



# Fish Passage Center

## Weekly Report #14 - 6

April 25, 2014

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### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 52% and 94% of average at individual sub-basins over the first 23 days of April. Precipitation above The Dalles has been 80% of average over April. Over the 2014 water year, precipitation has ranged between 79% and 100% of average.

**Table 1.** Summary of April precipitation and cumulative October through April 23, 2014, precipitation with respect to average (1971–2000), at select locations within the Columbia and Snake River Basins.

Location	Water Year 2014 April 1–23, 2014		Water Year 2014 October 1, 2013 to April 23, 2014	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia above Coulee	1.76	88	22.6
Snake River above Ice Harbor	1.09	72	12.7	82
Columbia above The Dalles	1.29	80	15.9	84
Kootenai	1.69	83	24.1	97
Clark Fork	0.94	52	14.8	85
Flathead	1.73	78	23.4	100
Pend Oreille River Basin above Waneta Dam	1.36	68	19.4	90
Salmon River Basin	1.43	73	15.1	79
Upper Snake Tributaries	1.51	82	16.5	91
Clearwater	1.81	67	27.7	96
Willamette River above Portland	3.77	94	43.8	82

Snowpack within the Columbia Basin has been variable. Average snowpack in the Columbia River for basins above the Snake River confluence is 131% of average. For Snake River Basins the average

snowpack is 99% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 65% of average.

Table 2 displays the April 24<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs along with the April COE forecasts at Libby and Dworshak. The April 24<sup>th</sup> ESP forecast at The Dalles between January and July is 106,981 Kaf (106% of average).

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

Location	April 24, 2014, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Jan–July)	106	106981
Grand Coulee (Jan–July)	107	63826
Libby Res. Inflow, MT (Apr–Aug)	115	6772 6868*
Hungry Horse Res. Inflow, MT (Jan–July)	112	2351
Lower Granite Res. Inflow (Apr–July)	111	21974
Brownlee Res. Inflow (Apr–July)	65	3550
Dworshak Res. Inflow (Apr–July)	134	3233 3111*

\* Denotes COE April Forecast

Grand Coulee Reservoir is at 1237.2 feet (4-24-14) and has drafted 5.3 feet over the last week. The April 30<sup>th</sup> FC Elevation at Grand Coulee is 1235.2 feet. Outflows at Grand Coulee have ranged between 140.5 and 144.8 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2393.2 feet (4-24-14) and has drafted 5.9 feet over the previous week. The April 30<sup>th</sup> FC Elevation at Libby is 2387.0 feet. Daily average outflows at Libby Dam have been 25.0 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3499.0 feet (4-24-14) and has drafted 4.0 feet over the previous week. The April 30<sup>th</sup> FC Elevation at Hungry Horse is 3495.4 feet. Outflows at Hungry Horse have been 11.0 to 12.9 Kcfs over the last week.

Dworshak is currently at an elevation of 1488.1 feet (4-24-14) and has refilled 1.7 feet over the previous week. The COE has begun to refill Dworshak, reducing outflows over the last week from 20 Kcfs down to 10.8 Kcfs.

The Brownlee Reservoir was at an elevation of 2054.3 feet on April 24<sup>th</sup>, 2014, drafting 2.0 feet over the last week. Inflows to Brownlee Dam have ranged between 13.2 and 14.8 Kcfs last week. The April 30<sup>th</sup> FC Elevation at Brownlee is 2056.3 feet.

The Biological Opinion flow period began on April 3<sup>rd</sup> in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2014), the flow objective this spring will be 100 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 73.8 Kcfs over the last week and 74.3 Kcfs between April 3 and April 24, 2014.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives will be 260 Kcfs at McNary Dam (which began April 10<sup>th</sup>) and 135 Kcfs at Priest Rapids Dam (which began April 10<sup>th</sup>). Over the last week, flows at McNary Dam averaged 255.3 Kcfs over the last week and 245.5 over the spring period. Flows at Priest Rapids Dam have averaged 169.2 Kcfs over the last week and 154.6 Kcfs over the spring period.

