



Fish Passage Center

Weekly Report #14 - 12

June 6, 2014

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Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 0% and 98% of average at individual sub-basins over June. Precipitation above The Dalles has been 33% of average over June. Over the 2014 water year, precipitation has ranged between 76% and 98% of average.

Table 1. Summary of June precipitation and cumulative October through June 4, 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	
	June 1–4, 2014		October 1, 2013 to June 4, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.25	59	26.9	93
Snake River above Ice Harbor	0.02	9	14.6	79
Columbia above The Dalles	0.09	33	18.4	83
Kootenai	0.21	43	28.8	98
Clark Fork	0.09	27	17.1	80
Flathead	0.41	98	26.9	95
Pend Oreille River Basin above Waneta Dam	0.25	67	22.5	87
Salmon River Basin	0.03	9	17.5	76
Upper Snake Tributaries	0.01	6	19.3	88
Clearwater	0.06	16	30.8	91
Willamette River above Portland	0.00	0	49.2	84

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 156% of average. For Snake River Basins the average snowpack is 81% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 15% of average.

Table 2 displays the June 5th ESP runoff volume forecasts for multiple reservoirs along with the June COE forecasts at Libby and Dworshak. The June 5th ESP forecast at The Dalles between January and July is 107,109 Kaf (106% of average).

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

Location	June 5, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	106	107109
Grand Coulee (Jan–July)	108	64080
Libby Res. Inflow, MT (Apr–Aug)	117	6893 7074*
Hungry Horse Res. Inflow, MT (Jan–July)	122	2559
Lower Granite Res. Inflow (Apr–July)	101	19994
Brownlee Res. Inflow (Apr–July)	61	3328
Dworshak Res. Inflow (Apr–July)	127	3080 2933*

* Denotes COE June Forecast

Grand Coulee Reservoir is at 1272.6 feet (6-5-14) and has refilled 8.2 feet over the last week. Outflows at Grand Coulee have ranged between 167.0 and 176.3 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2419.5 feet (6-5-14) and has refilled 7.0 feet over the previous week. The daily average outflows at Libby Dam have been increased from 18.0 Kcfs to 26.0 over the last week for the sturgeon pulse operation.

Hungry Horse is currently at an elevation of 3530.8 feet (6-5-14) and has refilled 10.9 feet over the previous week. Outflows at Hungry Horse have been 2.3–4.5 Kcfs over the last week.

Dworshak is currently at an elevation of 1574.1 feet (6-5-14) and has refilled 10.9 feet over the previous week. Outflows at Dworshak have been 2.3–4.5 Kcfs over the last week.

The Brownlee Reservoir was at an elevation of 2075 feet on June 5, 2014. Inflows to Brownlee Dam have ranged between 16.5 and 20.3 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 122.0 Kcfs over the last week and 92.8 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 339.7 Kcfs over the last week and 291.8 over the spring period. Flows at Priest Rapids Dam have averaged 213.0 Kcfs over the last week and 186.7 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.

Flows increased in the Lower Snake River over the past week. Consequently, spill greater than required by the Fish Operations Plan (FOP) occurred at Lower Granite Dam throughout the past week. For most of this week, spill at Little Goose Dam was restricted to less than the 30% of total flow volume as specified in the FOP based on the TDG measurements at the Lower Monumental forebay monitor. (Spill averaged about 25%–29% over the past week.) TDG exceeded the Washington State 115% forebay criteria; however TDG at the Lower Monumental forebay monitor was significantly higher than at the upstream Little Goose tailrace for most of the week. This suggests that although spill was being restricted, the higher gas levels were not likely due to upstream spill. At Lower Monumental Dam spill was at the levels specified in

the FOP. The project changed from the bulk to uniform spill pattern on May 28th, which allows higher levels of spill to occur without exceeding the gas caps. Lower Monumental Dam returned to the bulk spill pattern on the afternoon of June 5th, at which time the spill cap was reduced from 36 Kcfs to about 26 Kcfs. On April 28th the “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, were initiated at Ice Harbor Dam. Excess generation spill has occurred at this project. However, without excess spill occurring, 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	April 28–June 1: 30%/30% vs. 45 Kcfs/Gas Cap

At the Middle Columbia River projects, McNary Dam spilled above 40% due to limited hydraulic capacity and excess generation spill. At John Day Dam the testing of the 30% and 40% spill levels occurred over the past week. However, the high flows resulted in spill that often precluded meeting the 30% spill level. Spill at The Dalles Dam was generally less than 40% this week due to TDG exceeding the gas criteria. Bonneville Dam spilled above 100 Kcfs over the past week.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	Testing: 30%/30% vs. 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

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 Lower Granite, Little Goose, Lower Monumental, McNary, Bonneville, and Rock Island dams over the past week. At Little Goose Dam 1% of fish were detected with Rank 1 (minor) signs of GBT on 6/2; at McNary Dam 1% of fish were affected with Rank 1 signs on 6/5; and, at Rock Island Dam 7% of fish were affected with Rank 1 signs on 6/3. 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). Sampling at the Imnaha River Trap (IMN) was suspended on May 30th due to damaged equipment. Sampling at the Salmon River (WTB) and Snake River (LEW) traps was terminated after the April 21st, and May 8th samples, respectively. Sampling at the Grande Ronde River Trap (GRN) was terminated after the May 21st sample.

On average, this week's samples at Bonneville Dam (BON) were dominated by sockeye juveniles, followed closely by subyearling Chinook. However, passage of all salmonid species decreased this week at BON, when compared to last week. The daily average passage indices for sockeye and subyearling Chinook at BON this week were about 6,600 and 6,400 per day, respectively. Last week's daily average passage indices were about 27,000 for sockeye and 9,700 for subyearling Chinook. This week's daily average passage indices for yearling Chinook, steelhead, and

coho were about 5,750, 1,600, and 6,000 per day, respectively. Bonneville Dam sampled its first and only Pacific lamprey ammocoete of the 2014 season on June 1st. Finally, Pacific lamprey macrophthalmia were collected at BON every day this week. This week's daily average collection for Pacific lamprey macrophthalmia at BON was about 150 per day.

Consistent with change form 14BON001, which was approved by the Fish Passage Operations and Maintenance Committee (FPOM) on May 8, 2014, flows through the BON second powerhouse (PH2) were increased to the upper end of the 1% efficiency curve at approximately 1200 on June 2, 2014. The increase in operations at PH2 was initiated because the adult trigger identified in change form 14BON001 was met on June 1st, where adult Chinook counts at BON had exceeded collection estimates of yearling Chinook juveniles for two consecutive days. Sockeye decaling has been elevated ever since this change in PH2 operations was initiated, with descaling levels between 10.7% and 19.7% over the period of June 3rd through June 6th. In addition, subyearling Chinook mortality was elevated in the June 4th sample (6.5%) and sockeye mortality has been elevated since June 3rd (4.7% on June 4th, 5.8% on June 5th, and 6.0% on June 6th).

Passage of all salmonid species at John Day Dam (JDA) decreased this week when compared to last week. This week's daily average passage indices for yearling and subyearling Chinook at JDA were 7,800 and 6,100 per day, respectively. Last week's daily average passage indices were about 29,000 and 6,800 per day, respectively. This week's daily average passage indices for steelhead, sockeye, and coho were 3,300, 9,000, and 3,200 per day. Last week's daily average passage indices for these three species were about 11,000 for steelhead, 28,600 for sockeye, and 7,800 for coho. Finally, Pacific lamprey ammocoetes were encountered in only one of this week's samples (May 30th) while Pacific lamprey macrophthalmia were present every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was about 5,300 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Although sockeye passage continued to decrease this week when

compared to last week, sockeye continued to be the dominate species in most of this week's collections. The daily average passage index for sockeye at MCN this week was about 9,000 per day. Last week's daily average passage index for sockeye was about 55,000 per day. Yearling Chinook, steelhead, and coho passage also decreased this week, when compared to last week. This week's daily average passage indices were 5,200 for yearling Chinook, 1,550 for steelhead, and 3,650 for coho. Last week's daily average passage indices for these three species were about 27,900, 4,050, and 7,250 per day, respectively. Subyearling Chinook passage also decreased this week, with a daily average passage index of about 7,850 per day. Finally, only Pacific lamprey macrophthalmia have been collected so far this year. Pacific macrophthalmia were encountered every day this week. The daily average collection for Pacific lamprey macrophthalmia this week was 3,125 per day.

