CHINOOK								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/06/2014	*	---	0	---	---	20,177	36,597	24,991	437	15,509	7,919	7,331
06/07/2014	*	---	0	---	---	23,795	19,986	13,534	1,233	---	5,890	7,149
06/08/2014	*	---	0	---	---	22,443	10,750	6,416	785	26,575	6,016	6,043
06/09/2014	*	---	0	---	---	13,925	23,192	9,523	350	---	9,429	6,811
06/10/2014	*	---	0	---	---	11,032	32,384	15,234	505	29,754	12,199	6,097
06/11/2014	*	---	0	---	---	18,216	40,018	23,903	552	---	14,860	6,978
06/12/2014	*	---	0	---	---	9,502	14,604	11,585	331	44,016	8,637	8,716
06/13/2014	*	---	0	---	---	16,224	9,098	8,076	312	---	8,715	6,591
06/14/2014	*	---	0	---	---	17,253	45,593	11,929	272	31,152	9,875	11,969
06/15/2014	*	---	0	---	---	26,864	18,492	13,022	352	---	9,058	5,542
06/16/2014	*	---	2	---	---	17,464	27,293	12,303	510	55,354	6,238	6,822
06/17/2014	*	---	0	---	---	16,284	39,046	5,745	543	---	11,562	7,176
06/18/2014		---	---	---	---	29,320	45,376	5,167	1,359	60,611	9,554	6,882
06/19/2014	*	---	---	---	---	32,808	41,869	4,660	1,225	---	9,912	6,913
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**2**	**0**	**0**	**275,307**	**404,298**	**166,088**	**8,766**	**262,971**	**129,864**	**101,020**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**19,665**	**28,878**	**11,863**	**626**	**37,567**	**9,276**	**7,216**
YTD		**0**	**21**	**4**	**332**	**648,231**	**712,323**	**251,437**	**14,556**	**346,489**	**240,980**	**1,970,793**

Two-Week Summary of Passage Indices

				COMBINED COHO								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/06/2014	*	---	0	---	---	259	0	131	450	2,002	1,751	3,522
06/07/2014	*	---	0	---	---	0	142	0	234	---	1,078	3,881
06/08/2014	*	---	0	---	---	64	0	0	200	721	343	2,101
06/09/2014	*	---	0	---	---	62	0	0	226	---	760	2,601
06/10/2014	*	---	0	---	---	62	0	0	257	1,317	497	2,032
06/11/2014	*	---	0	---	---	0	72	0	201	---	573	1,218
06/12/2014	*	---	0	---	---	0	0	0	182	1,143	125	976
06/13/2014	*	---	0	---	---	32	0	0	94	---	117	669
06/14/2014	*	---	0	---	---	0	64	0	93	678	211	1,013
06/15/2014	*	---	0	---	---	0	0	0	75	---	147	619
06/16/2014	*	---	0	---	---	0	0	0	65	1,068	93	173
06/17/2014	*	---	0	---	---	0	0	0	50	---	150	206
06/18/2014		---	---	---	---	70	72	0	23	612	349	191
06/19/2014	*	---	---	---	---	0	0	0	56	---	42	494
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**549**	**350**	**131**	**2,206**	**7,541**	**6,236**	**19,696**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**39**	**25**	**9**	**158**	**1,077**	**445**	**1,407**
YTD		**0**	**0**	**0**	**267**	**74,133**	**59,366**	**27,309**	**66,195**	**145,822**	**224,107**	**771,707**

				COMBINED STEELHEAD								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/06/2014	*	---	115	---	---	6,934	3,987	1,958	107	1,136	914	791
06/07/2014	*	---	135	---	---	7,630	2,551	1,183	90	---	1,908	613
06/08/2014	*	---	116	---	---	5,404	3,583	1,587	66	103	1,153	907
06/09/2014	*	---	124	---	---	3,434	3,329	1,096	64	---	712	1,004
06/10/2014	*	---	164	---	---	3,366	3,245	1,385	60	1,121	811	749
06/11/2014	*	---	141	---	---	2,395	2,292	1,172	41	---	840	886
06/12/2014	*	---	94	---	---	1,477	1,360	698	22	191	727	585
06/13/2014	*	---	68	---	---	1,574	1,289	632	24	---	298	764
06/14/2014	*	---	103	---	---	3,339	1,116	466	21	1,359	38	322
06/15/2014	*	---	75	---	---	1,313	1,003	504	18	---	189	487
06/16/2014	*	---	52	---	---	978	1,148	686	17	1,070	202	173
06/17/2014	*	---	44	---	---	1,253	1,731	591	41	---	150	89
06/18/2014		---	---	---	---	1,894	2,149	221	14	1,022	372	273
06/19/2014	*	---	---	---	---	898	1,955	222	31	---	167	148
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**1,231**	**0**	**0**	**41,889**	**30,738**	**12,401**	**616**	**6,002**	**8,481**	**7,791**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**103**	**0**	**0**	**2,992**	**2,196**	**886**	**44**	**857**	**606**	**557**
YTD		**2,080**	**43,195**	**4,243**	**12,842**	**3,368,744**	**1,967,158**	**1,180,736**	**27,238**	**578,922**	**1,030,677**	**451,888**