## Spill

The 2014 fish spill program was initiated at the lower Snake River projects beginning on April 3<sup>rd</sup> and on April 10<sup>th</sup> at the lower Columbia River projects.

Spill at Dworshak Dam ended on April 18<sup>th</sup> when the project outflow was reduced to powerhouse capacity. All of the lower Snake River projects have spilled at the 2014 Fish Operations Plan (FOP) levels.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	April 3–April 28: 45 Kcfs/Gas Cap April 28–June 1: 30%/30% vs. 45 Kcfs/Gas Cap

All the middle Columbia River projects spilled at, or occasionally above, the 2014 FOP levels over the past week. The additional spill was due to the distribution of excess generation spill.

Project	Spill Level Day/Night
McNary	40%/40%
John Day	<b>Pre-test:</b> 30%/30% <b>Testing:</b> 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. 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. Very few fish were observed with signs of GBT, well below the action criteria.

## Smolt Monitoring

Smolt monitoring is ongoing at all seven SMP dams (BON, JDA, MCN, RIS, LMN, LGS, LGR) and three of the four traps (LEW, GRN, IMN). Sampling at the Salmon River Trap (WTB) was terminated after the April 21<sup>st</sup> sample. Sampling at Little Goose and Lower Monumental dams remained limited this week.

This week's samples at Bonneville Dam (BON) were dominated by yearling Chinook juveniles. This week's daily average passage index for yearling Chinook was about 34,200 per day. This is a substantial increase over last week's daily average passage index of only about 3,000 per day. Passage of coho and steelhead also increased this week, when compared to last week. The daily average passage indices for these two species were about 7,250 and 1,530 per day, respectively. Passage of subyearling Chinook decreased substantially this week when compared to last week. The daily average passage index for subyearling Chinook at BON this week was about 2,200 per day. With a daily average passage index of about 530 per day, passage of sockeye this week was similar to last week. So far, no Pacific lamprey ammocoetes have been sampled at BON. Overall, samples of Pacific lamprey macrophthalmia decreased this week, when compared to last week. The daily average collection for Pacific lamprey macrophthalmia for this week was about 30 per day.

Yearling Chinook continued to dominate the collections at John Day (JDA). In fact yearling Chinook passage increased substantially this week when compared to last week. This week's daily average passage index for yearling Chinook at JDA was about 14,500 per day. Last week's daily average passage index was about 1,800 per day. Passage of steelhead and sockeye also increased this week. This week's daily average passage indices for these two species were 5,400 and 340 per day, respectively. Last week's daily average passage indices for these two species were about 1,000 and 50 per day, respectively. Passage of subyearling Chinook and coho remained relatively low this week. Both Pacific lamprey ammocoetes and macrophthalmia were collected at JDA this week. This week's daily average collection for Pacific lamprey

ammocoetes was about 40 per day, while that for Pacific macrophthalmia was about 170 per day.

Sampling at McNary Dam (MCN) is every-other-day for the entire 2014 SMP season. Yearling Chinook continued to dominate the collections at MCN this week. This week's daily average passage index for yearling Chinook at MCN was nearly 26,000 per day. This represents a substantial increase over last week's daily average passage index of about 6,000 per day. Steelhead, sockeye, coho, and subyearling Chinook passage also increased this week when compared to last week. This week's daily average passage indices for these four species were about 12,500, 9,300, 840, and 440 per day, respectively. All subyearling Chinook collected at MCN this week were fry. Finally, only Pacific lamprey macrophthalmia have been collected so far this year. The daily average collection of Pacific macrophthalmia this week was about 120 per day.

As with last week, this week's samples at Lower Granite Dam were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook at LGR was about 104,500 per day, which is an increase over last week's daily average passage index of nearly 31,000 per day. A small proportion (approximately 2.5%) of this week's total yearling Chinook passage index were hatchery yearling fall Chinook. These hatchery yearling fall Chinook were released from acclimation ponds above LGR in recent weeks. Steelhead passage continued to increase this week. The daily average passage index for steelhead this week was about 69,000 per day while last week's daily average passage index was about 12,000. With a daily average passage index of about 1,550 per day, sockeye passage at LGR this week was similar to last week. Dworshak Dam spilled water for flood control from March 11<sup>th</sup> to April 18<sup>th</sup>. It is likely that the sockeye collected a Lower Granite so far this year have actually been kokanee from Dworshak reservoir. Passage of subyearling Chinook fry and coho also increased this week. Finally, no lamprey juveniles have been sampled at Lower Granite Dam this year.