Descaling at MCN continued to be elevated this week. For the period of May 31st through June 6th, overall descaling rates ranged from 9.0% to 10.9%. Sockeye descaling rates for this period ranged from 14.9% to 25.0%. Removal of the debris mat in the MCN forebay was completed on the afternoon of May 30th. Due to decreased descaling rates in the May 29th sample, when compared to the previous sample, seven units in the MCN powerhouse were operated at the mid-range from 1600 May 29th to 0700 on Sunday, June 1st. Descaling from the May 31st sample was 10.9% overall and 14.9% for sockeye. Beginning at 0700 on Sunday, June 1st, the seven units were increased to the normal 1% operating range through 0700 on Monday, June 2nd. Descaling in the June 2nd sample was 10.5% overall and 19.8% for sockeye. Operations returned to the mid-range from 0700 June 2nd to 1600 June 2nd and were then increased to the normal 1% range from 1600 June 2nd through 0700 June 5th. Descaling from the June 4th sample (under normal 1% operating range) was 9.0% overall and 16% for sockeye. Operations of the seven units returned to the mid-range at 0700 June 5th where they remained until at least 0700 June 6th. Descaling in the June 6th sample was 9.2% overall and 25% for sockeye. In addition, high descaling (9.7%) was observed for subyearling Chinook in the June 6th sample.

Subyearling Chinook dominated the collections

at Lower Granite Dam (LGR) this week. This week's daily average passage index for subyearling Chinook at LGR was about 30,000 per day, which is an increase over last week's daily average passage index of about 20,000 per day. Passage of yearling Chinook, steelhead, sockeye, and coho all decreased this week, when compared to last week. This week's daily average passage indices for these species were 2,400 for yearling Chinook, 9,900 for steelhead, 200 for sockeye, and 230 for coho. Pacific lamprey ammocoetes were encountered in only two of the seven samples at LGR this week. Pacific lamprey macrophthalmia were encountered only in one of this week's samples (May 31st).

This week's samples at Little Goose Dam (LGS) were dominated by subyearling Chinook. This week's daily average passage index for subyearling Chinook was 38,000 per day, which is an increase over last week's daily average passage index of just over 5,000 per day. As with LGR, passage of all other species of salmonids decreased this week, when compared to last week. This week's daily average passage indices for other salmonids at LGS were 2,100 for yearling Chinook, 7,100 for steelhead, 430 for sockeye, and 250 for coho. Last week's daily average passage indices for these species were 20,000 for yearling Chinook, 33,000 for steelhead, 820 for sockeye, and 2,500 for coho. Finally, both Pacific lamprey ammocoetes and macrophthalmia were collected at LGS most days this week. The daily average collection for Pacific lamprey ammocoetes this week was just over 100, while that for Pacific lamprey macrophthalmia was about 630 per day.

Subyearling Chinook also dominated this week's samples at Lower Monumental Dam (LMN). This week's daily average passage index for subyearling Chinook at LMN was 11,500 per day, which is a significant increase over last week's daily average passage index of only 500 per day. Passage of yearling Chinook, steelhead, sockeye, and coho all decreased this week, when compared to last week. The daily average passage indices for these species were 1,300 for yearling Chinook, 3,250 for steelhead, 440 for sockeye, and 180 for coho. Last week's daily average passage indices for these four species were 13,400, 20,000, 700, and 1,550 per day, respectively. Finally, only Pacific lamprey macrophthalmia have been collected so far this

year at LMN. Pacific macrophthalmia were encountered at LMN every day this week. The daily average collection for Pacific lamprey macrophthalmia was about 1,600 per day.

Coho continued to dominate the samples at Rock Island Dam (RIS) this week. This week's daily average passage index for coho at RIS was about 1,400 per day, which is a decrease from last week's daily average passage index of about 3,300 per day. Steelhead, sockeye, and yearling Chinook passage also decreased this week, when compared to last week. This week's daily average passage indices for these three species were about 100, 30, and 75 per day, respectively. Last week's daily average passage indices were about 500 for steelhead, 550 for sockeye, and 440 for yearling Chinook. Subyearling Chinook passage increased this week. This week's daily average passage index for subyearling Chinook was nearly 300 per day. Finally, Pacific lamprey macrophthalmia were not encountered in this week's samples at RIS.

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. Sampling at IMN was suspended on May 30th due to damaged equipment. Trapping will resume when repairs are made.

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. Approximately 710,000 subyearling fall Chinook juveniles were scheduled for release to this zone this week. Of these, about 30% were released from Lyons Ferry Hatchery, below Little Goose Dam, on June 3rd. The other 70% were scheduled to be released from the Nez Perce Tribal Hatchery into the Clearwater River. There were no other releases scheduled for this zone this week.

An additional 710,000 subyearling fall Chinook juveniles are scheduled for release into this zone over the next 2 weeks. Of these, about 200,000 are scheduled to be released directly into the Snake River near Captain Johns Rapids Acclimation Pond. The remaining 510,000 are scheduled to be released from Nez Perce Tribal acclimation facilities in the Clearwater River Basin. There are no other releases scheduled for this zone over the next 2 weeks.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. The only new release that was scheduled for this zone this week was a release of about 80,000 fall Chinook juveniles to the Yakima River. This Yakima River release is expected to be 100% unclipped but tagged with coded-wire tags.

Many of the volitional releases of coho and summer steelhead juveniles that began several weeks ago are scheduled to end over the next 2 weeks. In addition, approximately 7.2 million subyearling fall Chinook juveniles are scheduled for release from Priest Rapids Hatchery next week. Of these, approximately 61% are unmarked and another 8% are marked with coded-wire tags only. The remaining 31% are expected to be clipped.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Two new releases of subyearling fall Chinook juveniles were scheduled for this zone this week. The first was a release of approximately 4,000,000 juveniles to the Klickitat River on or around June 1st. The second was a release of about 2,400 juveniles to the Umatilla River on or around June 5th. In addition to these new releases, the volitional release of about 209,000 yearling spring Chinook juveniles from Round Butte Hatchery on the Deschutes River that began in early April was scheduled to end this week. There are no new 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 1,652 and 2,471 adult summer Chinook in the last week. The 2014 summer Chinook count of 11,122 is about 1.5 times greater than the 2013 count and 1.3 times greater than the 10-year average. The 2014 Bonneville Dam summer Chinook jack count of 1,693 is 70.7% of the 2013 count and about 95% of the 10-year average count. A total of 188,083 adult spring Chinook have been counted at Bonneville Dam this year. In 2013, 83,345 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2014 adult spring Chinook count at Bonneville Dam is about 2.3 times greater than the 2013 count and 1.4 times greater than the 10-year average count of 130,283. The 2014 spring Chinook jack count of 26,094 is 77.1% of the 2013 count of 33,820, while being 1.2 times greater than the 10-year average count of 22,257. At Willamette Falls 20,131 adult spring Chinook has been counted so far this year. In 2013, 18,256 adult spring Chinook were counted at Willamette. This year's count is about 1.1 times greater than the 2013 count, while being 71.8% of the 10-year average count of 28,026. As of June 6th, a total of 143,142 adult spring Chinook have been counted at The Dalles Dam and 103,480 have been counted at McNary Dam. The Dalles Dam 2014 adult spring Chinook count is about 2.1 times greater than 2013 and 1.4 times greater than the 10-year average count. The 2014 McNary Dam adult spring Chinook count is about 2.1 times greater than the 2013 count and 1.4 times greater than the 10-year average count.