Two-Week Summary of Passage Indices

				COMBINED SOCKEYE								
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
06/06/2014	*	---	0	---	---	65	142	131	15	3,003	4,112	3,593
06/07/2014	*	---	0	---	---	65	0	263	10	---	2,157	2,179
06/08/2014	*	---	0	---	---	64	72	66	6	1,651	1,761	2,118
06/09/2014	*	---	0	---	---	0	72	0	4	---	1,506	1,679
06/10/2014	*	---	0	---	---	0	0	66	10	409	2,203	1,818
06/11/2014	*	---	0	---	---	0	0	0	10	---	1,913	941
06/12/2014	*	---	0	---	---	0	0	0	10	762	593	802
06/13/2014	*	---	0	---	---	32	0	0	9	---	289	382
06/14/2014	*	---	0	---	---	98	0	36	10	508	306	644
06/15/2014	*	---	0	---	---	34	72	0	8	---	189	372
06/16/2014	*	---	0	---	---	0	0	0	5	1,780	156	259
06/17/2014	*	---	0	---	---	0	0	0	3	---	212	178
06/18/2014		---	---	---	---	140	147	0	4	1,022	131	209
06/19/2014	*	---	---	---	---	69	72	44	8	---	84	148
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**567**	**577**	**606**	**112**	**9,135**	**15,612**	**15,322**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**41**	**41**	**43**	**8**	**1,305**	**1,115**	**1,094**
YTD		**0**	**0**	**2**	**0**	**181,139**	**87,429**	**69,337**	**37,813**	**1,491,678**	**575,472**	**585,350**

				COMBINED LAMPREY JUVENILES								
		WTB	IMN	GRN	LEW	LGR†	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(Samp)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)	(Coll)
06/06/2014	*	---	0	---	---	0	300	800	0	1,650	2,850	350
06/07/2014	*	---	0	---	---	0	100	0	0	---	2,250	250
06/08/2014	*	---	0	---	---	0	150	100	0	2,400	2,490	292
06/09/2014	*	---	0	---	---	1	0	150	0	---	1,711	515
06/10/2014	*	---	0	---	---	0	50	150	0	2,400	2,094	120
06/11/2014	*	---	0	---	---	0	50	0	0	---	1,483	140
06/12/2014	*	---	0	---	---	2	250	100	0	8,100	1,040	148
06/13/2014	*	---	0	---	---	0	100	50	0	---	1,066	120
06/14/2014	*	---	0	---	---	0	100	125	2	500	1,338	280
06/15/2014	*	---	0	---	---	2	200	0	0	---	938	61
06/16/2014	*	---	0	---	---	0	0	0	0	300	1,050	100
06/17/2014	*	---	0	---	---	2	0	0	0	---	1,136	100
06/18/2014		---	---	---	---	0	50	0	0	600	1,086	116
06/19/2014	*	---	---	---	---	1	4,650	0	2	---	675	80
06/20/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		**0**	**0**	**0**	**0**	**8**	**6,000**	**1,475**	**4**	**15,950**	**21,207**	**2,672**
# Days:		**0**	**12**	**0**	**0**	**14**	**14**	**14**	**14**	**7**	**14**	**14**
Average:		**0**	**0**	**0**	**0**	**1**	**429**	**105**	**0**	**2,279**	**1,515**	**191**
YTD		**1**	**3**	**0**	**0**	**101**	**17,963**	**29,392**	**32**	**29,655**	**84,300**	**15,901**