Sampling at Little Goose (LGS) and Lower Monumental (LMN) dams is limited until transportation begins. This limited sampling will be every 5 days at

LGS and every 3 days at LMN. During this time, the sample at LGS is a full 24-hour sample while that at LMN is a limited duration sample (hours) for condition fish only. Steelhead and yearling Chinook continued to dominate this week's samples at LGS and LMN. LGS did one 24-hour sample this week. The passage indices from this week's sample at LGS were about 126,000 for yearling Chinook and nearly 140,000 for steelhead. Both of these passage indices represent substantial increases over last week's passage indices for these two species. Both sites also collected sockeye in this week's samples and LGS sampled a few subyearling Chinook fry and coho. Finally, LMN collected Pacific lamprey macrophthalmia in their May 22<sup>nd</sup> sample. No lamprey juveniles were collected at LGS this week.

Sockeye and yearling Chinook dominated this week's samples at Rock Island Dam (RIS). However, passage of sockeye at RIS decreased this week when compared to last week. This week's daily average passage index for sockeye at RIS was about 320 per day while last week's daily average passage index was just over 900 per day. The daily average passage index for yearling Chinook at RIS this week was about 100 per day, compared to last week's daily average passage index of about 90 per day. Steelhead, coho, and subyearling Chinook passage at RIS remained relatively low this week. All subyearling Chinook juveniles that were sampled this week were fry. Finally, no Pacific lamprey macrophthalmia were sampled at RIS this week.

The Grande Ronde Trap (GRN) is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer 2 in the Grande Ronde River. Yearling Chinook continued to dominate the collections this week, with a daily average collection of about 415 per day. This represents a decrease over last week's daily average collection of about 730 per day. Over the past week, 87%–94% of the daily yearling Chinook collection has been of known hatchery origin. Steelhead collections at GRN increased slightly this week. This week's daily average collection for steelhead was about 80 per day.

The Salmon River Trap (WTB) is located at river kilometer 103 and operated by Idaho Department of Fish and Game. Due to a higher than usual sampling efficiency and, thus, increased sample counts at this

trap, sampling at the WTB for 2014 was terminated after the April 21<sup>st</sup> sample. Leading up to the termination of sampling, yearling Chinook continued to dominate the collections at WTB. The daily average collection for yearling Chinook for the period of April 18<sup>th</sup> to April 21<sup>st</sup> was about 1,400 per day, which is a decrease over last week's daily average collection of about 4,400 per day. Of the yearling Chinook that were collected this week (April 18–21), approximately 91% were of known hatchery origin. Steelhead collections also increased in this week's samples, when compared to last week. This week's daily average collection for steelhead was about 200 per day. Last week's daily average collection was only about 170 per day. No larval or juvenile lamprey were sampled this week.

The Snake River Trap (LEW) is located at river kilometer 225 and operated by Idaho Department of Fish and Game. Collections of yearling Chinook and steelhead increased this week, when compared to last week. The daily average collections for yearling Chinook and steelhead this week were about 240 and 440 per day, respectively. Last week's daily average collections for yearling Chinook and steelhead at LEW were about 190 and 100, respectively. As with LGR, a portion of the yearling Chinook (7%) collected at LEW this week were likely yearling fall Chinook. These yearling fall Chinook include hatchery yearling fall Chinook that were released from acclimation ponds above LEW in recent weeks or individuals that overwintered in the LGR pool and are now out-migrating.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at IMN is year-round, however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through April 23<sup>rd</sup>. The average daily collection for yearling Chinook this week was about 675 per day, which is a decrease from last week's average collection of about 1,100 per day. Steelhead collections this week increased when compared to last week. The daily average collection for steelhead this week was about 470 per day.