The 2014 Bonneville Dam adult steelhead count of 6,267 is about 1.7 times greater than the 2013 count of 3,661 and has 165 more fish than the 10-year average count of 6,102. The 2014 Bonneville Dam adult wild steelhead count of 1,619 is about 1.7 times greater than the 2013 count of 967 and has 83 more fish than the 10-year average count of 1,536. Daily adult steelhead counts at Lower Granite Dam ranged from 2 to 10 adults per day last week. This year's Lower Granite steelhead count of 7,515 has 72 more fish than the 2013 count of 7,443, while being about 85.2% of the 10-year average count of 8,816. The 2014 Lower Granite Dam adult wild steelhead count of 3,469 has 235 more fish than the 2013 count of 3,234 and is about 1.1 times

greater than the 10-year average count of 3,155. At Willamette Falls, the 2014 count for steelhead was 12,500 as of June 2nd. This year's steelhead count is about 1.1 times greater than the 2013 count of 11,426, while being about 80% of the 10-year average count of 15,624.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 10 and 192 last week. The 2014 adult sockeye count at Bonneville Dam of 489 has 61 more fish than the 2013 count, while having 81.5% of the 10-year average count.

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. Grant County will not be capable of counting adult fish at the usual count stations at either the left or right bank fishways at Wanapum Dam, due to the lower than normal upper ladder flows. Grant County does have people monitoring/observing passage at the exit structures at Wanapum Dam.

Visual observations of the exit retrofits have been promising. During a Wanapum Dam site visits on May

7 and 21 and June 4, 2014, several hundred adult 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 does have plans to modify the exit chutes to include a spiral flume that will reduce the elevation of the chute outflow from approximately 10 feet down to several feet. Grant PUD plans to install the spiral flume at the left bank fishway on Monday and Tuesday June 9 and 10, 2014. The ladder outage has now been reduced to a 2-day period, depending on weather (wind).

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 two denils in place at the right bank fishway. A denil extension is also planned to be in place at the left bank fishway in June.

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 four weeks and the last weeks of sampling indicated that approximately 15% of fish had notable injuries. During a sample of 77 fish on June 5, 2014, 13 had significant injuries, with several that looked relatively fresh with injuries likely to have occurred within several days of being trapped at Wells Dam. The source of these injuries continues to be investigated and video counts at dams below Wells are being reviewed to narrow the source of the large/fresh injuries.

Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	5/23/2014		to		06/05/14				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Chief Joseph Hatchery	CH0	SU	2014	180,000	05-15-14	06-01-14	Omak Creek	Okanogan River
Colville Tribe Total					180,000				
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	500,000	06-03-14	06-14-14	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe Total					500,000				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2014	209,117	04-01-14	06-01-14	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH0	FA	2014	2,400	06-05-14	06-05-14	Umatilla River	Umatilla River
Oregon Dept. of Fish and Wildlife Total					211,517				
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2014	225	05-25-14	05-31-14	Crab Creek	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2014	4,700	05-01-14	05-31-14	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2014	175	05-01-14	05-31-14	Methow River	Methow River
Washington Dept. of Fish and Wildlife	COOP	CH0	SU	2014	225	05-01-14	05-31-14	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2014	209,972	06-03-14	06-03-14	Lyons Ferry Hatchery	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	Wells Hatchery	ST	SU	2014	160,000	05-20-14	05-25-14	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife Total					475,297				
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,841	05-01-14	05-30-14	Methow River	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	49,892	05-01-14	05-30-14	Winthrop Hatchery	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	64,822	05-01-14	05-30-14	Biddle Pond	Methow River
Yakama Tribe	Cascade Hatchery	CO	UN	2014	89,748	05-01-14	05-30-14	Twisp Acclim Pond	Methow River
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	Klickitat Hatchery	CH0	FA	2014	4,000,000	06-01-14	06-01-14	Klickitat Hatchery	Klickitat River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2014	80,000	06-01-14	06-01-14	Nelson Springs	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	Willard Hatchery	CO	UN	2014	17,280	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	33,608	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	62,997	05-01-14	05-30-14	Coulter Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	72,081	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	101,921	05-01-14	05-30-14	Rolfings Acclim Pond	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	109,688	05-01-14	05-30-14	Butcher Creek Acclim. Pond	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2014	279,377	05-01-14	05-30-14	Winthrop Hatchery	Methow River
Yakama Tribe Total					5,877,053				
Grand Total					7,243,867				

Hatchery Releases Next Two Weeks

Agency	Hatchery	Hatchery Release Summary		MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
		From:	to						
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	240,000	06-13-14	06-13-14	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	270,000	06-13-14	06-13-14	Lukes Gulch Acclim. Nez Perce Tribal	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2014	500,000	06-03-14	06-14-14	Hatchery	Clearwater River M F
Nez Perce Tribe Total					1,010,000				
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 Total					7,529,543				
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 Lost Creek Acclim	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2014	94,680	04-15-14	06-15-14	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					9,405,341				

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
05/23/2014	168.6	0.7	167.3	39.1	197.8	47.3	195.1	39.7	208.4	27.2	199.2	74.7	213.5	84.3
05/24/2014	158.8	1.7	160.7	42.5	194.4	48.0	195.4	28.8	206.3	42.1	203.7	82.3	224.3	95.8
05/25/2014	164.2	1.1	165.3	47.7	199.5	30.2	193.4	22.2	204.2	42.2	199.5	72.7	212.2	96.8
05/26/2014	164.9	1.4	166.1	53.6	196.8	40.4	195.5	29.0	205.7	42.8	202.6	82.7	224.8	96.8
05/27/2014	168.6	1.6	164.4	70.0	198.5	31.9	198.8	30.3	205.9	45.1	200.3	80.9	220.7	103.3
05/28/2014	144.6	3.8	150.4	54.4	182.7	24.8	179.8	32.5	177.8	59.4	183.6	62.5	199.9	76.8
05/29/2014	159.4	3.9	162.6	49.5	195.1	53.4	197.7	50.3	193.5	128.2	202.9	79.2	224.7	104.7
05/30/2014	169.3	3.9	165.7	20.7	180.3	77.2	178.8	62.1	183.4	83.1	178.8	62.5	200.0	64.8
05/31/2014	174.3	4.0	171.8	35.4	200.5	29.2	195.7	41.8	195.9	65.9	188.7	73.0	192.6	91.7
06/01/2014	175.2	5.9	186.8	57.0	216.3	56.9	216.3	69.8	220.5	76.3	212.3	99.4	237.0	110.3
06/02/2014	176.3	10.0	171.1	46.5	191.1	33.4	189.6	44.7	197.5	50.4	194.9	80.4	228.2	93.9
06/03/2014	168.2	6.2	174.6	49.9	201.9	25.2	200.3	28.6	205.5	46.7	195.2	76.2	205.2	104.6
06/04/2014	166.9	0.1	166.5	40.8	191.2	16.0	189.5	27.7	198.0	43.1	196.4	76.6	214.6	105.5
06/05/2014	167.8	1.2	169.1	35.8	197.9	19.6	198.5	30.4	205.4	43.5	198.1	74.6	213.2	100.2

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

Date	Dworshak		Brownlee		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/23/2014	2.3	0.1	16.8	11.1	128.2	38.6	121.9	36.3	123.1	26.8	128.4	79.7	128.4	79.7
05/24/2014	2.4	0.3	17.3	13.2	138.4	47.2	132.7	34.6	131.8	32.8	136.5	80.7	136.5	80.7
05/25/2014	2.3	0.2	18.1	13.3	148.9	57.8	140.0	34.6	140.9	33.1	148.6	80.6	148.6	80.6
05/26/2014	2.3	0.3	18.7	13.7	145.5	54.4	139.2	34.5	139.6	33.1	145.2	80.4	145.2	80.4
05/27/2014	2.3	0.0	18.9	12.9	142.9	51.6	135.9	34.6	136.2	37.3	142.9	72.4	142.9	72.4
05/28/2014	2.3	0.2	19.1	13.0	140.6	49.1	132.9	34.7	134.2	37.2	140.2	80.1	140.2	80.1
05/29/2014	2.3	0.0	19.7	16.0	136.6	45.6	130.0	34.6	130.7	35.5	137.0	78.9	137.0	78.9
05/30/2014	2.3	0.0	20.3	22.0	132.5	48.7	127.2	34.6	127.8	36.3	132.1	74.0	132.1	74.0
05/31/2014	2.3	0.0	20.2	21.8	128.6	38.1	123.1	34.5	123.0	38.0	129.6	72.3	129.6	72.3
06/01/2014	4.5	0.3	19.4	18.7	121.5	34.2	116.2	31.7	117.9	36.1	121.2	66.4	121.2	66.4
06/02/2014	4.4	0.0	18.1	20.3	120.2	31.3	114.1	29.0	112.6	35.9	118.8	57.6	118.8	57.6
06/03/2014	4.4	0.0	17.4	16.6	116.5	31.0	110.8	28.9	113.3	35.7	116.4	70.1	116.4	70.1
06/04/2014	4.4	0.0	16.9	15.9	118.6	33.1	113.3	29.0	114.2	35.9	117.7	67.7	117.7	67.7
06/05/2014	4.4	0.0	16.5	17.6	116.2	29.6	110.9	32.2	112.1	29.3	116.6	53.7	116.6	53.7

