



Fish Passage Center

Weekly Report #14 - 18

July 18, 2014

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Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 6% and 71% of average at individual sub-basins over the first sixteen days of July. Precipitation above The Dalles has been 22% of average over the first half of July. Over the 2014 water year, precipitation has ranged between 74% and 99% of average.

Table 1. Summary of July precipitation and cumulative October through July 16, 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	
	July 1-16, 2014		October 1, 2013 to July 16, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	0.29	22	30.4	92
Snake River above Ice Harbor	0.13	26	15.8	78
Columbia above The Dalles	0.16	22	20.3	82
Kootenai	0.28	19	32.2	95
Clark Fork	0.13	16	19.7	81
Flathead	0.51	44	31.8	99
Pend Oreille River Basin above Waneta Dam	0.25	26	26.1	89
Salmon River Basin	0.12	15	19.2	74
Upper Snake Tributaries	0.55	71	21.2	88
Clearwater	0.10	11	33.6	90
Willamette River above Portland	0.03	6	51.1	83

Table 2 displays the July 17th ESP runoff volume forecasts for multiple reservoirs. The July 17th ESP forecast at The Dalles between January and July is 108,060 Kaf (107% of average).

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

Location	July 17, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	107	108060
Grand Coulee (Jan–July)	109	65024
Libby Res. Inflow, MT (Apr–Aug)	116	6849
Hungry Horse Res. Inflow, MT (Jan–July)	133	2784
Lower Granite Res. Inflow (Apr–July)	99	19675
Brownlee Res. Inflow (Apr–July)	63	3439
Dworshak Res. Inflow (Apr–July)	123	2970

Grand Coulee Reservoir is at 1289.2 feet (7-17-14) and has refilled 0.5 feet over the last week (0.8 feet from full). Outflows at Grand Coulee have ranged between 130.5 and 152.0 Kcfs over the last week. The end of August draft limit at Grand Coulee is 1280 feet this year.

The Libby Reservoir is currently at elevation 2452.4 feet (7-17-14) and has refilled 1.0 foot over the previous week (6.6 feet from full). Daily average outflows at Libby Dam have been 15 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3559.5 feet (7-17-14) and has held steady over the previous week (0.5 feet from full). Outflows at Hungry Horse have ranged between from 4.4 Kcfs to 5.7 Kcfs over the

last week.

Dworshak is currently at an elevation of 1589.2 feet (7-17-14) and has drafted 6.2 feet over the previous week. Outflows over the past week ranged from 11.8 Kcfs 13.7 Kcfs. Currently, Dworshak is releasing approximately 13.5 Kcfs for lower Snake River water temperature control and flow augmentation.

The Brownlee Reservoir was at an elevation of 2069.9 feet on July 17, 2014 and has drafted 3.0 feet last week. Inflows to Brownlee Dam have ranged between 9.4 and 12.2 Kcfs last week.

The Summer Biological Opinion flow period began on June 21st in the lower Snake River (Lower Granite). According to the June Final Water Supply Forecast (June 6, 2014), the flow objective this summer is 52 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 46.2 Kcfs over the past week and 60.0 since the beginning of the summer flow period. The flow objective at McNary over the summer period (July 1st to August 31st) is 200 Kcfs. Flows at McNary Dam have averaged 217.0 Kcfs over the past week and 240.1 Kcfs since the beginning of the summer flow period.

Spill

The Snake River projects transitioned 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.

All of the Snake River projects met the summer spill levels specified in the Fish Operations Plan (FOP). Spill equal to 18 Kcfs occurred at Lower Granite Dam. Spill at Little Goose Dam averaged the 30% of total flow volume specified in the FOP. At Lower Monumental Dam spill was a 17 Kcfs daily average. The summertime “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, ended on July 13th. Spill will continue as 45 Kcfs/ Gas cap until the end of the season.

Project	Spill Level Day/Night
Lower Granite	18 Kcfs/18 Kcfs
Little Goose	30%/30%
Lower Monumental	17 Kcfs/17 Kcfs
Ice Harbor	July 13: end of 30%/30% vs. 45 Kcfs/Gas Cap July 14 to Aug 31: 45 Kcfs/Gas Cap

At the Middle Columbia River projects, McNary Dam spilled 50% of daily average flow. 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 alternating 85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs.

Project	Spill Level Day/Night
McNary	50%/50%
John Day	Testing: 30%/30% vs. 40%/40% until July 20 th
The Dalles	40%/40%
Bonneville	85 Kcfs/121 Kcfs and 95 Kcfs/95 Kcfs

New in 2014 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. One fish was observed with minor (Rank 1) signs of GBT at Rock Island Dam on 7/15. The action criteria 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 for the 2014 out-migration season was terminated at the Imnaha River Trap (IMN) after the July 15th sample.

Passage of spring migrants (e.g., yearling Chinook, steelhead, coho, and sockeye) was low all of the SMP sites this week. Subyearling Chinook dominated the collections at all the SMP dam sites this week. When compared to last week, subyearling Chinook passage decreased at the Snake River and Lower Columbia River dam sites. At the Upper Columbia site (RIS), subyearling Chinook passage this week was similar to last week.

Subyearling Chinook passage at Bonneville Dam (BON) decreased this week, when compared to the previous week. The daily average passage index for subyearling Chinook at BON this week was about 75,700 per day. Last week's daily average passage index was about 115,700 per day. Pacific lamprey macrophthalmia were encountered in only two of this week's samples at BON. On the morning of July 17th, temperatures in the BON sample tank exceeded 70°F, which triggered the high temperature sampling protocol. Under the high temperature sampling protocol, SMP sampling at BON is modified from a 24-hour sample every-day to a 24-hour sample every-other-day. Therefore, Friday, July 18th will be the first non-sample day at BON for 2014. This high temperature protocol will remain in place until the daily average temperature in the forebay falls below 69.5°F.

Subyearling Chinook passage at John Day Dam (JDA) decreased this week. This week's daily average passage index for subyearling Chinook was about 64,300 per day. Last week's daily average passage index for subyearling Chinook was about 104,300 per day. No pacific lamprey ammocoetes were encountered in this

week's samples but pacific lamprey macrophthalmia were present in four of this week's samples. The daily average collection for pacific lamprey macrophthalmia this week was about 130 per day, which is a decrease from last week's daily average collection of about 270 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Subyearling Chinook passage decreased this week when compared to the previous week. The daily average passage index for subyearling Chinook at MCN this week was about 191,000 per day. Last week's daily average passage index for subyearling Chinook was about 314,000. Pacific lamprey macrophthalmia were encountered nearly every day this week. The daily average collection for pacific lamprey macrophthalmia this week was about 1,400 per day, which is a decrease from last week's daily average collection of about 2,150 per day. Increases in sample mortality, coupled with high temperatures in the gatewells and juvenile fish facility triggered the implementation of the Warm Water Operations protocol this week, as specified in the 2014 Fish Passage Plan. Under this protocol, turbine units were shut down in a staggered priority, stopping every-other-unit starting with unit 2 and ascending as necessary to avoid temperature shocks within the juvenile collection channel.