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

Definitions for Smolt Index Counts
WTB (Collection) = Salmon River Trap at Whitebird : Collection Counts
IMN (Collection) = Imnaha River Trap : Collection Counts
GRN (Collection) = Grande Ronde River Trap : Collection Counts
LEW (Collection) = Snake River Trap at Lewiston : Collection Counts
LGR (Index) = Lower Granite Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
LGS (Index) = Little Goose Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
LMN (Index) = Lower Monumental Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}
MCN (Index) = McNary Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
JDA (Index) = John Day Dam Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse Flow / (Powerhouse Flow + Spill)}
BO2 (Index) = Bonneville Dam Second Powerhouse Bypass Collection System : Passage Index Counts
Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouse 1 & 2 Flow + Spill)}

JDA and BO2 data collected for the FPC by Pacific States Marine Fisheries Commission.
RIS data collected for the FPC by Chelan Co. PUD.
LGR, LMN, and MCN data collected for the FPC by Washington Dept. of Fish and Wildlife.
LGS and GRN data collected for the FPC by Oregon Dept. of Fish and Wildlife.
IMN data collected for the FPC by the Nez Perce Tribe.
Fall (post SMP season) trapping at the Imnaha River Fish Trap (IMN) is funded by the Lower Snake River Compensation Program (LSRCP)
WTB and LEW data collected for the FPC by Idaho Dept. of Fish and Game.

Two Week Transportation Summary

Source: Fish Passage Center Updated: 6/20/14 7:28 AM

06/06/14 TO 06/20/14

		Species					
Site	Data	**CH0**	**CH1**	CO	ST	SO	**Grand Total**
LGR	Sum of NumberCollected	208,100	10,975	425	32,361	425	252,286
	Sum of NumberBarged	205,481	10,956	424	30,917	424	248,202
	Sum of NumberBypassed	1,746	0	0	1,433	0	3,179
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	65	2	0	2	0	69
	Sum of FacilityMorts	806	17	1	9	1	834
	Sum of ResearchMorts	2	0	0	0	0	2
	Sum of TotalProjectMorts	873	19	1	11	1	905
LGS	Sum of NumberCollected	282,383	6,402	245	21,488	403	310,921
	Sum of NumberBarged	281,868	6,397	244	21,467	395	310,371
	Sum of NumberBypassed	12	0	0	0	0	12
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	20	0	0	4	0	24
	Sum of FacilityMorts	483	5	1	17	8	514
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	503	5	1	21	8	538
LMN	Sum of NumberCollected	117,636	3,860	100	8,929	450	130,975
	Sum of NumberBarged	117,403	3,845	100	8,886	450	130,684
	Sum of NumberBypassed	111	10	0	29	0	150
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	0	0	0	0	2
	Sum of FacilityMorts	120	5	0	14	0	139
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	122	5	0	14	0	141
Total Sum of NumberCollected		608,119	21,237	770	62,778	1,278	694,182
Total Sum of NumberBarged		604,752	21,198	768	61,270	1,269	689,257
Total Sum of NumberBypassed		1,869	10	0	1,462	0	3,341
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		87	2	0	6	0	95
Total Sum of FacilityMorts		1,409	27	2	40	9	1,487
Total Sum of ResearchMorts		2	0	0	0	0	2
Total Sum of TotalProjectMorts		1,498	29	2	46	9	1,584

YTD Transportation Summary

Source: Fish Passage Center Updated: 6/20/14 7:28 AM

TO: 06/20/14

		Species					
Site	Data	**CH0**	**CH1**	CO	SO	ST	**Grand Total**
LGR	Sum of NumberCollected	460,600	3,440,387	52,697	130,375	2,399,109	6,483,168
	Sum of NumberBarged	447,762	1,937,506	48,966	70,284	1,321,763	3,826,281
	Sum of NumberBypassed	11,659	1,501,395	3,722	59,638	1,077,103	2,653,517
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	119	133	1	43	56	352
	Sum of FacilityMorts	1,058	1,294	8	410	98	2,868
	Sum of ResearchMorts	2	59	0	0	89	150
	Sum of TotalProjectMorts	1,179	1,486	9	453	243	3,370
LGS	Sum of NumberCollected	508,467	1,950,315	41,787	60,537	1,363,758	3,924,864
	Sum of NumberBarged	507,373	1,766,973	40,887	54,192	1,143,613	3,513,038
	Sum of NumberBypassed	288	182,657	890	6,109	220,102	410,046
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	31	34	1	13	16	95
	Sum of FacilityMorts	775	651	9	223	157	1,815
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	806	685	10	236	173	1,910
LMN	Sum of NumberCollected	176,905	1,325,433	19,900	48,068	790,549	2,360,855
	Sum of NumberBarged	175,133	1,137,792	17,500	44,806	684,617	2,059,848
	Sum of NumberBypassed	181	177,066	0	2,568	89,936	269,751
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	4	25	0	1	16	46
	Sum of FacilityMorts	187	962	0	299	184	1,632
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	191	987	0	300	200	1,678
Total Sum of NumberCollected		1,145,972	6,716,135	114,384	238,980	4,553,416	12,768,887
Total Sum of NumberBarged		1,130,268	4,842,271	107,353	169,282	3,149,993	9,399,167
Total Sum of NumberBypassed		12,128	1,861,118	4,612	68,315	1,387,141	3,333,314
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		154	192	2	57	88	493
Total Sum of FacilityMorts		2,020	2,907	17	932	439	6,315
Total Sum of ResearchMorts		2	59	0	0	89	150
Total Sum of TotalProjectMorts		2,176	3,158	19	989	616	6,958