## Hatchery Release

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. There were no new releases of spring Chinook juveniles this week. However, several volitional releases that began weeks ago were scheduled to end this week. The only new releases that were scheduled to begin this week were two releases of summer steelhead to the Tucannon River that were expected to total about 91,000 juveniles. Of these 91,000 juveniles, about 55% were unclipped but tagged with coded-wire tags.

Only one release of yearling spring Chinook juveniles is scheduled to take place over the next 2 weeks in this zone. On or around April 29<sup>th</sup>, about 193,000 yearling spring Chinook are scheduled to be released into Yankee Fork of the Salmon River. These yearling spring Chinook are 100% unclipped but are tagged with coded-wire tags. Several sockeye releases are scheduled for this zone over the next 2 weeks. In all, about 276,000 sockeye are scheduled to be released into Redfish Lake Creek, a tributary of the Salmon River. The only other releases that are scheduled for this zone over the next 2 weeks are of summer steelhead. In all, about 766,500 summer steelhead are scheduled for release in this zone over the next 2 weeks. These releases are scheduled to take place throughout this zone, including the Grande Ronde River (48%), the Imnaha River (28%), the Wallowa River (16%), and the Salmon River (8%).

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. Approximately 50,000 subyearling fall Chinook were scheduled to be released into the Yakima River this week. These fall Chinook juveniles were unclipped but were tagged with coded-wire tags. In addition, about 1.2 million yearling spring Chinook and 540,000 yearling summer Chinook were scheduled to be released into the Wenatchee River this week. Finally, three new releases of summer steelhead were scheduled for this zone this week. In all, these three releases were expected to total about 310,000 juveniles. Of these, approximately 74% were scheduled to be released into

the Wenatchee River and 26% were scheduled to be released into the Okanogan River.

Three releases of subyearling fall Chinook juveniles are scheduled for this zone over the next 2 weeks. Two of these three releases are Yakama Tribal releases to the Yakima River that are expected to total about 1.7 million fall Chinook juveniles. The third release is of about 4,700 fall Chinook juveniles near Pasco, Washington, and is part of the WDFW Cooperative Program. The Yakama Tribal Program to reintroduce coho to the Wenatchee, Methow, and Yakima rivers is scheduled to release about 930,000 coho juveniles over the next 2 weeks. The releases that are scheduled to begin over the next 2 weeks are scheduled to occur in the Methow (57%) and Wenatchee (43%) rivers. As with many of the releases that have already started, many of these future releases are volitional and are expected to run for several weeks. Finally, approximately 100,000 summer steelhead are scheduled for release into the Methow River over the next 2 weeks.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Approximately 750,000 coho juveniles were scheduled to be released into the Umatilla River this week. Of these coho juveniles, about 16% were unclipped but were tagged with coded-wire tags. The only other releases that were scheduled for this zone this week were of summer steelhead to the Umatilla River. In all, about 164,600 summer steelhead were scheduled to be released to the Umatilla River this week.

On May 6<sup>th</sup>, Spring Creek NFH is scheduled to release about 4.5 million subyearling fall Chinook tules into Bonneville Pool. This is the second and final release of fall Chinook tules from Spring Creek NFH this year. Approximately 962,000 coho juveniles are scheduled to be released into the Klickitat River on or around May 1<sup>st</sup>. Finally, about 127,500 steelhead juveniles are scheduled for release to this zone over the next 2 weeks. Of these, about 71% are summer steelhead that are scheduled to be released into the Klickitat River. The remaining 29% are winter steelhead that are scheduled to be released into Hood River.

## Adult Passage

Bonneville Dam uses video counts from January 1<sup>st</sup> through March 31<sup>st</sup> and direct counting after this period. Bonneville Dam counts adult salmon and steelhead year-round. Lower Granite Dam uses video counts from March 1<sup>st</sup> through March 31<sup>st</sup> and direct counting after this period. Lower Granite Dam counts adult salmon and steelhead through December 30<sup>th</sup> each year. Willamette Falls also uses video counts and reports adult counts year-round.