This week's daily average passage index for subyearling Chinook at Lower Granite Dam (LGR) was about 3,900 per day, which is a decrease from last week's daily average passage index of about 5,400 per day. Only two pacific lamprey ammocoetes were sampled this week, both on July 11th. No macrophthalmia was sampled at LGR this week.

Passage of subyearling Chinook decreased at Little Goose (LGS) and Lower Monumental (LMN) dams this week, when compared to the previous week. This week's daily average passage index for subyearling Chinook at LGS was about 5,650 per day while that at LMN was about 2,150 per day. Last week's daily average passage indices for subyearling Chinook at these sites were nearly 6,200 per day at LGS and 2,300 at LMN. No pacific lamprey ammocoetes were encountered at LGS this week but pacific macrophthalmia were encountered at LGS on July 15th and LMN on July 14th.

Passage of subyearling Chinook at Rock Island Dam (RIS) this week remained similar to last week. This week's daily average passage index for subyearling Chinook was about 490 per day whereas that for last week was about 510 per day. So far this year, only pacific lamprey macrophthalmia have been collected at RIS. Six pacific lamprey macrophthalmia was encountered this week, three on July 11th, two on July 12th, and one on July 16th.

The Imnaha River Trap (IMN) is located at river kilometer seven and is operated by the Nez Perce Tribe. Due to the remote nature of the trap, the Nez Perce Tribe is only able to send collection data to the FPC periodically. Summer trapping operations began on June 22nd, which means that the Imnaha Trap is only operated on weekdays. To date, the FPC has received data through July 15th. Collections over the last 7 days of sampling have been relatively low, with yearling Chinook dominating the collections. The daily average collection for yearling Chinook during this period was about 9 per day. Steelhead collections during this period averaged two per day. Sampling for the 2014 out-migration season was terminated at the Imnaha River Trap (IMN) after the July 15th sample.

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. In addition, no new releases are scheduled for this zone over the next two weeks.

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

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There were no new releases scheduled for this zone this week. Approximately 2.1 million subyearling fall Chinook brights are scheduled to be released from Willard NFH into the Little White Salmon River later this month. This release was originally expected to occur at the

beginning of this month but has been delayed in order to allow time for the fish to get up to the desired release size. At this time, the exact release date is not known but is expected to be sometime between July 21st and July 31st. Marking information for these fish is also unknown at this time. There are no other releases scheduled for this zone over the next two weeks.

Adult Passage

Daily adult summer Chinook passage numbers at Bonneville Dam ranged between 881 and 1,469 in the last week. The 2014 summer Chinook count of 100,036 is about 1.2 times greater than the 2013 count and about 1.3 times greater than the 10-year average. The 2014 Bonneville Dam summer Chinook jack count of 21,893 is 84.7% of the 2013 count, while being 1.3 times greater than the 10-year average count. At McNary Dam 76,249 adult summer Chinook have been counted. The 2014 adult summer Chinook count at McNary Dam is about 1.15 times greater than the 2013 count and is about 1.4 times greater than the 10-year average. The 2014 McNary Dam summer Chinook jack count of 13,451 has 392 more fish than the 2013 count and is about 1.4 times greater than the 10-year average count. The 2014 adult summer Chinook count at Lower Granite Dam in the Snake River of 12,208 is about 1.7 times greater than the 2013 count, while being 88.1% of the 10 year average count. The 2014 Lower Granite summer Chinook jack count of 5,972 is about 93% of the 2013 count, while having 714 more fish than the 10 year average count.

The 2014 Bonneville Dam adult steelhead count of 50,043 is about 2.3 times greater than the 2013 count of 21,837 and has 2,212 more fish than the 10-year average count of 47,831. The 2014 Bonneville Dam adult wild steelhead count of 24,724 is about 2.3 times greater than the 2013 count of 10,523 and about 1.2 times greater than the 10-year average count of 20,941. Daily adult steelhead counts at Lower Granite Dam ranged from 51 to 122 adults per day last week. This year's Lower Granite steelhead count of 8,920 has 983 more fish than the 2013 count of 7,937, while being about 86.5% of the 10-year average count of 10,314. The 2014 Lower Granite Dam adult wild steelhead count of 4,114 has 711 more fish than the 2013 count of

3,403 and has 489 more fish than the 10-year average count of 3,625. At Willamette Falls, the 2014 count for steelhead was 24,117 as of July 13th. This year's steelhead count is about 1.4 times greater than the 2013 count of 16,626 and has 362 more fish than the 10-year average count of 23,755.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 4,528 and 9,638 last week. The 2014 adult sockeye count at Bonneville Dam of 595,800 is about 3.3 times greater than the 2013 count and about 3.1 times greater than the 10-year average count. The 2014 McNary Dam adult sockeye count of 513,768 is about 4.1 times greater than the 2013 count of 125,122 and about 3.9 times greater than the 10 year average count of 131,530. The Lower Granite Dam 2014 adult sockeye count of 1,470 has 937 more fish the 2013 count of 533 and 964 more fish than the 10 year average of 506. As of July 17th at Bonneville Dam, the adult shad count was 2,598,192. This year's shad count is about 69.4% of the 2013 count of 3,739,388 and 93.8% of the 10 year average count of 2,769,127.

Wanapum Dam Update

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

The drawdown of Wanapum pool had caused the adult fishways at Wanapum Dam to not be operational. The adult fishways exits had been approximately 10 feet above the forebay water level. Grant County has designed adult fishway retrofits that involve the use of weir boxes and chutes to deliver adult fish into the forebay of Wanapum Dam. On April 15, 2014, the weir and chute retrofit was operational at the left bank fishway. A weir and chute has also been installed at the right bank fishway at Wanapum and was operational on

April 26, 2014. Grant County PUD installed a spiral flume on the left bank fishway that reduces the elevation of the chute outflow from approximately 10 feet down to several feet. At the time of installing the spiral flume at the left bank fishway exit, Grant County also installed a ramp structure leading up to the weir and barriers to prevent jumping outside the structure. Grant PUD has also completed the installation of the spiral flume at the right bank fishway.

Visual observations of the exit retrofits have been promising. During Wanapum Dam site visits on May 7, May 21, June 4, June 18, and July 2, 2014, many fish have been seen passing the left bank fishway weir and chute. On July 2nd, 2014, over a several hour period, the left bank weir successfully passed well over a thousand fish (predominantly sockeye and Chinook). On July 2nd, 2014, a very large majority of the fish passed via left bank ladder; only two sockeye were seen passing the right bank ladder weir

As of July 14th, 2014 a total of 487,550 Sockeye and 58,738 adult summer Chinook had passed Priest Rapids Dam. As of the same date, 375,183 sockeye and 53,574 summer Chinook had passed Rock Island dam. Although, the difference in sockeye between the two projects is greater than 110,000, recent daily totals at Rock Island have been 26,000-34,000 sockeye per day.

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.