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		
05/23/2014	351.5	200.1	347.9	144.4	328.3	125.1	340.1	138.8	---	---
05/24/2014	353.1	203.1	354.7	142.1	339.5	124.9	359.6	157.0	---	---
05/25/2014	362.1	211.1	362.0	147.4	344.3	130.9	369.9	162.6	---	---
05/26/2014	359.6	209.1	358.9	149.6	336.6	129.3	354.2	152.7	---	---
05/27/2014	375.5	227.9	376.1	154.7	357.7	135.5	372.2	169.6	99.3	90.9
05/28/2014	360.4	220.5	365.4	140.3	350.2	130.1	370.7	169.4	97.8	91.1
05/29/2014	348.7	207.6	356.9	140.3	340.3	129.2	358.6	157.6	98.8	89.8
05/30/2014	356.4	220.0	357.5	140.3	337.5	129.8	360.3	156.8	100.1	91.0
05/31/2014	332.0	193.3	332.8	116.3	314.2	105.9	335.3	135.4	97.2	90.3
06/01/2014	325.4	177.6	327.6	117.6	308.0	104.8	324.9	128.3	93.8	90.4
06/02/2014	365.7	219.0	355.9	144.6	336.7	126.4	357.9	147.4	96.8	101.3
06/03/2014	334.3	184.4	340.9	141.6	322.3	125.3	343.4	125.6	96.0	109.4
06/04/2014	329.7	186.4	325.1	109.9	309.5	118.7	333.2	118.1	94.5	108.3
06/05/2014	334.5	193.2	329.8	112.3	314.4	123.2	333.2	113.8	95.6	111.4

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
Lower Granite Dam											
	05/29/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/05/14	Chinook + Steelhead	61	0	0	0.00%	0.00%	0	0	0	0
Little Goose Dam											
	05/26/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/02/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Lower Monumental Dam											
	05/28/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/04/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	05/26/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/30/14	Chinook + Steelhead	75	0	0	0.00%	0.00%	0	0	0	0
	06/01/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/05/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
Bonneville Dam											
	05/24/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/27/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/31/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/03/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	05/27/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/30/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/03/14	Chinook + Steelhead	70	5	5	7.14%	0.00%	4	1	0	0
	06/05/14	Chinook + Steelhead	71	0	0	0.00%	0.00%	0	0	0	0

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>				<u>Boundary</u>				<u>Grand Coulee</u>				<u>Grand C. Tlwr</u>				<u>Chief Joseph</u>				
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>
5/23	106.3	109.1	109.4	24	---	---	---	---	0	114.9	115.2	115.4	24	113.8	114.0	114.6	24	112.8	112.9	113.0	24
5/24	100.1	100.5	101.6	24	---	---	---	---	0	115.4	115.7	116.0	24	114.4	114.9	115.8	24	113.1	113.7	114.3	24
5/25	99.5	99.7	99.7	24	---	---	---	---	0	116.1	116.4	116.5	24	114.9	115.6	117.4	24	114.0	114.6	116.6	24
5/26	99.4	99.8	100.1	24	---	---	---	---	0	116.5	116.7	116.8	24	115.3	116.1	116.6	24	115.3	116.1	116.9	24
5/27	99.3	99.6	100.1	24	---	---	---	---	0	116.7	116.9	117.1	24	115.5	116.6	118.8	24	114.9	115.7	116.7	24
5/28	103.1	106.7	109.3	24	---	---	---	---	0	116.9	117.0	117.2	24	117.1	117.8	118.5	24	115.4	116.5	116.9	24
5/29	109.2	109.4	109.6	24	---	---	---	---	0	116.3	116.4	116.5	24	117.8	118.3	118.6	24	115.2	116.6	117.7	24
5/30	109.3	109.5	109.8	24	---	---	---	---	0	116.4	116.5	116.6	24	118.1	118.6	119.1	24	118.1	118.6	118.9	24
5/31	109.4	109.5	109.9	24	---	---	---	---	0	116.7	116.9	117.0	24	118.5	119.0	119.5	24	118.9	119.3	119.6	24
6/1	109.3	109.5	109.7	24	---	---	---	---	0	117.2	117.4	117.5	24	117.3	118.1	118.7	24	118.9	119.1	119.3	24
6/2	105.2	108.6	109.4	24	---	---	---	---	0	117.8	118.1	118.3	24	116.5	117.0	117.3	24	119.6	120.2	120.8	24
6/3	102.4	102.8	104.3	24	---	---	---	---	0	118.2	118.3	118.4	24	116.1	116.3	116.6	24	117.1	118.3	119.8	24
6/4	104.9	105.2	105.6	24	---	---	---	---	0	117.9	118.2	118.4	24	115.9	116.4	116.8	24	115.3	115.6	115.9	24
6/5	105.0	105.4	105.6	23	---	---	---	---	0	117.5	117.8	118.0	23	114.4	115.1	116.0	23	114.6	115.3	115.7	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>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
5/23	113.0	113.7	114.8	24	111.7	111.8	112.3	17	117.1	117.6	118.2	17	115.7	116.3	116.6	24	119.8	120.9	122.2	24
5/24	114.0	114.6	115.0	24	111.6	111.7	112.0	14	117.4	117.6	118.4	14	114.9	115.5	116.0	24	119.1	119.7	120.6	22
5/25	115.2	115.7	115.9	24	112.3	112.4	112.6	17	115.0	115.1	115.2	15	116.4	116.9	117.1	24	118.5	118.8	119.1	24
5/26	115.7	115.9	116.2	24	113.1	113.5	114.1	17	117.0	117.5	119.0	17	114.2	114.4	115.1	22	118.3	119.0	120.8	22
5/27	115.7	116.1	116.4	24	113.5	114.2	114.8	20	116.9	117.5	118.7	20	115.2	115.7	115.9	22	119.0	119.4	119.8	22
5/28	115.4	115.8	116.2	24	114.1	114.3	114.6	21	116.2	116.7	118.4	21	116.0	116.7	117.1	19	119.9	120.1	120.8	15
5/29	114.3	115.6	116.1	24	113.2	113.5	113.9	19	119.0	120.6	124.7	19	114.2	114.7	115.6	22	121.0	121.4	121.8	19
5/30	111.8	112.1	112.4	24	114.6	115.2	115.8	20	126.1	127.8	131.3	20	117.2	118.4	122.2	21	122.5	123.0	124.2	19
5/31	113.8	115.3	115.7	24	116.2	116.6	116.8	23	119.2	121.1	127.7	23	123.6	123.9	126.2	16	124.4	124.6	125.3	14
6/1	115.9	116.2	117.1	24	116.6	117.0	117.3	23	121.9	122.9	124.6	23	119.0	120.2	126.1	19	125.7	126.3	126.7	19
6/2	114.9	115.9	118.2	24	116.8	117.2	117.7	22	119.9	121.2	122.8	22	120.7	121.1	122.2	20	123.7	124.8	126.5	17
6/3	114.7	116.2	116.8	24	116.6	117.0	117.4	22	118.5	119.2	120.7	22	119.1	120.4	120.9	23	120.9	121.1	121.6	21
6/4	113.8	115.0	115.6	24	113.8	114.1	115.3	19	115.4	115.8	116.8	19	116.7	116.8	117.5	14	120.4	120.5	121.0	14
6/5	113.1	114.2	115.5	23	113.0	113.6	113.9	22	114.7	115.4	115.9	22	114.0	114.2	114.8	16	119.5	119.8	120.0	16