Adult counts at Bonneville Dam have been updated through 4/24/14. The 2014 adult spring Chinook count at Bonneville Dam is 29,626, which is about 3.9 times greater than the 2013 count of 7,664 and 1.15 times greater than the 10-year average count of 25,808. The 2014 Bonneville Dam adult steelhead count of 3,597 is about 1.4 times greater than the 2013 count of 2,496 and 1.1 times greater than the 10-year average count of 3,299.

At Willamette Falls 2,508 adult spring Chinook have been counted so far this season, and the 2014 count for steelhead was 5,309 as of April 23<sup>rd</sup>.

A total of 228 spring chinook have been counted at Lower Granite Dam as of April 24<sup>th</sup>. This year's Lower Granite steelhead count of 6,953 is about the same as the 2013 count of 6,948, while being 85.8% of the 10-year average count of 8,107.

Counting at Priest Rapids Dam began on April 15<sup>th</sup>. In the 9 days of counting, 47 spring Chinook and 40 steelhead were observed.

Between March 1<sup>st</sup> and April 13<sup>th</sup>, a total of 133 steelhead and 22 other salmonid species were observed over the separator at the Bonneville Juvenile Monitoring Facility (JMF). This year's Kelt passage at Bonneville Dam has completed for the season. Detailed data for the 2014 Kelt passage at the Bonneville JMF can be found at: <http://www.fpc.org/adultsalmon/bonkeltcounts.htm>.

## 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. Currently, Grant County PUD is attempting to define why and how this crack at the project formed.

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 engineers have been designing 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. Visual observations of the retrofit appeared promising. Between April 15 and April 19 Grant County PUD reported 14 adult spring Chinook and 187 adult steelhead as safely passing the modified left bank ladder. A weir and chute has also been installed at the right bank fishway at Wanapum and was operational on April 23, 2014. Grant County PUD has 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 a few feet. As numbers of migrating adults are currently low, it remains uncertain as to how well these retrofits will effectively pass larger numbers of adult fish. These modifications will need to be vigilantly monitored throughout the period of their use to observe (1) accumulations of adults below the structures, (2) if adults pass evenly over the weir or seem to prefer certain areas to pass, and (3) how well they exit the structure. Grant County has also modified their Off Ladder Adult Fish Trap (OLAFT) at Priest Rapids Dam and has begun a Trap and Haul operation at Priest Rapids. Currently, the first two hundred hatchery Chinook through the trap will be PIT-tagged and fifty additional hatchery chinook will be acoustic-tagged; these fish will be returned to the ladder to migrate through the Priest Rapids reservoir and through the Wanapum project. All other fish at the left bank fishway at Rapids Dam will be trapped and hauled

to a location above Wanapum Dam. This operation is expected to continue until the tagged chinook passage at Wanapum Dam can be evaluated. The right bank fish ladder at Priest Rapids is currently operating at a reduced but passable level to provide an additional route of passage around Priest Rapids Dam.

At the current time, Grant County will not be capable of counting adult fish at either the left or right bank fishways at Wanapum Dam. Temporary PIT-tag detectors have been installed at the Wanapum fishways to help track adult fish passage over the project. 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 had to construct extensions or denils at several ladder entrances. Chelan County PUD currently has two denils in place at the right bank fishway. Because these denils will primarily be utilized at lower project discharges (tailwater), Chelan PUD was planning on reducing midday (1200–1600 hours) discharges on April 23, 24, and 25 to between 70 and 90 Kcfs to test the operation of the denils at the right bank fishway. A denil extension is also planned to be in place at the left bank fishway in June.

In addition to the major impacts to adult fish passage, the crack and resultant drawdown of the Wanapum forebay is expected to have impacts on the juvenile migrations. To aid in juvenile passage, Grant County typically operates a bypass at Wanapum dam that discharges approximately 20 Kcfs. With forebay levels much lower than normal, this bypass will now discharging approximately one quarter of its ordinary level (approximately 5 Kcfs). The impact of this lower discharge on juvenile fish survival will have to be assessed.