Cumulative Adult Passage at Mainstem Dams Through: 06/19

		Spring Chinook						Summer Chinook						Fall Chinook					
	END	2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.		2014		2013		10-Yr Avg.	
DAM	DATE	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	06/19	188083	26094	83345	33820	130283	22257	46215	8286	40551	12041	37024	7819	0	0	0	0	0	0
TDA	06/19	143142	21080	69202	32311	99813	18973	32294	5340	32512	8388	26359	5178	0	0	0	0	0	0
JDA	06/19	123224	19103	56991	28957	87036	17743	27799	3965	26091	6534	20005	4232	0	0	0	0	0	0
MCN	06/19	107147	16033	52176	22279	79413	14950	22308	3248	21542	4498	14684	2848	0	0	0	0	0	0
IHR	06/19	79298	12428	38017	18611	54814	9602	5092	1293	4010	2052	6342	1303	0	0	0	0	0	0
LMN	06/19	79942	14020	36470	19053	54458	8539	3982	1464	2883	1779	5729	977	0	0	0	0	0	0
LGS	06/19	77966	13649	35072	19443	49920	9660	2844	902	1318	928	3341	706	0	0	0	0	0	0
LGR	06/19	79167	13732	35031	19940	49728	11001	1707	468	781	522	1453	350	0	0	0	0	0	0
PRD	06/18	23742	2649	13725	1298	14700	1468	3857	176	6281	181	2513	128	0	0	0	0	0	0
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/18	23247	2934	13345	3100	13890	2468	980	47	849	69	355	57	0	0	0	0	0	0
RRH	06/18	11727	2349	6389	2086	5383	1006	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/18	8974	2219	3467	2671	3331	1008	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/16	23540	936	23176	1230	32203	796	0	0	0	0	0	0	0	0	0	0	0	0

		Coho						Sockeye			Steelhead						Lamprey		
	END	2014		2013		10-Yr Avg.				10-Yr			10-Yr	Wild	Wild	10-Yr			10-Yr
DAM	DATE	Adult	Jack	Adult	Jack	Adult	Jack	2014	2013	Avg.	2014	2013	Avg.	2014	2013	Avg.	2014	2013	Avg.
BON	06/19	5	-2	0	0	0	0	49521	42249	38820	9522	4967	9448	2550	1301	2457	8234	5524	4074
TDA	06/19	0	0	0	0	0	0	30772	26491	21615	2038	1408	3683	544	483	1227	306	488	184
JDA	06/19	0	1	0	0	0	0	24093	19924	15431	4150	1409	6025	1484	616	1859	225	155	97
MCN	06/19	0	0	1	0	1	0	15660	13034	7142	1612	1911	6169	507	780	1969	18	36	21
IHR	06/19	0	0	0	0	0	0	9	28	5	2342	4233	4865	839	1548	1396	9	12	1
LMN	06/19	0	0	0	0	0	0	3	11	0	2233	2733	6979	998	1405	2874	3	4	1
LGS	06/19	0	0	0	0	0	0	1	13	0	1804	2274	6852	1049	1190	2340	0	2	0
LGR	06/19	0	0	0	0	0	0	0	4	0	7628	7476	8877	3489	3240	3158	1	1	0
PRD	06/18	0	0	0	0	0	0	1401	1531	1015	130	106	91	0	0	0	12	57	17
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/18	0	0	0	0	0	0	152	330	163	310	132	126	161	99	74	0	0	0
RRH	06/18	0	0	0	0	0	0	52	144	79	266	173	389	161	148	285	0	0	0
WEL	06/18	0	0	0	0	0	0	2	47	15	138	81	78	82	73	54	0	0	2
WFA	06/16	9	0	2	0	0	0	0	0	0	17187	14161	19158	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.

Page last updated on: 06/20/14