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>				<u>Rock I. Tlwr</u>				<u>Wanapum</u>				<u>Wanapum Tlwr</u>				<u>Priest Rapids</u>			
	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#	<u>24 h</u>		<u>12 h</u>		#
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>		<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	
5/23	111.9	115.2	115.6	22	116.0	116.2	116.5	22	115.4	116.5	117.4	24	120.6	121.5	123.6	24	118.7	119.0	119.5	24
5/24	100.1	102.2	107.1	23	115.9	116.0	116.1	23	114.4	115.6	116.0	24	121.1	122.0	123.3	24	119.5	120.7	121.6	24
5/25	102.7	104.3	107.9	24	116.1	116.3	116.4	24	115.4	115.9	116.2	24	120.2	120.7	121.8	24	118.3	118.9	119.2	24
5/26	101.4	102.1	103.1	23	115.9	116.0	116.1	23	115.3	116.0	116.4	23	121.9	123.3	123.7	23	120.6	121.9	122.3	23
5/27	102.0	103.0	103.8	22	117.1	118.3	119.0	21	114.5	115.3	115.5	24	120.2	121.0	121.6	24	118.5	119.7	120.4	24
5/28	107.9	112.1	115.1	21	117.7	118.9	124.5	21	114.4	115.4	116.2	24	118.2	119.3	119.6	24	116.3	117.3	118.0	24
5/29	115.3	115.7	116.4	20	122.8	123.7	124.6	20	---	---	---	0	---	---	---	0	---	---	---	0
5/30	117.4	118.3	119.0	20	121.9	122.7	123.6	20	---	---	---	0	---	---	---	0	---	---	---	0
5/31	120.8	121.3	122.6	15	122.4	122.6	123.3	14	---	---	---	0	---	---	---	0	---	---	---	0
6/1	121.0	121.5	122.4	17	123.5	124.1	125.0	17	---	---	---	0	---	---	---	0	---	---	---	0
6/2	120.4	120.6	122.2	13	121.9	122.0	123.9	13	---	---	---	0	---	---	---	0	---	---	---	0
6/3	117.7	118.6	119.6	23	120.0	120.7	122.4	23	---	---	---	0	---	---	---	0	---	---	---	0
6/4	115.7	115.8	116.9	14	118.0	118.2	119.9	14	---	---	---	0	---	---	---	0	---	---	---	0
6/5	115.0	115.2	116.1	15	118.3	118.6	119.1	15	---	---	---	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	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clrwtr-Peck			#	Anatone			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
5/23	119.6	120.1	120.9	24	---	---	---	0	101.3	102.1	102.9	24	103.8	104.7	105.2	24	107.1	107.3	108.0	16
5/24	119.8	120.3	120.6	24	---	---	---	0	104.2	105.8	107.0	24	104.2	105.0	105.3	24	107.5	108.3	108.8	24
5/25	119.4	119.7	120.0	24	---	---	---	0	104.0	104.9	105.4	24	104.6	105.4	106.1	24	108.3	109.1	109.7	24
5/26	120.1	120.5	120.8	23	---	---	---	0	104.2	106.0	106.7	24	103.9	104.6	105.2	24	108.2	108.8	109.4	24
5/27	119.7	120.1	120.4	24	---	---	---	0	101.9	102.6	103.1	24	103.9	104.8	105.2	24	108.3	109.1	109.7	24
5/28	117.4	118.6	119.8	24	---	---	---	0	102.1	103.6	105.0	24	103.3	103.6	103.9	24	107.8	108.0	108.2	23
5/29	---	---	---	0	---	---	---	0	100.7	101.7	102.5	24	102.9	103.6	104.7	24	108.2	109.2	109.9	24
5/30	---	---	---	0	---	---	---	0	101.6	102.6	103.2	24	103.7	104.7	105.4	24	108.5	109.1	109.5	24
5/31	---	---	---	0	---	---	---	0	130.5	130.7	130.9	24	103.3	104.3	105.0	24	107.2	107.7	108.3	24
6/1	---	---	---	0	---	---	---	0	132.4	132.8	133.0	24	103.3	104.4	105.0	24	106.8	107.5	108.0	24
6/2	---	---	---	0	---	---	---	0	115.5	129.9	132.9	24	103.4	104.3	105.0	24	106.8	107.4	108.0	24
6/3	---	---	---	0	---	---	---	0	100.9	101.4	101.8	24	103.1	103.8	104.5	24	106.4	106.9	107.4	24
6/4	---	---	---	0	---	---	---	0	101.7	103.3	104.7	24	102.8	103.7	105.3	24	106.2	107.0	107.6	24
6/5	---	---	---	0	---	---	---	0	100.8	101.2	101.5	23	103.3	104.2	104.8	23	106.5	106.9	107.3	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
5/23	103.1	103.4	103.7	24	105.8	106.1	106.2	24	117.3	117.7	118.0	24	110.0	110.2	110.5	24	115.3	115.4	115.5	24
5/24	103.5	104.0	104.5	24	105.3	105.4	105.6	24	119.1	120.5	121.5	24	110.4	111.4	111.9	24	115.8	116.0	116.2	24
5/25	103.9	104.7	105.2	24	105.8	106.4	106.7	24	121.9	122.4	122.9	24	112.9	113.7	114.0	24	116.2	116.4	116.6	24
5/26	103.3	103.7	104.1	24	106.5	106.7	106.9	24	121.0	121.3	121.4	24	115.5	116.0	116.3	24	116.7	116.8	117.0	24
5/27	103.5	104.2	104.9	24	106.5	106.7	106.8	24	120.2	120.6	121.1	24	116.2	116.5	116.9	24	116.7	116.8	116.9	24
5/28	102.7	102.9	103.3	24	106.4	106.5	106.8	24	119.3	119.7	120.0	24	116.4	116.7	116.9	24	116.6	116.8	117.0	24
5/29	102.5	103.1	103.8	24	105.5	105.7	106.1	24	118.4	118.6	119.6	24	114.1	114.5	115.4	24	116.2	116.2	116.4	24
5/30	103.7	104.3	104.9	24	106.5	107.0	107.7	24	119.8	121.5	123.3	24	115.0	115.8	116.6	24	116.5	116.7	116.9	24
5/31	103.1	103.7	104.3	24	107.5	107.7	107.8	24	117.4	118.1	118.3	24	116.3	116.8	116.9	24	116.7	116.9	117.1	24
6/1	103.0	103.8	104.3	24	106.8	107.0	107.6	24	116.3	117.4	118.0	24	117.2	117.5	117.9	24	116.1	116.9	117.1	24
6/2	103.3	103.9	104.5	24	106.3	106.5	106.6	24	115.1	115.8	117.5	24	115.8	116.0	116.6	24	115.1	115.3	115.4	24
6/3	102.9	103.3	103.7	24	106.0	106.2	106.6	24	115.3	116.7	118.2	24	114.5	115.3	116.1	24	114.5	114.8	115.1	24
6/4	102.6	103.4	104.7	24	105.2	105.4	105.7	24	115.9	117.2	117.5	24	112.1	112.5	113.1	24	114.0	114.1	114.2	24
6/5	103.3	103.9	104.3	23	104.6	104.8	105.0	23	114.8	116.3	117.6	23	111.4	111.7	112.1	23	114.8	115.7	115.8	23