Hatchery Releases Next Two Weeks

Hatchery Release Summary

From: 7/4/2014 to 07/17/14

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Dworshak NFH	CHO	SP	2015	300,000	07-01-14	07-05-14	Selway River	Clearwater River M F
Nez Perce Tribe					300,000				
Total									
Grand Total					300,000				

Hatchery Release Summary

From: 7/18/2014 to 7/31/2014

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
U.S. Fish and Wildlife Service	Willard Hatchery	CHO	FA	2014	2,145,000	07-21-14	07-31-14	Willard Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service					2,145,000				
Total									
Grand Total					2,145,000				

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
07/04/2014	154.4	0.2	159.4	24.0	168.4	12.7	169.3	19.8	179.1	32.3	177.7	51.7	192.9	71.2
07/05/2014	155.6	0.1	154.2	0.0	157.8	10.3	149.4	15.2	158.9	30.8	151.9	31.1	159.2	31.9
07/06/2014	158.7	0.1	157.9	0.0	173.5	14.6	167.9	16.8	176.6	30.7	171.6	42.1	188.6	61.8
07/07/2014	153.7	0.1	152.5	0.0	173.4	14.1	172.2	18.2	180.1	34.3	179.1	49.8	185.3	64.5
07/08/2014	149.5	0.1	148.2	0.0	151.3	10.0	147.2	14.9	158.5	34.8	154.3	19.9	166.2	29.5
07/09/2014	150.8	0.1	150.0	0.0	155.0	10.0	148.3	15.1	156.3	33.9	149.7	20.6	157.2	29.6
07/10/2014	152.2	0.2	150.1	0.0	158.2	10.0	154.3	14.7	162.5	33.0	159.0	26.6	170.0	34.4
07/11/2014	152.0	0.1	159.8	0.0	158.6	10.0	151.6	14.8	157.4	31.9	154.4	21.3	164.3	30.4
07/12/2014	146.3	0.1	138.9	3.3	155.2	16.5	156.2	18.2	163.6	30.8	161.2	25.4	176.4	38.3
07/13/2014	130.5	0.1	135.1	5.4	142.1	10.0	135.3	13.8	143.5	30.8	143.1	20.6	155.9	27.4
07/14/2014	147.4	0.2	150.6	0.0	144.0	10.2	138.8	14.8	146.4	31.8	138.9	20.7	140.6	28.7
07/15/2014	150.6	0.1	153.5	0.0	157.7	13.1	158.8	18.7	165.8	31.6	158.4	26.0	168.8	39.7
07/16/2014	143.0	0.1	141.9	0.0	151.0	12.2	151.9	19.2	162.3	30.5	156.5	20.9	170.9	37.3
07/17/2014	138.0	0.1	138.5	0.0	142.4	10.0	138.6	14.4	144.5	29.4	142.6	20.1	151.4	29.5

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
07/04/2014	7.4	0.0	13.8	14.9	62.7	18.6	60.4	18.1	61.4	17.0	64.1	19.2
07/05/2014	7.4	0.0	13.9	16.2	58.4	18.6	57.9	17.3	58.1	16.9	60.1	41.2
07/06/2014	7.5	0.0	13.7	16.3	58.1	18.6	56.6	16.9	55.9	17.0	59.3	44.2
07/07/2014	11.8	2.3	13.4	15.7	59.6	18.6	58.2	17.5	58.7	16.6	60.2	26.8
07/08/2014	11.9	2.4	13.0	16.4	56.6	18.5	56.7	16.9	56.4	17.0	57.8	18.7
07/09/2014	12.2	2.7	---	13.9	56.1	18.5	53.6	16.0	54.0	17.0	56.6	39.6
07/10/2014	12.9	3.3	---	14.6	52.9	18.5	49.9	14.9	51.2	16.9	54.3	44.4
07/11/2014	13.1	3.5	---	14.6	52.7	18.6	50.6	15.1	52.2	16.7	53.5	21.2
07/12/2014	13.6	4.0	---	14.8	50.8	18.5	49.9	14.9	49.4	17.0	48.6	14.6
07/13/2014	13.7	4.1	---	14.1	48.7	18.4	48.4	14.5	48.2	16.8	51.9	36.2
07/14/2014	12.8	3.2	---	14.0	44.7	18.4	41.9	12.5	42.3	16.6	45.4	35.6
07/15/2014	11.8	2.2	---	12.9	43.4	18.5	44.6	13.3	42.9	16.4	44.6	34.6
07/16/2014	11.8	2.2	---	13.2	41.5	18.5	40.6	12.1	41.3	17.0	42.8	32.9
07/17/2014	12.5	2.8	---	11.5	41.7	18.5	39.6	11.8	39.2	16.7	41.3	31.4

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
07/04/2014	274.2	137.3	268.9	107.4	255.5	102.2	273.8	90.0	65.0	106.4
07/05/2014	254.6	127.7	256.6	98.7	245.7	97.6	259.9	95.1	49.4	102.9
07/06/2014	238.0	119.2	222.5	66.9	200.8	80.3	224.6	99.4	23.1	89.7
07/07/2014	244.9	122.7	244.6	77.4	226.8	90.6	238.4	95.8	32.5	97.7
07/08/2014	245.8	123.3	241.4	96.2	224.1	89.9	247.2	90.3	44.3	100.2
07/09/2014	234.9	117.8	223.3	85.7	210.0	83.9	229.8	95.1	29.4	92.9
07/10/2014	223.6	112.0	222.0	66.7	206.4	82.3	219.7	100.4	28.5	78.3
07/11/2014	228.9	114.6	213.3	67.9	194.6	77.6	216.2	95.5	22.0	86.3
07/12/2014	238.4	119.3	245.4	98.2	236.0	94.6	236.6	90.4	33.5	100.3
07/13/2014	213.6	107.0	194.0	74.7	182.4	72.6	222.8	95.1	22.1	93.2
07/14/2014	220.5	110.2	210.4	63.1	190.5	76.4	206.9	100.5	11.1	82.8
07/15/2014	195.6	97.7	193.4	61.8	179.2	71.5	191.5	96.2	6.1	76.7
07/16/2014	217.8	109.0	207.8	82.5	192.2	76.5	209.4	90.2	16.6	90.2
07/17/2014	204.0	102.2	191.4	73.0	173.6	69.5	191.6	94.9	0.1	84.1

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
Lower Granite Dam											
Little Goose Dam											
	07/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/14/14	Chinook + Steelhead	66	0	0	0.00%	0.00%	0	0	0	0
Lower Monumental Dam											
	07/09/14	Chinook + Steelhead	63	0	0	0.00%	0.00%	0	0	0	0
	07/16/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
McNary Dam											
	07/07/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/11/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/13/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/17/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Bonneville Dam											
	07/05/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/08/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/12/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	07/15/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
Rock Island Dam											
	07/08/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/10/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/15/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	07/17/14	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