### Hatchery Releases Last Two Weeks

Agency	Hatchery	Hatchery Release Summary											
		From:	4/11/2014	to	04/24/14	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2014	44,000	04-01-14	04-15-14	Omak Creek	Okanogan River				
<b>Colville Tribe Total</b>					<b>44,000</b>								
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2014	130,000	04-14-14	04-14-14	Newsome Creek	S Fk Clearwater River				
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2014	188,000	04-07-14	04-16-14	Meadow Creek - CLES	S Fk Clearwater River				
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2014	287,000	04-15-14	04-15-14	Meadow Creek - CLES	S Fk Clearwater River				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2014	138,018	04-16-14	04-18-14	Pahsimeroi River	Pahsimeroi River				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2014	186,561	04-14-14	04-16-14	Squaw Creek	Salmon River (ID)				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2014	219,155	04-10-14	04-17-14	Little Salmon River	Salmon River (ID)				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2014	237,353	04-11-14	04-14-14	Little Salmon River	Salmon River (ID)				
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2014	505,449	04-18-14	04-23-14	Yankee Fk (Salmon R)	Salmon River (ID)				
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2014	450,000	04-11-14	04-17-14	Little Salmon River	Salmon River (ID)				
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2014	143,242	04-01-14	04-14-14	Pahsimeroi Hatchery	Pahsimeroi River				
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2014	834,059	04-01-14	04-14-14	Pahsimeroi Hatchery	Pahsimeroi River				
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2014	2,500,000	03-17-14	04-25-14	Rapid River Hatchery	Little Salmon River				
<b>Idaho Dept. of Fish and Game Total</b>					<b>5,818,837</b>								
Nez Perce Tribe	Dworshak NFH	ST	SU	2014	240,000	04-18-14	04-22-14	Lolo Creek	Clearwater River M F				
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2014	233,061	03-21-14	04-22-14	Lostine Accim Pond Big Canyon	Wallowa River				
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2014	162,000	04-17-14	04-17-14	(Clearwater River) Pittsburg Landing	Clearwater River M F				
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2014	164,000	04-15-14	04-15-14	Acclim Pond	Snake River				
<b>Nez Perce Tribe Total</b>					<b>799,061</b>								
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2014	230,395	04-01-14	04-14-14	Imnaha Acclim Pond	Imnaha River				
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2014	251,780	04-01-14	04-14-14	Lookingglass Creek	Grande Ronde River				
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2014	5,500	04-15-14	04-15-14	Wychus Creek	Deschutes River				
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2014	8,000	04-15-14	04-15-14	Crooked River (OR)	Deschutes River				
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	ST	SU	2014	54,800	04-24-14	04-24-14	Meacham Creek	Umatilla River				
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2014	5,000	04-15-14	04-15-14	Wychus Creek	Deschutes River				
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2014	7,000	04-15-14	04-15-14	Metolius River	Deschutes River				
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2014	7,500	04-15-14	04-15-14	Crooked River (OR)	Deschutes River				
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>569,975</b>								
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2014	1,129,229	04-16-14	04-16-14	Carson Hatchery	Wind River				
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2014	360,000	04-14-14	04-15-14	Clear Creek Redhouse (Sfk	Clearwater River M F				
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2014	418,000	04-14-14	04-18-14	ClearH2O R)	S Fk Clearwater River				
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2014	1,201,000	04-14-14	04-18-14	Dworshak Hatchery	Clearwater River M F				
U.S. Fish and Wildlife Service	Entiat Hatchery	CH1	SU	2014	385,000	04-16-14	04-16-14	Entiat Hatchery	Entiat River				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2014	1,166,550	04-02-14	04-25-14	Sawtooth Hatchery	Salmon River (ID)				
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2014	1,200,000	04-22-14	04-23-14	Icicle Creek Little White Salmon	Wenatchee River Little White Salmon				
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2014	875,801	04-17-14	04-17-14	Hatchery	River				