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
5/23	116.1	116.3	116.6	24	116.3	116.9	117.5	24	116.5	116.9	117.1	24	119.7	120.3	120.5	24	---	---	---	0
5/24	114.6	114.8	115.1	24	116.3	116.5	117.4	24	115.4	115.6	115.7	24	120.0	120.5	121.0	24	---	---	---	0
5/25	114.8	115.0	115.3	24	116.4	116.7	116.9	24	115.1	115.2	115.5	24	120.5	121.2	121.5	24	---	---	---	0
5/26	114.5	114.6	114.7	24	116.4	116.5	116.7	24	114.3	114.6	114.9	24	120.4	120.9	121.2	24	---	---	---	0
5/27	115.6	116.3	116.8	24	117.7	118.9	119.8	24	113.8	114.2	114.5	24	120.3	120.7	121.0	24	---	---	---	0
5/28	116.2	116.5	116.7	24	117.5	118.4	119.6	24	114.6	114.8	115.1	24	119.4	120.0	120.4	24	---	---	---	0
5/29	115.3	115.5	115.8	24	116.6	116.7	117.1	24	113.9	114.1	114.3	24	119.7	120.2	120.4	24	---	---	---	0
5/30	116.4	117.0	117.3	24	116.9	117.2	117.4	24	115.1	115.8	116.2	24	119.7	119.9	120.1	24	---	---	---	0
5/31	117.2	117.6	117.8	24	117.3	117.4	117.6	24	116.2	116.6	116.7	24	119.7	120.0	120.5	24	---	---	---	0
6/1	117.4	117.8	118.1	24	116.8	116.9	117.2	24	116.5	116.9	117.2	24	118.6	119.2	119.6	24	---	---	---	0
6/2	118.3	118.8	119.3	24	116.6	116.8	117.1	24	117.4	117.8	118.0	24	117.9	118.9	119.6	24	---	---	---	0
6/3	116.5	117.0	117.9	24	116.3	116.5	116.7	24	117.0	117.3	117.6	24	118.4	119.3	119.6	24	---	---	---	0
6/4	114.7	114.9	115.3	24	116.5	116.7	116.8	24	115.8	116.0	116.6	24	118.7	119.7	120.2	24	---	---	---	0
6/5	113.8	114.0	114.2	23	117.7	118.8	119.3	23	115.0	115.2	115.4	23	117.3	118.1	120.0	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	McNary-Wash			#	McNary Tlwr			#	John Day			#	John Day Tlwr			#	The Dalles			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High	
5/23	115.5	115.8	115.9	24	120.2	120.3	120.5	24	117.1	117.4	117.6	24	118.6	118.9	119.3	24	115.9	116.3	117.1	24
5/24	114.5	114.7	114.8	24	120.3	120.5	120.9	24	116.1	116.4	116.5	24	118.3	118.5	118.9	24	115.2	115.5	115.7	24
5/25	114.8	115.1	115.4	24	120.7	120.9	121.1	24	114.8	115.1	115.2	24	118.6	118.9	119.1	24	115.3	116.1	116.7	24
5/26	114.6	114.8	115.1	24	120.5	120.9	121.7	24	113.4	113.6	114.2	24	118.5	118.7	119.4	24	114.5	114.8	115.5	24
5/27	113.5	113.7	114.1	24	121.8	122.1	122.6	24	113.5	113.8	113.9	24	119.7	119.8	120.1	24	114.5	115.0	115.3	24
5/28	113.7	113.9	114.1	24	121.3	121.7	121.8	24	112.7	113.5	113.8	24	118.4	118.5	118.7	24	113.7	113.7	114.2	5
5/29	112.4	112.7	113.1	24	123.6	126.7	129.2	24	111.1	111.8	112.4	24	118.2	118.3	118.4	24	114.3	114.3	114.4	6
5/30	113.1	113.7	114.2	24	123.7	126.0	134.0	24	113.1	113.6	113.9	24	118.6	118.8	119.1	24	114.8	115.6	116.6	22
5/31	114.6	115.1	115.8	24	120.1	120.4	120.6	24	113.6	113.9	114.1	24	117.7	118.2	118.7	24	114.9	114.9	115.5	4
6/1	116.4	116.7	117.0	24	119.2	119.6	120.3	24	115.9	117.6	118.8	24	117.8	118.4	119.2	24	111.9	111.9	111.9	1
6/2	116.4	116.9	117.0	24	121.4	122.0	122.4	24	120.3	121.1	121.6	24	119.6	120.0	120.9	24	118.2	118.3	118.9	13
6/3	116.6	116.8	116.9	24	119.6	120.1	120.5	24	116.6	117.8	119.5	24	119.0	119.3	120.0	24	114.7	115.9	118.0	24
6/4	116.2	116.6	116.8	24	119.7	120.0	120.5	24	114.4	114.7	115.0	24	117.7	118.3	118.6	24	113.1	114.3	115.2	24
6/5	115.2	115.7	116.3	23	119.8	120.3	120.5	23	113.7	114.0	114.5	23	117.9	118.3	119.3	23	112.7	114.4	115.4	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	The Dalles Dnst			#	Bonneville			#	Warrendale			#	Camas\Washougal			#	Cascade Island			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High		24h Avg	12h Avg	High	
5/23	119.9	120.3	121.0	24	116.0	116.6	117.0	24	117.6	118.0	118.3	24	116.3	116.9	117.4	24	123.6	123.7	123.8	24
5/24	118.7	118.9	119.2	24	116.0	116.1	116.3	24	118.3	118.8	119.1	24	116.8	118.1	118.6	24	123.7	123.9	124.1	24
5/25	119.3	119.7	119.9	24	116.2	116.6	117.1	24	118.8	118.9	119.1	24	118.3	118.8	119.2	24	123.9	124.0	124.2	24
5/26	119.2	119.7	120.0	24	116.6	117.0	117.2	24	118.5	118.7	119.0	24	117.2	117.8	118.3	24	123.9	124.1	124.2	24
5/27	119.2	119.7	121.0	24	116.6	116.9	117.3	24	119.2	119.5	119.8	24	117.9	118.9	119.6	24	124.1	124.1	124.3	24
5/28	117.6	118.0	118.8	24	115.0	115.4	115.7	24	118.3	118.5	118.8	24	117.6	117.9	118.0	24	123.9	124.0	124.2	24
5/29	117.8	118.4	119.2	24	114.7	115.4	116.0	24	117.4	118.0	118.6	24	117.2	117.5	118.0	24	123.3	123.5	123.7	24
5/30	119.6	120.2	120.5	24	117.6	117.6	118.4	11	119.2	119.2	119.6	11	118.6	118.6	119.9	11	123.3	123.3	124.3	11
5/31	117.9	118.3	119.8	24	116.9	117.8	118.3	24	118.3	119.1	119.7	24	118.0	118.9	119.7	24	122.3	123.5	124.3	24
6/1	117.0	118.0	118.8	24	113.7	114.0	115.2	24	115.9	116.1	116.4	24	115.5	116.2	116.8	24	120.9	121.5	123.2	24
6/2	120.0	121.8	122.4	24	114.3	114.8	115.1	24	116.9	117.5	117.7	24	115.4	116.3	116.9	24	123.7	124.0	124.2	24
6/3	119.4	121.0	122.5	24	113.9	114.2	114.5	24	115.7	116.2	116.7	24	114.5	114.7	115.0	24	122.1	123.6	124.0	24
6/4	117.9	119.0	119.4	24	112.7	113.2	113.4	24	114.7	115.0	115.3	24	114.2	114.7	115.5	24	120.3	121.2	121.4	24
6/5	118.3	119.2	120.1	23	112.9	113.4	114.5	23	114.5	114.9	115.4	23	113.0	114.0	114.6	23	119.7	120.5	123.3	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 6/6/2014 7:38

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												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
05/23/2014	*	---	20	---	---	19,050	30,406	20,208	498	53,544	25,377	44,996
05/24/2014	*	---	15	---	---	16,937	15,947	14,344	598	---	39,303	30,314
05/25/2014	*	---	13	---	---	26,019	21,320	15,206	567	37,454	36,239	31,130
05/26/2014	*	---	3	---	---	20,615	21,363	8,836	267	---	31,986	33,413
05/27/2014	*	---	5	---	---	14,113	23,845	8,517	229	10,154	35,030	28,145
05/28/2014	*	---	11	---	---	10,250	14,473	7,032	266	---	21,267	24,133
05/29/2014		---	---	---	---	6,746	12,080	19,653	683	10,293	15,922	10,046
05/30/2014	*	---	---	---	---	3,975	4,364	2,943	223	---	12,916	6,653
05/31/2014	*	---	---	---	---	3,353	2,733	1,729	67	5,240	11,301	7,025
06/01/2014	*	---	---	---	---	2,016	1,434	1,403	82	---	7,499	6,469
06/02/2014		---	---	---	---	1,921	1,490	1,149	67	4,208	7,612	4,264
06/03/2014	*	---	---	---	---	2,210	672	736	41	---	7,011	6,308
06/04/2014		---	---	---	---	810	1,907	590	41	6,106	3,666	5,593
06/05/2014	*	---	---	---	---	2,344	2,019	426	28	---	4,362	3,975
06/06/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		0	67	0	0	130,359	154,053	102,772	3,657	126,999	259,491	242,464
# Days:		0	6	0	0	14	14	14	14	7	14	14
Average:		0	11	0	0	9,311	11,004	7,341	261	18,143	18,535	17,319
YTD		65,404	63,121	25,420	10,159	4,790,496	2,827,544	1,963,108	26,275	1,999,524	2,297,433	2,128,807