Date	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	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
7/4	106.8	107.0	107.4	24	---	---	---	0	116.7	116.8	117.0	24	113.1	113.5	114.0	24	114.3	114.5	114.8	24
7/5	106.5	106.6	106.8	24	---	---	---	0	116.6	116.7	116.8	24	112.7	113.1	113.5	24	113.8	114.0	114.1	24
7/6	106.2	106.4	106.6	24	---	---	---	0	116.4	116.5	116.8	24	112.6	113.1	113.5	24	113.9	114.1	114.4	24
7/7	106.5	106.7	106.9	24	---	---	---	0	116.3	116.5	116.8	24	112.4	113.0	113.6	24	113.8	114.1	114.3	24
7/8	107.0	107.4	107.6	24	---	---	---	0	116.7	117.0	117.1	24	113.1	113.8	114.4	24	114.4	114.8	115.2	24
7/9	107.7	108.0	108.3	24	---	---	---	0	117.1	117.4	117.6	24	113.7	114.3	115.1	24	115.0	115.4	115.7	24
7/10	108.0	108.4	108.8	24	---	---	---	0	117.2	117.4	117.6	24	113.8	114.3	114.8	24	114.8	115.0	115.3	24
7/11	107.7	107.8	108.1	24	---	---	---	0	116.6	116.7	117.0	24	113.6	113.8	114.2	24	114.4	114.5	114.6	24
7/12	107.5	107.8	108.0	24	---	---	---	0	115.7	115.9	116.2	24	113.5	113.9	114.3	24	114.5	114.8	115.0	24
7/13	107.4	107.9	108.2	24	---	---	---	0	115.6	115.8	115.9	24	112.9	113.7	114.2	24	114.8	115.3	115.9	24
7/14	108.0	108.4	108.9	24	---	---	---	0	116.0	116.3	116.5	24	113.5	114.0	114.4	24	114.7	114.9	115.2	24
7/15	108.0	108.2	108.5	24	---	---	---	0	116.3	116.6	116.8	24	113.9	114.6	115.0	24	115.0	115.4	115.5	24
7/16	108.1	108.6	108.8	24	---	---	---	0	116.8	117.2	117.6	24	114.5	115.0	115.5	24	115.0	115.4	115.7	24
7/17	108.9	109.3	109.8	23	---	---	---	0	117.1	117.3	117.6	23	114.3	114.8	115.3	23	115.5	115.7	116.0	23

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	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	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
7/4	112.0	113.0	114.7	24	113.5	113.7	113.9	22	114.8	115.3	116.6	22	115.6	115.8	116.1	24	118.2	118.5	118.7	24
7/5	113.1	113.3	113.6	24	112.8	113.1	113.4	20	113.9	114.1	114.5	20	113.9	114.2	114.9	24	116.5	117.3	117.7	24
7/6	112.9	113.1	113.3	24	113.2	113.2	113.6	12	115.0	115.0	116.1	12	112.8	113.0	113.2	24	116.3	116.5	116.6	24
7/7	112.8	113.1	113.6	24	---	---	---	0	---	---	---	0	113.3	114.0	114.2	24	116.9	117.4	117.7	24
7/8	113.6	114.2	114.5	24	114.5	114.5	114.9	9	115.4	115.4	116.1	9	114.6	115.5	115.8	24	116.5	117.6	118.3	24
7/9	114.2	114.7	115.1	24	114.6	114.8	115.1	17	115.3	115.6	116.5	17	114.8	115.2	115.4	24	116.5	117.6	117.8	24
7/10	114.2	114.9	115.4	24	114.4	114.4	114.9	11	115.3	115.3	116.4	11	114.1	114.5	114.8	24	116.2	117.0	117.4	24
7/11	113.5	113.8	114.1	24	114.4	114.5	114.8	16	115.3	115.5	116.4	16	113.7	114.3	114.6	24	115.8	116.9	117.6	24
7/12	112.7	113.5	114.2	24	114.1	114.2	114.5	18	115.7	116.3	118.2	18	113.8	114.2	114.4	24	116.8	117.4	117.8	24
7/13	112.8	113.8	114.0	24	114.5	114.6	115.6	14	115.2	115.4	116.7	14	114.5	115.4	115.8	24	116.3	117.8	120.7	24
7/14	113.2	114.1	114.6	24	114.3	114.6	115.1	20	115.2	115.6	116.3	20	114.5	114.8	115.4	24	116.7	117.5	119.6	24
7/15	114.3	114.6	114.8	24	114.2	114.6	115.6	18	115.8	116.3	117.0	18	114.2	114.8	115.1	24	117.7	118.1	118.6	24
7/16	114.2	114.5	115.3	24	115.5	115.8	116.2	19	116.8	117.3	117.8	19	115.1	115.7	116.1	24	118.5	118.9	119.6	24
7/17	115.1	115.4	115.8	23	115.0	115.4	115.6	19	116.0	116.5	117.2	19	115.2	115.4	115.6	23	117.1	118.0	118.8	23

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	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	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
7/4	114.8	115.8	116.4	24	115.9	116.6	118.1	24	115.1	116.5	117.0	24	117.5	119.8	123.2	24	116.2	118.2	121.6	24
7/5	113.4	114.0	114.5	24	113.0	114.9	115.4	23	113.6	114.4	114.8	24	113.2	114.0	116.5	24	112.5	113.1	114.3	24
7/6	112.8	113.4	113.8	24	114.2	114.6	114.9	24	113.1	113.5	113.7	24	115.1	117.2	119.1	24	113.6	115.7	117.6	24
7/7	113.4	114.9	115.7	24	114.5	115.5	116.0	24	112.9	113.5	113.8	24	115.3	116.4	118.1	24	113.3	115.8	117.3	24
7/8	114.1	115.5	116.7	24	114.0	116.0	116.9	24	114.2	115.1	115.8	24	113.6	114.5	115.1	24	113.3	113.9	116.9	24
7/9	113.9	114.7	115.2	24	113.5	115.2	115.7	24	113.0	114.0	114.9	24	112.8	113.8	114.6	24	111.2	111.8	112.5	24
7/10	113.5	114.3	114.9	24	114.6	115.1	115.6	24	---	---	---	0	---	---	---	0	---	---	---	0
7/11	113.4	114.2	114.8	24	114.4	115.0	115.5	24	---	---	---	0	---	---	---	0	---	---	---	0
7/12	113.7	114.5	114.9	24	114.8	115.3	115.5	24	---	---	---	0	---	---	---	0	---	---	---	0
7/13	113.8	114.7	115.7	24	111.0	114.6	115.3	24	---	---	---	0	---	---	---	0	---	---	---	0
7/14	114.3	114.7	115.4	24	112.4	115.2	115.7	24	---	---	---	0	---	---	---	0	---	---	---	0
7/15	114.3	115.1	115.5	24	116.1	117.7	118.1	24	---	---	---	0	---	---	---	0	---	---	---	0
7/16	114.8	115.9	116.5	24	116.7	118.4	119.1	23	---	---	---	0	---	---	---	0	---	---	---	0
7/17	113.9	114.4	115.3	23	115.4	116.7	117.6	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst				Pasco				Dworshak				Clwrtr-Peck				Anatone			
	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/4	117.4	118.3	118.6	24	---	---	---	0	100.6	100.9	101.1	24	101.8	102.3	102.6	24	102.7	103.5	104.2	24
7/5	113.8	114.1	114.8	24	---	---	---	0	100.4	100.7	101.0	24	101.8	102.5	103.1	24	102.8	103.8	104.6	24
7/6	116.2	117.1	118.2	24	---	---	---	0	100.4	100.9	101.3	24	102.1	103.0	103.7	24	103.0	104.1	105.1	24
7/7	115.8	116.5	116.9	24	---	---	---	0	104.8	105.3	105.5	24	104.0	104.9	105.5	24	103.1	104.2	105.2	24
7/8	114.4	114.9	116.0	24	---	---	---	0	105.5	105.8	106.0	24	104.5	105.3	105.9	24	103.1	104.3	105.2	24
7/9	113.4	113.7	114.0	24	---	---	---	0	106.5	107.7	108.9	24	104.9	105.9	107.2	24	102.8	103.8	104.7	24
7/10	---	---	---	0	---	---	---	0	108.5	109.0	109.5	24	106.2	107.1	107.8	24	102.7	103.8	104.8	22
7/11	---	---	---	0	---	---	---	0	108.7	109.2	110.0	24	106.4	107.3	108.2	24	102.4	103.6	104.7	24
7/12	---	---	---	0	---	---	---	0	109.0	109.4	109.8	24	106.9	107.7	108.3	24	102.5	103.7	104.7	24
7/13	---	---	---	0	---	---	---	0	109.1	109.5	110.1	24	107.2	107.8	108.6	24	102.6	103.8	104.7	24
7/14	---	---	---	0	---	---	---	0	107.1	109.4	109.8	24	106.3	107.3	108.2	24	102.7	103.9	104.7	24
7/15	---	---	---	0	---	---	---	0	104.1	104.5	104.9	24	104.7	105.6	106.3	24	102.6	103.8	104.8	24
7/16	---	---	---	0	---	---	---	0	104.3	104.9	105.3	24	105.0	106.1	106.8	24	102.7	104.1	105.2	24
7/17	---	---	---	0	---	---	---	0	106.3	108.2	108.7	23	106.2	107.8	108.8	23	102.6	103.8	105.1	23