### Hatchery Releases Last Two Weeks

Agency	Hatchery	Hatchery Release Summary							RelRiver	
		From:	4/11/2014	to	04/24/14	Species	Race	MigYr		NumRel
U.S. Fish and Wildlife Service	Willard Hatchery	CH1	SP	2014	122,800	04-15-14	04-15-14	Willard Hatchery	Little White Salmon River	
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2014	560,000	04-15-14	04-30-14	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2014	53,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2014	96,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River	
<b>U.S. Fish and Wildlife Service Total</b>					<b>7,567,380</b>					
Umatilla Tribe	Cascade Hatchery	CO	UN	2014	750,000	04-20-14	04-20-14	Pendelton Acclim Pond	Umatilla River	
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2014	119,557	04-06-14	04-15-14	Grande Ronde Acclim Pond	Grande Ronde River	
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2014	138,370	03-21-14	04-15-14	Catherine Cr Acclim Pond	Grande Ronde River	
Umatilla Tribe	Umatilla Hatchery	ST	SU	2014	54,800	04-20-14	04-20-14	Minthorn Acclimation Pond	Umatilla River	
Umatilla Tribe	Umatilla Hatchery	ST	SU	2014	54,800	04-20-14	04-20-14	Pendelton Acclim Pond	Umatilla River	
<b>Umatilla Tribe Total</b>					<b>1,117,527</b>					
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2014	222,300	04-15-14	04-25-14	Chiwawa Hatchery	Wenatchee River	
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2014	25,000	04-20-14	05-20-14	Blackbird Island Acc Pond	Wenatchee River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	41,000	04-20-14	04-20-14	Tucannon River	Tucannon River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	50,000	04-15-14	04-15-14	Baileysburg Bridge	Touchet River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	90,000	04-05-14	04-15-14	Dayton Acclim Pond	Touchet River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	107,500	04-15-14	04-15-14	Walla Walla River	Walla Walla River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	117,500	04-15-14	04-15-14	Lyons Ferry Hatchery	Snake River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	210,000	04-08-14	04-30-14	Cottonwood Acclim Pond	Grande Ronde River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2014	49,162	04-15-14	04-30-14	Twisp Acclim Pond	Methow River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2014	203,330	04-15-14	04-20-14	Methow Hatchery	Methow River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2014	200,000	04-15-14	04-25-14	Carlton Acclim Pond	Methow River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2014	50,000	04-10-14	04-30-14	Twisp Acclim Pond	Methow River	
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2014	150,000	04-10-14	04-20-14	Ringold Springs Hatchery	Mid-Columbia River	
Washington Dept. of Fish and Wildlife	Similkameen Hatchery	CH1	SU	2014	115,000	04-15-14	05-10-14	Similkameen Acclim Pd	Okanogan River	
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2014	256,000	04-01-14	04-25-14	Curl Lake Acclim Pond	Tucannon River	
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2014	50,000	04-20-14	04-30-14	Tucannon River	Tucannon River	
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2014	320,000	04-15-14	05-15-14	Wells Hatchery	Mid-Columbia River	
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>2,256,792</b>					
Yakama Tribe	Cascade Hatchery	CO	UN	2014	97,683	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River	
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	258,316	03-15-14	05-15-14	Clark Flat Acclim Pond	Yakima River	
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	270,653	03-15-14	05-15-14	Jack Creek Acclim Pond	Yakima River	
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	277,151	03-15-14	05-15-14	Easton Pond	Yakima 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	

### Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	4/11/2014		to		04/24/14				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
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	Marion Drain Hatchery	CH0	FA	2014	50,000	04-21-14	04-21-14	Roza Acclim 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	Willard Hatchery	CO	UN	2014	63,979	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	92,364	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	96,368	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	96,975	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	98,104	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2014	100,786	04-18-14	04-20-14	Leavenworth Hatchery	Wenatchee River
<b>Yakama Tribe Total</b>					<b>2,368,177</b>				
<b>Grand Total</b>					<b>20,541,749</b>				