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)	
05/23/2014	*	---	0	---	---	268	1,434	499	62	6,381	7,214	6,679
05/24/2014	*	---	0	---	---	287	564	0	95	---	5,687	14,787
05/25/2014	*	---	0	---	---	9,202	1,599	130	310	8,747	6,346	11,241
05/26/2014	*	---	2	---	---	28,024	1,068	132	190	---	6,574	11,307
05/27/2014	*	---	0	---	---	31,113	2,940	0	132	11,938	7,542	8,958
05/28/2014	*	---	0	---	---	31,062	19,207	3	143	---	8,206	9,645
05/29/2014		---	---	---	---	38,023	8,932	2,866	224	10,293	6,262	5,289
05/30/2014	*	---	---	---	---	34,541	32,322	3,901	330	---	7,452	8,121
05/31/2014	*	---	---	---	---	41,148	32,179	7,134	102	6,169	6,438	7,506
06/01/2014	*	---	---	---	---	20,740	27,244	4,062	324	---	5,155	5,809
06/02/2014		---	---	---	---	28,259	52,271	13,433	247	5,237	5,785	5,685
06/03/2014	*	---	---	---	---	43,508	49,898	17,065	299	---	5,258	5,448
06/04/2014		---	---	---	---	20,798	25,203	16,390	328	12,121	6,665	6,621
06/05/2014	*	---	---	---	---	21,648	46,299	18,734	392	---	6,017	5,475
06/06/2014		---	---	---	---	---	---	---	---	---	---	---
Total:		0	2	0	0	348,621	301,160	84,349	3,178	60,886	90,601	112,571
# Days:		0	6	0	0	14	14	14	14	7	14	14
Average:		0	0	0	0	24,902	21,511	6,025	227	8,698	6,472	8,041
YTD		0	19	4	332	372,924	308,025	85,349	5,790	83,518	111,116	1,869,773

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)
05/23/2014 *	---	0	---	---	1,609	1,004	499	3,998	11,394	4,264	31,286
05/24/2014 *	---	0	---	---	4,880	1,693	812	4,672	---	7,404	18,854
05/25/2014 *	---	0	---	---	5,077	3,064	1,300	3,344	10,204	10,204	18,612
05/26/2014 *	---	0	---	---	2,899	4,273	1,714	2,474	---	9,836	15,421
05/27/2014 *	---	0	---	---	2,245	2,271	1,217	2,073	3,974	11,433	13,817
05/28/2014 *	---	0	---	---	932	1,894	841	1,941	---	5,344	12,608
05/29/2014	---	---	---	---	1,227	3,113	4,504	4,803	3,430	6,311	7,073
05/30/2014 *	---	---	---	---	611	409	684	3,999	---	4,090	7,044
05/31/2014 *	---	---	---	---	610	555	0	1,453	5,024	3,101	5,870
06/01/2014 *	---	---	---	---	0	141	148	1,472	---	5,312	6,441
06/02/2014	---	---	---	---	137	0	72	772	2,808	2,740	5,923
06/03/2014 *	---	---	---	---	0	268	147	828	---	1,870	5,919
06/04/2014	---	---	---	---	0	272	73	558	3,105	3,083	5,322
06/05/2014 *	---	---	---	---	276	135	142	509	---	2,031	5,175
06/06/2014	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	20,503	19,092	12,153	32,896	39,939	77,023	159,365
# Days:	0	6	0	0	14	14	14	14	7	14	14
Average:	0	0	0	0	1,465	1,364	868	2,350	5,706	5,502	11,383
YTD	0	0	0	267	73,584	59,016	27,178	63,989	138,281	217,871	752,011

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)
05/23/2014 *	---	332	---	---	42,755	25,955	17,464	618	6,399	9,686	8,085
05/24/2014 *	---	361	---	---	42,487	33,156	11,908	429	---	8,134	4,436
05/25/2014 *	---	243	---	---	36,173	29,577	18,975	512	3,894	12,237	6,443
05/26/2014 *	---	155	---	---	38,976	39,254	19,387	553	---	12,390	3,339
05/27/2014 *	---	142	---	---	65,112	40,296	23,119	395	3,520	15,567	6,141
05/28/2014 *	---	167	---	---	46,904	33,545	15,939	323	---	10,862	2,481
05/29/2014	---	---	---	---	22,385	28,566	32,345	591	2,377	6,859	2,906
05/30/2014 *	---	---	---	---	15,129	11,594	7,118	227	---	4,725	978
05/31/2014 *	---	---	---	---	13,716	6,539	3,603	67	1,608	7,344	1,444
06/01/2014 *	---	---	---	---	13,971	7,618	2,585	84	---	2,500	1,718
06/02/2014	---	---	---	---	10,289	9,205	3,161	65	1,739	2,335	1,777
06/03/2014 *	---	---	---	---	6,077	2,989	2,060	98	---	3,038	2,075
06/04/2014	---	---	---	---	6,077	4,359	2,102	74	1,322	1,666	1,257
06/05/2014 *	---	---	---	---	4,274	7,268	2,058	105	---	1,429	1,650
06/06/2014	---	---	---	---	---	---	---	---	---	---	---
Total:	0	1,400	0	0	364,325	279,921	161,824	4,141	20,859	98,772	44,730
# Days:	0	6	0	0	14	14	14	14	7	14	14
Average:	0	233	0	0	26,023	19,994	11,559	296	2,980	7,055	3,195
YTD	2,080	41,936	4,243	12,842	3,326,855	1,936,420	1,168,335	26,622	572,920	1,022,196	444,097

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)
05/23/2014 *	---	0	---	---	1,073	575	0	1,314	105,816	25,903	41,129
05/24/2014 *	---	0	---	---	574	1,271	1,624	777	---	38,272	42,883
05/25/2014 *	---	0	---	---	952	1,335	780	556	64,256	30,914	26,003
05/26/2014 *	---	0	---	---	322	801	659	341	---	30,669	23,389
05/27/2014 *	---	0	---	---	321	536	811	221	28,418	36,246	23,282
05/28/2014 *	---	0	---	---	311	406	280	255	---	17,520	20,962
05/29/2014	---	---	---	---	307	815	819	401	20,597	20,687	11,033
05/30/2014 *	---	---	---	---	0	682	890	73	---	12,775	10,958
05/31/2014 *	---	---	---	---	610	416	288	53	13,607	11,612	8,950
06/01/2014 *	---	---	---	---	144	564	443	31	---	12,498	5,160
06/02/2014	---	---	---	---	137	271	503	28	5,919	8,424	5,447
06/03/2014 *	---	---	---	---	414	134	441	18	---	7,712	5,006
06/04/2014	---	---	---	---	0	681	367	16	7,660	5,249	6,606
06/05/2014 *	---	---	---	---	138	269	142	13	---	5,265	3,900
06/06/2014	---	---	---	---	---	---	---	---	---	---	---
Total:	0	0	0	0	5,303	8,756	8,047	4,097	246,273	263,746	234,708
# Days:	0	6	0	0	14	14	14	14	7	14	14
Average:	0	0	0	0	379	625	575	293	35,182	18,839	16,765
YTD	0	0	2	0	180,572	86,852	68,731	37,701	1,482,543	559,860	570,028