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clwrtr-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		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/4	102.0	103.3	104.1	24	103.1	103.3	103.7	24	113.9	114.2	114.5	24	112.7	112.8	112.9	24	112.4	112.6	112.8	24
7/5	102.3	103.9	105.1	24	102.0	102.3	103.0	24	114.4	114.7	114.9	24	112.1	112.3	112.6	24	111.8	112.3	112.7	24
7/6	102.7	104.4	105.7	24	101.4	101.7	101.9	24	114.2	114.8	115.3	24	112.4	112.7	112.9	24	111.8	112.0	112.4	24
7/7	103.4	105.5	106.9	24	101.0	101.3	101.7	24	113.9	114.3	114.8	24	113.4	114.1	114.5	24	112.1	112.5	113.0	24
7/8	104.1	106.0	107.2	24	102.3	102.9	103.2	24	114.2	114.5	114.7	24	115.5	116.3	116.7	24	113.0	113.3	113.7	24
7/9	104.0	105.6	106.8	24	102.7	102.9	103.2	24	114.4	114.6	114.8	24	115.6	115.8	116.7	24	113.2	113.7	113.9	24
7/10	104.8	106.8	108.1	24	102.6	102.9	103.4	24	114.9	115.1	115.2	24	115.0	115.1	115.5	24	113.9	114.4	114.7	24
7/11	104.9	106.9	108.4	24	103.5	103.8	104.1	24	115.1	115.5	115.9	24	115.3	115.5	115.8	24	113.9	114.3	114.9	24
7/12	105.1	107.2	108.7	24	102.5	102.8	103.0	24	114.7	114.9	115.2	24	113.9	114.2	114.7	24	113.3	113.6	113.9	24
7/13	105.6	107.8	109.2	24	102.3	102.8	103.1	24	114.9	115.2	115.5	24	113.2	113.5	113.9	24	112.9	113.3	113.8	24
7/14	105.0	106.8	108.3	24	102.9	103.2	103.6	24	115.1	115.3	115.5	24	113.5	113.9	114.4	24	113.3	113.8	114.2	24
7/15	104.6	106.9	108.4	24	103.0	103.6	103.9	24	115.5	115.6	115.8	24	114.3	114.6	115.4	24	113.6	113.9	114.2	24
7/16	104.7	107.0	108.7	24	103.3	103.7	104.1	24	115.5	115.6	116.0	24	114.4	114.5	114.8	24	113.5	113.8	114.0	24
7/17	104.7	106.8	108.1	23	104.0	104.6	104.9	23	116.1	116.4	116.6	23	113.9	114.1	114.4	23	113.6	114.1	114.4	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		12 h		#	24 h		12 h		#	24 h		12 h		#	24 h		12 h		#
	Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr		Avg	Avg	High	hr	
7/4	112.9	113.0	113.2	24	115.5	115.8	116.2	24	113.6	113.9	114.5	24	114.8	115.1	115.7	24	---	---	---	0
7/5	112.3	112.6	112.8	24	115.5	115.9	116.6	24	112.8	113.0	113.1	24	113.7	115.1	115.6	24	---	---	---	0
7/6	112.0	112.2	112.4	24	115.5	115.7	115.9	24	113.0	113.2	113.3	24	114.5	115.4	115.8	24	---	---	---	0
7/7	112.3	112.7	113.1	24	115.8	116.2	117.0	24	113.7	114.2	114.7	24	113.7	115.1	115.7	24	---	---	---	0
7/8	113.3	113.7	113.9	24	116.3	116.7	117.3	24	114.9	115.3	115.6	24	113.7	115.1	116.0	24	---	---	---	0
7/9	114.0	114.3	114.5	24	116.2	116.9	118.1	24	115.9	116.3	116.5	24	114.2	115.2	115.6	24	---	---	---	0
7/10	114.2	114.4	114.6	24	116.1	116.5	116.8	24	116.1	116.3	116.5	24	114.1	114.6	115.0	24	---	---	---	0
7/11	113.7	113.9	114.2	24	115.9	116.5	117.2	24	115.5	115.7	116.1	24	113.2	114.2	115.4	24	---	---	---	0
7/12	113.0	113.3	113.9	24	115.9	116.3	117.0	24	114.7	114.8	115.1	24	112.7	113.7	114.6	24	---	---	---	0
7/13	113.9	114.5	115.0	24	115.6	115.9	116.6	24	115.0	115.5	115.7	24	113.4	114.4	115.5	24	---	---	---	0
7/14	113.7	114.0	114.2	24	115.6	116.1	116.7	24	115.4	115.6	115.8	24	112.5	113.1	113.6	24	---	---	---	0
7/15	113.6	113.7	113.9	24	115.5	116.2	116.7	24	115.2	115.6	115.9	24	112.7	113.9	115.0	23	---	---	---	0
7/16	113.5	113.7	113.8	24	116.3	116.5	116.7	24	115.4	115.8	116.0	24	113.1	113.6	114.0	24	---	---	---	0
7/17	113.2	113.3	113.6	23	116.2	116.6	117.8	23	115.4	115.6	115.8	23	113.5	114.2	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

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>
7/4	112.7	113.2	113.9	24	118.3	118.6	118.9	24	111.2	111.6	111.9	24	115.8	117.1	117.4	24	110.3	111.4	112.2	24
7/5	112.3	112.8	113.2	24	117.8	118.3	118.5	24	110.2	110.4	110.8	24	114.7	116.5	117.2	24	111.9	112.5	113.5	24
7/6	112.8	113.3	113.7	24	117.5	118.5	119.0	24	109.1	109.4	109.7	24	112.7	113.3	114.6	24	111.9	112.9	113.3	24
7/7	113.9	114.5	115.6	24	117.6	118.1	118.7	24	109.0	109.8	110.4	24	112.9	113.9	115.6	24	110.7	111.5	112.1	24
7/8	114.1	115.3	116.5	24	117.4	117.8	118.2	24	111.0	111.8	112.3	24	114.4	115.8	116.5	24	111.9	112.6	113.0	24
7/9	115.4	116.1	116.9	24	117.3	117.4	118.3	24	111.9	112.7	113.0	24	114.0	115.4	116.7	24	111.0	111.6	112.7	24
7/10	114.8	115.5	116.2	24	116.9	117.6	118.8	24	112.3	113.0	113.8	24	113.7	114.1	114.8	24	110.5	111.1	112.2	24
7/11	112.3	112.9	114.0	24	116.5	116.8	117.5	24	112.4	112.9	113.3	24	113.5	114.3	116.3	24	112.0	112.3	112.6	24
7/12	111.5	112.1	112.7	24	116.7	117.3	118.3	24	112.2	112.6	112.9	24	114.7	116.5	117.5	24	112.5	113.5	114.2	24
7/13	110.6	110.9	112.0	24	116.1	116.4	117.0	24	111.8	112.1	112.5	24	112.3	113.7	114.9	24	113.3	113.9	114.1	24
7/14	110.8	111.0	111.7	24	116.2	116.6	117.7	24	111.2	111.5	111.9	24	112.6	113.1	113.4	24	110.9	111.1	111.4	24
7/15	111.7	111.8	111.9	24	115.8	116.6	116.9	24	111.1	111.9	112.3	24	112.7	113.1	113.9	24	111.0	111.8	112.6	24
7/16	112.7	113.1	113.3	24	117.0	117.6	117.9	24	112.3	112.7	113.0	24	115.3	117.4	118.0	24	112.3	112.5	112.6	24
7/17	112.6	113.1	113.5	23	116.7	117.0	117.4	23	110.0	110.6	111.7	23	115.0	115.4	115.7	23	109.7	110.7	112.0	23

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>CamasWashougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>High</u>	<u>#</u>	
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
7/4	116.6	117.5	118.1	24	110.7	111.3	112.0	24	112.8	113.3	113.5	24	---	---	---	0	116.5	117.3	119.4	24
7/5	117.1	117.9	118.4	24	112.0	112.9	113.8	24	114.6	115.2	116.6	24	---	---	---	0	116.8	117.8	119.4	24
7/6	117.2	117.7	118.2	24	114.1	114.3	114.6	24	116.7	117.1	117.8	24	---	---	---	0	117.6	118.0	119.2	24
7/7	116.8	117.3	117.7	24	114.6	115.2	115.5	24	116.5	117.2	117.8	24	---	---	---	0	117.6	117.8	118.1	24
7/8	117.3	118.0	118.6	24	114.4	114.8	115.2	24	115.7	116.0	116.3	24	---	---	---	0	116.5	117.3	119.2	24
7/9	116.6	116.9	117.4	24	111.5	112.0	112.8	24	114.9	115.7	116.7	24	---	---	---	0	116.3	117.4	119.1	24
7/10	116.1	116.9	117.3	24	109.9	110.3	110.7	24	114.8	115.4	115.8	24	---	---	---	0	117.4	117.9	118.8	24
7/11	116.8	117.1	117.4	24	110.6	111.4	111.9	24	114.6	115.5	116.1	24	---	---	---	0	117.1	117.4	117.6	24
7/12	117.5	118.0	118.7	24	112.7	113.3	113.7	24	115.0	115.7	116.3	24	---	---	---	0	115.9	116.8	119.3	24
7/13	117.3	117.8	119.0	24	113.4	113.7	113.9	24	115.6	116.1	117.0	24	---	---	---	0	116.1	117.2	119.3	24
7/14	116.2	116.6	117.3	24	111.5	112.2	112.7	24	115.8	116.4	116.9	24	---	---	---	0	117.2	117.6	118.3	24
7/15	116.2	117.2	117.9	24	110.4	111.2	111.6	24	115.4	116.2	116.7	24	---	---	---	0	116.8	117.1	117.4	24
7/16	117.3	117.9	118.4	24	111.7	112.1	112.4	24	115.1	115.5	115.7	24	---	---	---	0	115.9	116.6	119.1	24
7/17	115.6	116.1	116.4	23	109.3	109.9	110.9	23	114.2	114.6	115.4	23	---	---	---	0	115.6	116.4	118.8	23

Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 7/18/2014 12:04

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>

Date	COMBINED YEARLING CHINOOK											
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/04/2014	*	---	---	---	56	29	0	0	0	228	718	
07/05/2014	*	---	---	---	0	29	14	0	---	406	0	
07/06/2014	*	---	---	---	0	14	131	2	0	158	0	
07/07/2014	*	---	7	---	30	0	102	0	---	192	0	
07/08/2014	*	---	10	---	0	0	0	0	0	837	0	
07/09/2014	*	---	19	---	0	14	0	0	---	0	0	
07/10/2014	*	---	6	---	0	0	0	0	0	0	0	
07/11/2014	*	---	10	---	0	0	0	0	---	287	0	
07/12/2014	*	---	---	---	8	0	30	0	0	220	0	
07/13/2014	*	---	---	---	0	0	46	0	---	0	338	
07/14/2014	*	---	6	---	0	0	15	0	0	0	342	
07/15/2014	*	---	6	---	0	14	0	0	---	0	0	
07/16/2014	*	---	---	---	0	0	0	0	0	0	0	
07/17/2014	*	---	---	---	0	0	0	0	---	0	0	
07/18/2014	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	64	0	94	100	338	2	0	2,328	1,398	
# Days:		0	7	0	14	14	14	14	7	14	14	
Average:		0	9	0	7	7	24	0	0	166	100	
YTD		65,404	63,600	25,420	10,159	4,807,472	2,838,732	1,969,571	26,427	2,022,048	2,318,781	2,150,935

Date	COMBINED SUBYEARLING CHINOOK											
	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/04/2014	*	---	---	---	3,235	7,536	2,453	867	283,619	178,476	82,097	
07/05/2014	*	---	---	---	11,378	8,108	1,412	614	---	87,858	107,050	
07/06/2014	*	---	---	---	7,950	7,701	2,440	439	456,607	53,801	128,182	
07/07/2014	*	---	0	---	2,846	5,890	2,178	472	---	79,300	108,541	
07/08/2014	*	---	0	---	4,680	4,701	3,479	382	200,577	172,959	99,582	
07/09/2014	*	---	0	---	4,797	4,355	2,713	343	---	104,660	129,087	
07/10/2014	*	---	0	---	2,859	5,138	1,653	470	316,848	53,204	155,248	
07/11/2014	*	---	1	---	2,960	7,438	3,569	399	---	86,907	122,949	
07/12/2014	*	---	---	---	3,294	5,088	1,289	417	275,177	97,234	99,124	
07/13/2014	*	---	---	---	5,833	4,538	2,076	302	---	62,737	97,560	
07/14/2014	*	---	0	---	4,436	5,562	2,971	565	165,300	36,765	66,374	
07/15/2014	*	---	0	---	4,567	4,896	1,513	560	---	80,872	46,458	
07/16/2014	*	---	---	---	3,552	5,348	2,072	585	132,769	59,214	36,765	
07/17/2014	*	---	---	---	2,498	6,625	1,582	595	---	26,675	60,444	
07/18/2014	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	1	0	64,885	82,924	31,400	7,010	1,830,897	1,180,662	1,339,461	
# Days:		0	7	0	14	14	14	14	7	14	14	
Average:		0	0	0	4,635	5,923	2,243	501	261,557	84,333	95,676	
YTD		0	27	4	332	861,290	954,607	345,610	25,012	4,120,407	2,263,544	3,823,345