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)
05/23/2014 *	---	0	---	---	0	2,600	200	4	0	285	0
05/24/2014 *	---	0	---	---	2	1,300	1,000	1	---	1,947	0
05/25/2014 *	---	0	---	---	2	200	5,100	0	0	900	5
05/26/2014 *	---	1	---	---	1	200	1,700	0	---	1,077	0
05/27/2014 *	---	0	---	---	4	0	1,800	0	200	1,857	133
05/28/2014 *	---	0	---	---	2	200	300	0	---	533	77
05/29/2014	---	---	---	---	6	400	5,100	1	1,400	4,818	100
05/30/2014 *	---	---	---	---	2	1,800	2,150	0	---	3,050	25
05/31/2014 *	---	---	---	---	4	1,400	3,600	0	1,300	4,600	25
06/01/2014 *	---	---	---	---	0	1,000	950	0	---	10,700	103
06/02/2014	---	---	---	---	0	500	2,400	0	1,725	4,400	133
06/03/2014 *	---	---	---	---	0	300	1,000	0	---	4,600	100
06/04/2014	---	---	---	---	0	100	300	0	6,350	5,400	335
06/05/2014 *	---	---	---	---	0	100	900	0	---	4,450	325
06/06/2014	---	---	---	---	---	---	---	---	---	---	---
Total:	0	1	0	0	23	10,100	26,500	6	10,975	48,617	1,361
# Days:	0	6	0	0	14	14	14	14	7	14	14
Average:	0	0	0	0	2	721	1,893	0	1,568	3,473	97
YTD	1	3	0	0	93	11,963	27,917	28	13,705	63,093	13,229

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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:

6/6/14 7:40 AM

05/23/14 TO 06/06/14

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
LGR	Sum of NumberCollected	235,000	86,510	13,500	241,990	3,600	580,600
	Sum of NumberBarged	233,382	84,224	13,497	235,895	3,581	570,579
	Sum of NumberBypassed	1,354	2,252	0	6,073	0	9,679
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	25	4	1	3	0	33
	Sum of FacilityMorts	239	28	2	19	19	307
	Sum of ResearchMorts	0	2	0	0	0	2
	Sum of TotalProjectMorts	264	34	3	22	19	342
LGS	Sum of NumberCollected	221,325	112,673	14,100	205,514	6,407	560,019
	Sum of NumberBarged	221,012	112,337	14,094	205,438	6,374	559,255
	Sum of NumberBypassed	15	0	0	0	0	15
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	11	10	0	2	3	26
	Sum of FacilityMorts	287	326	6	74	30	723
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	298	336	6	76	33	749
LMN	Sum of NumberCollected	58,568	77,222	9,000	120,210	5,850	270,850
	Sum of NumberBarged	57,031	67,486	6,800	104,253	5,427	240,997
	Sum of NumberBypassed	68	22	0	110	0	200
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	3	0	1	0	6
	Sum of FacilityMorts	67	127	0	52	29	275
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	69	130	0	53	29	281
Total Sum of NumberCollected		514,893	276,405	36,600	567,714	15,857	1,411,469
Total Sum of NumberBarged		511,425	264,047	34,391	545,586	15,382	1,370,831
Total Sum of NumberBypassed		1,437	2,274	0	6,183	0	9,894
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		38	17	1	6	3	65
Total Sum of FacilityMorts		593	481	8	145	78	1,305
Total Sum of ResearchMorts		0	2	0	0	0	2
Total Sum of TotalProjectMorts		631	500	9	151	81	1,372

YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/6/14 7:40 AM

TO: 06/06/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
LGR	Sum of NumberCollected	252,500	3,429,412	52,272	129,950	2,366,748	6,230,882
	Sum of NumberBarged	242,281	1,926,550	48,542	69,860	1,290,846	3,578,079
	Sum of NumberBypassed	9,913	1,501,395	3,722	59,638	1,075,670	2,650,338
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	54	131	1	43	54	283
	Sum of FacilityMorts	252	1,277	7	409	89	2,034
	Sum of ResearchMorts	0	59	0	0	89	148
	Sum of TotalProjectMorts	306	1,467	8	452	232	2,465
LGS	Sum of NumberCollected	226,084	1,943,913	41,542	60,134	1,342,270	3,613,943
	Sum of NumberBarged	225,505	1,760,576	40,643	53,797	1,122,146	3,202,667
	Sum of NumberBypassed	276	182,657	890	6,109	220,102	410,034
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	11	34	1	13	12	71
	Sum of FacilityMorts	292	646	8	215	140	1,301
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	303	680	9	228	152	1,372
LMN	Sum of NumberCollected	59,269	1,321,573	19,800	47,618	781,620	2,229,880
	Sum of NumberBarged	57,730	1,133,947	17,400	44,356	675,731	1,929,164
	Sum of NumberBypassed	70	177,056	0	2,568	89,907	269,601
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	2	25	0	1	16	44
	Sum of FacilityMorts	67	957	0	299	170	1,493
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	69	982	0	300	186	1,537
Total Sum of NumberCollected		537,853	6,694,898	113,614	237,702	4,490,638	12,074,705
Total Sum of NumberBarged		525,516	4,821,073	106,585	168,013	3,088,723	8,709,910
Total Sum of NumberBypassed		10,259	1,861,108	4,612	68,315	1,385,679	3,329,973
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		67	190	2	57	82	398
Total Sum of FacilityMorts		611	2,880	15	923	399	4,828
Total Sum of ResearchMorts		0	59	0	0	89	148
Total Sum of TotalProjectMorts		678	3,129	17	980	570	5,374

Cumulative Adult Passage at Mainstem Dams Through: 06/05

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	06/05	188083	26094	83345	33820	130283	22257	11122	1693	7285	2394	8273	1784	0	0	0	0	0	0
TDA	06/05	143142	21080	69202	32311	99813	18973	2436	497	2437	703	2533	516	0	0	0	0	0	0
JDA	06/05	123224	19103	56991	28957	86799	17656	0	0	0	0	0	0	0	0	0	0	0	0
MCN	06/05	103480	15440	49774	21594	75827	14075	0	0	0	0	0	0	0	0	0	0	0	0
IHR	06/05	74799	11062	35657	17173	50928	8616	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/05	73153	11715	33193	17070	49115	7326	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/05	70675	11055	30722	16946	43304	7829	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/05	69882	10642	30004	16852	41477	8505	0	0	0	0	0	0	0	0	0	0	0	0
PRD	06/04	19642	2317	11028	1136	12679	1228	0	0	0	0	0	0	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	06/04	18484	2371	9241	2593	11207	1763	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/04	9511	1895	4503	1901	4373	690	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/04	7762	1560	2763	2279	2738	666	0	0	0	0	0	0	0	0	0	0	0	0
WFA	06/02	20131	747	18256	878	28026	633	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2014		2013		10-Yr Avg.		2014	2013	10-Yr Avg.	2014	2013	10-Yr Avg.	Wild 2014	Wild 2013	10-Yr Avg.	2014	2013	10-Yr Avg.
BON	06/05	5	-2	0	0	0	0	489	428	600	6267	3661	6102	1619	967	1536	3543	2008	1397
TDA	06/05	0	0	0	0	0	0	159	170	255	1058	923	2705	245	367	960	3	1	10
JDA	06/05	0	1	0	0	0	0	54	135	153	3277	1025	5088	1156	499	1631	138	41	50
MCN	06/05	0	0	1	0	1	0	4	34	26	940	1554	5627	353	724	1873	8	24	6
IHR	06/05	0	0	0	0	0	0	0	1	0	1841	3859	4625	774	1498	1372	6	11	0
LMN	06/05	0	0	0	0	0	0	1	1	0	1762	2537	6783	949	1381	2853	2	1	0
LGS	06/05	0	0	0	0	0	0	0	1	0	1600	2216	6770	1008	1186	2335	0	2	0
LGR	06/05	0	0	0	0	0	0	0	0	0	7515	7443	8816	3469	3234	3155	0	2	0
PRD	06/04	0	0	0	0	0	0	34	5	0	117	60	56	0	0	0	3	14	4
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/04	0	0	0	0	0	0	2	1	1	282	108	105	153	79	60	0	0	0
RRH	06/04	0	0	0	0	0	0	2	0	0	255	165	367	159	141	271	0	0	0
WEL	06/04	0	0	0	0	0	0	0	0	0	124	68	68	76	61	48	0	0	2
WFA	06/02	9	0	2	0	0	0	0	0	0	12500	11426	15624	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.