Two-Week Summary of Passage Indices

COMBINED COHO												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
07/04/2014	*	---	---	---	0	0	0	7	0	0	0	
07/05/2014	*	---	---	---	0	0	0	6	---	0	0	
07/06/2014	*	---	---	---	0	0	0	2	0	0	363	
07/07/2014	*	---	0	---	0	0	0	2	---	0	0	
07/08/2014	*	---	0	---	0	0	0	2	0	0	0	
07/09/2014	*	---	0	---	0	0	0	2	---	0	0	
07/10/2014	*	---	0	---	0	0	0	0	0	0	0	
07/11/2014	*	---	0	---	0	0	0	2	---	0	0	
07/12/2014	*	---	---	---	0	0	0	2	0	0	0	
07/13/2014	*	---	---	---	0	0	0	5	---	0	0	
07/14/2014	*	---	0	---	0	0	0	0	0	0	0	
07/15/2014	*	---	0	---	0	0	0	2	---	0	0	
07/16/2014	*	---	---	---	0	0	0	2	0	0	0	
07/17/2014	*	---	---	---	0	0	0	0	---	0	0	
07/18/2014	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	0	0	0	0	0	34	0	0	363	
# Days:		0	7	0	0	14	14	14	7	14	14	
Average:		0	0	0	0	0	0	2	0	0	26	
YTD		0	0	0	267	74,168	59,431	27,316	66,423	147,455	225,116	776,537

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)	
07/04/2014	*	---	---	---	84	401	40	2	0	0	0	
07/05/2014	*	---	---	---	188	258	43	4	---	0	0	
07/06/2014	*	---	---	---	59	201	29	2	409	0	0	
07/07/2014	*	---	7	---	0	14	0	7	---	0	0	
07/08/2014	*	---	1	---	59	44	97	2	409	0	0	
07/09/2014	*	---	1	---	74	57	32	4	---	0	708	
07/10/2014	*	---	3	---	45	57	44	11	0	157	360	
07/11/2014	*	---	0	---	46	129	47	2	---	0	0	
07/12/2014	*	---	---	---	16	29	30	4	409	0	0	
07/13/2014	*	---	---	---	0	0	15	2	---	0	0	
07/14/2014	*	---	0	---	32	57	0	5	0	0	0	
07/15/2014	*	---	1	---	18	79	0	8	---	0	332	
07/16/2014	*	---	---	---	0	14	0	5	0	0	232	
07/17/2014	*	---	---	---	0	29	0	3	---	0	0	
07/18/2014	*	---	---	---	---	---	---	---	---	---	---	
Total:		0	13	0	621	1,369	377	61	1,227	157	1,632	
# Days:		0	7	0	14	14	14	14	7	14	14	
Average:		0	2	0	44	98	27	4	175	11	117	
YTD		2,080	43,465	4,243	12,842	3,376,116	1,975,505	1,183,161	27,417	586,475	1,032,890	459,444

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
07/04/2014	*	---	---	---	0	29	0	2	0	76	0
07/05/2014	*	---	---	---	87	14	14	4	---	0	0
07/06/2014	*	---	---	---	30	29	0	3	412	158	388
07/07/2014	*	---	0	---	30	0	0	2	---	0	330
07/08/2014	*	---	0	---	15	43	14	4	409	0	0
07/09/2014	*	---	0	---	30	14	0	5	---	0	25
07/10/2014	*	---	0	---	0	29	15	0	410	0	0
07/11/2014	*	---	0	---	0	0	93	2	---	0	0
07/12/2014	*	---	---	---	0	0	0	2	0	0	0
07/13/2014	*	---	---	---	32	0	0	9	---	239	338
07/14/2014	*	---	0	---	16	0	15	0	0	0	0
07/15/2014	*	---	0	---	0	14	0	2	---	0	0
07/16/2014	*	---	---	---	0	0	0	2	0	0	0
07/17/2014	*	---	---	---	0	14	0	0	---	0	232
07/18/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	240	186	151	37	1,231	473	1,313
# Days:		0	7	0	14	14	14	14	7	14	14
Average:		0	0	0	17	13	11	3	176	34	94
YTD		0	0	2	181,918	88,303	69,781	37,878	1,495,357	577,361	589,879

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)
07/04/2014	*	---	---	---	1	0	0	0	1,200	400	0
07/05/2014	*	---	---	---	1	40	10	1	---	300	286
07/06/2014	*	---	---	---	2	0	10	0	600	400	0
07/07/2014	*	---	0	---	0	40	0	0	---	133	143
07/08/2014	*	---	0	---	0	0	0	2	6,800	400	0
07/09/2014	*	---	0	---	0	10	0	0	---	143	10
07/10/2014	*	---	0	---	3	10	10	0	0	100	0
07/11/2014	*	---	0	---	2	10	0	3	---	0	0
07/12/2014	*	---	---	---	0	0	0	2	800	143	0
07/13/2014	*	---	---	---	0	0	0	0	---	143	0
07/14/2014	*	---	0	---	0	0	10	0	2,000	0	0
07/15/2014	*	---	0	---	0	10	0	0	---	200	286
07/16/2014	*	---	---	---	0	0	0	1	1,400	0	0
07/17/2014	*	---	---	---	0	10	0	0	---	400	100
07/18/2014	*	---	---	---	---	---	---	---	---	---	---
Total:		0	0	0	9	130	40	9	12,800	2,762	825
# Days:		0	7	0	14	14	14	14	7	14	14
Average:		0	0	0	1	9	3	1	1,829	197	59
YTD		1	3	0	121	19,853	29,452	46	57,055	95,652	18,069

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:

7/18/14 11:58 AM

		07/04/14 TO 07/18/14				
		Species				
Site	Data	CH0	CH1	ST	SO	Grand Total
LGR	Sum of NumberCollected	42,145	65	420	160	42,790
	Sum of NumberBarged	41,853	63	412	156	42,484
	Sum of NumberBypassed	22	0	0	0	22
	Sum of Numbertrucked	0	0	0	0	0
	Sum of SampleMorts	62	1	3	1	67
	Sum of FacilityMorts	200	1	5	3	209
	Sum of ResearchMorts	8	0	0	0	8
	Sum of TotalProjectMorts	270	2	8	4	284
LGS	Sum of NumberCollected	57,858	70	956	130	59,014
	Sum of NumberBarged	57,704	70	954	127	58,855
	Sum of NumberBypassed	16	0	0	0	16
	Sum of Numbertrucked	0	0	0	0	0
	Sum of SampleMorts	25	0	0	1	26
	Sum of FacilityMorts	113	0	2	2	117
	Sum of ResearchMorts	0	0	0	0	0
	Sum of TotalProjectMorts	138	0	2	3	143
LMN	Sum of NumberCollected	20,881	230	262	100	21,473
	Sum of NumberBarged	20,632	230	258	98	21,218
	Sum of NumberBypassed	161	0	2	0	163
	Sum of Numbertrucked	0	0	0	0	0
	Sum of SampleMorts	10	0	0	0	10
	Sum of FacilityMorts	78	0	2	2	82
	Sum of ResearchMorts	0	0	0	0	0
	Sum of TotalProjectMorts	88	0	2	2	92
Total Sum of NumberCollected		120,884	365	1,638	390	123,277
Total Sum of NumberBarged		120,189	363	1,624	381	122,557
Total Sum of NumberBypassed		199	0	2	0	201
Total Sum of Numbertrucked		0	0	0	0	0
Total Sum of SampleMorts		97	1	3	2	103
Total Sum of FacilityMorts		391	1	9	7	408
Total Sum of ResearchMorts		8	0	0	0	8
Total Sum of TotalProjectMorts		496	2	12	9	519

YTD Transportation Summary

Source: Fish Passage Center

Updated:

7/18/14 11:58 AM

TO: 07/18/14

Site	Data	Species					Grand Total
		CH0	CH1	CO	SO	ST	
LGR	Sum of NumberCollected	605,650	3,442,337	52,722	130,910	2,404,204	6,635,823
	Sum of NumberBarged	592,282	1,939,440	48,991	70,813	1,326,834	3,978,360
	Sum of NumberBypassed	11,722	1,501,375	3,722	59,638	1,077,085	2,653,542
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	226	138	1	45	60	470
	Sum of FacilityMorts	1,410	1,305	8	414	118	3,255
	Sum of ResearchMorts	10	79	0	0	107	196
	Sum of TotalProjectMorts	1,646	1,522	9	459	285	3,921
LGS	Sum of NumberCollected	675,785	1,951,715	41,832	61,142	1,369,549	4,100,023
	Sum of NumberBarged	674,437	1,768,373	40,932	54,792	1,149,394	3,687,928
	Sum of NumberBypassed	322	182,657	890	6,109	220,102	410,080
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	61	34	1	15	16	127
	Sum of FacilityMorts	965	651	9	226	167	2,018
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1,026	685	10	241	183	2,145
LMN	Sum of NumberCollected	240,047	1,326,193	19,905	48,363	792,123	2,426,631
	Sum of NumberBarged	237,871	1,138,551	17,505	45,099	686,164	2,125,190
	Sum of NumberBypassed	463	177,066	0	2,568	89,955	270,052
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	18	25	0	1	17	61
	Sum of FacilityMorts	295	963	0	301	191	1,750
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	313	988	0	302	208	1,811
Total Sum of NumberCollected		1,521,482	6,720,245	114,459	240,415	4,565,876	13,162,477
Total Sum of NumberBarged		1,504,590	4,846,364	107,428	170,704	3,162,392	9,791,478
Total Sum of NumberBypassed		12,507	1,861,098	4,612	68,315	1,387,142	3,333,674
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		305	197	2	61	93	658
Total Sum of FacilityMorts		2,670	2,919	17	941	476	7,023
Total Sum of ResearchMorts		10	79	0	0	107	196
Total Sum of TotalProjectMorts		2,985	3,195	19	1,002	676	7,877

Cumulative Adult Passage at Mainstem Dams Through: 07/17

DAM	ENDDATE	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	07/17	188083	26094	83345	33820	130283	22257	100036	21893	84208	24411	78325	17138	0	0	0	0	0	0
TDA	07/17	143142	21080	69202	32311	99813	18973	86406	16037	76443	19008	65612	13139	0	0	0	0	0	0
JDA	07/17	123224	19103	56991	28957	87036	17743	76797	14493	66601	17924	58076	13354	0	0	0	0	0	0
MCN	07/17	107147	16033	52176	22279	79413	14950	76249	13451	66490	13059	52933	9578	0	0	0	0	0	0
IHR	07/17	79298	12428	38017	18611	54814	9602	15516	4071	10472	6039	15573	4174	0	0	0	0	0	0
LMN	07/17	79942	14020	36470	19053	54458	8539	13554	7312	10171	7235	16896	4269	0	0	0	0	0	0
LGS	07/17	77966	13649	35072	19443	49920	9660	14106	6487	8343	6952	15534	4859	0	0	0	0	0	0
LGR	07/17	79167	13732	35031	19940	49728	11001	12208	5972	7028	6419	13853	5258	0	0	0	0	0	0
PRD	07/14	23742	2649	13725	1298	14700	1468	58738	2177	51904	1578	36798	1303	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	07/15	23247	2934	13345	3100	13890	2468	55454	1772	47403	1543	31885	2610	0	0	0	0	0	0
RRH	07/15	12376	2377	6841	2101	5576	1020	36919	1239	37170	1654	20326	1723	0	0	0	0	0	0
WEL	07/08	15376	2544	7133	2980	4880	1164	13258	539	15054	1209	6355	332	0	0	0	0	0	0
WFA	07/13	28574	1336	26728	1468	39363	1008	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	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.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	07/17	5	-2	0	0	0	0	595800	179659	190073	50043	21837	47831	24724	10523	20941	19835	13618	14662
TDA	07/17	0	0	0	0	0	0	563470	155283	156586	26789	9698	24037	14658	4683	11144	4130	3283	2653
JDA	07/17	0	1	0	0	0	0	532687	147613	157330	19817	7670	20982	9999	3369	8316	3413	2134	1739
MCN	07/17	0	0	1	0	1	0	513768	125122	131530	13018	5758	14486	6394	2131	4981	287	303	366
IHR	07/17	0	0	0	0	0	0	1953	827	453	7797	6782	9067	2717	2127	2534	67	61	37
LMN	07/17	0	0	0	0	0	0	2094	929	548	6532	4668	10827	2739	1916	3930	20	21	5
LGS	07/17	0	0	0	0	0	0	1859	836	488	3985	3005	8584	2088	1447	2878	12	10	4
LGR	07/17	0	0	0	0	0	0	1470	533	506	8920	7937	10314	4114	3403	3625	5	4	1
PRD	07/14	0	0	0	0	0	0	487550	123641	141781	1236	508	832	0	0	0	184	213	153
WAN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIS	07/15	0	0	0	0	0	0	408300	116131	129232	694	433	625	419	292	404	10	19	16
RRH	07/15	0	0	0	0	0	0	304554	86712	102251	404	322	709	233	240	468	2	6	0
WEL	07/08	0	0	0	0	0	0	101938	35635	33576	175	123	130	104	100	86	0	0	2
WFA	07/13	9	0	2	0	0	0	0	0	0	24117	16626	23755	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.