### Hatchery Releases Next Two Weeks

Agency	Hatchery	Hatchery Release Summary			MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
		From:	4/25/2014	to						
Idaho Dept. of Fish and Game	Oxbow-Oregon	SO	UN	2014	110,000	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)	
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2014	2,500,000	03-17-14	04-25-14	Rapid River Hatchery	Little Salmon River	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2014	193,000	04-29-14	04-29-14	Yankee Fk (Salmon R)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2014	1,320	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	SO	UN	2014	165,000	05-07-14	05-07-14	Redfish Lake Creek	Salmon River (ID)	
<b>Idaho Dept. of Fish and Game Total</b>					<b>2,969,320</b>					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	50,000	04-30-14	04-30-14	Big Sheep Creek	Imnaha River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	120,000	05-04-14	05-04-14	Wallowa Acclim Pond	Wallowa River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	160,000	05-08-14	05-08-14	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2014	165,000	04-30-14	04-30-14	Little Sheep Creek	Imnaha River	
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>495,000</b>					
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2014	61,500	04-28-14	04-30-14	East Fk Salmon River	Salmon River (ID)	
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2014	1,166,550	04-02-14	04-25-14	Sawtooth Hatchery	Salmon River (ID)	
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2014	4,500,000	05-06-14	05-06-14	Spring Creek Hatchery	L Col R (D/s McN Dam)	
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2014	560,000	04-15-14	04-30-14	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2014	53,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River	
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2014	96,000	04-15-14	05-15-14	Winthrop Hatchery	Methow River	
<b>U.S. Fish and Wildlife Service Total</b>					<b>6,437,050</b>					
Warm Springs Tribe	Oak Springs Hatchery	ST	WI	2014	25,000	04-30-14	04-30-14	E Fk Irrig Dist Sand Trap	Hood River	
Warm Springs Tribe	Parkdale Acclim. Pond	ST	WI	2014	12,500	04-30-14	04-30-14	Parkdale Acclim Pond	Hood River	
<b>Warm Springs Tribe Total</b>					<b>37,500</b>					
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2014	222,300	04-15-14	04-25-14	Chiwawa Hatchery	Wenatchee River	
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	ST	SU	2014	205,000	04-25-14	05-15-14	Chiwawa Hatchery	Wenatchee 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	Eastbank Hatchery	CH1	SU	2014	90,000	04-25-14	04-25-14	Dryden Acclim Pond	Wenatchee River	
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2014	450,000	04-25-14	04-25-14	Dryden Acclim Pond	Wenatchee River	
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	ST	SU	2014	25,000	04-20-14	05-20-14	Blackbird Island Acc Pond	Wenatchee River	
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2014	210,000	04-08-14	04-30-14	Cottonwood Acclim Pond	Grande Ronde River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2014	49,162	04-15-14	04-30-14	Twisp Acclim Pond	Methow River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2014	200,000	04-15-14	04-25-14	Carlton Acclim Pond	Methow River	
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2014	50,000	04-10-14	04-30-14	Twisp Acclim Pond	Methow 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	Similkameen Hatchery	CH1	SU	2014	115,000	04-15-14	05-10-14	Similkameen Acclim Pd	Okanogan River	
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	SU	2014	90,000	05-01-14	05-10-14	Klickitat River	Klickitat River	
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2014	256,000	04-01-14	04-25-14	Curl Lake Acclim Pond	Tucannon River	

### Hatchery Releases Next Two Weeks

Agency	Hatchery	Hatchery Release Summary			NumRel	RelStart	RelEnd	RelSite	RelRiver
		From:	4/25/2014	to					
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2014	50,000	04-20-14	04-30-14	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2014	320,000	04-15-14	05-15-14	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2014	80,000	04-25-14	05-10-14	Okanogan River	Okanogan River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>2,517,562</b>				
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	Cle Elem Hatchery	CH1	SP	2014	258,316	03-15-14	05-15-14	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	270,653	03-15-14	05-15-14	Jack Creek Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2014	277,151	03-15-14	05-15-14	Easton Pond	Yakima 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	CO	NO	2014	926,000	05-01-14	05-01-14	Klickitat Hatchery	Klickitat River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2014	22,000	04-29-14	04-29-14	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH0	FA	2014	1,700,000	04-26-14	04-26-14	Prosser Acclim 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	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
<b>Yakama Tribe Total</b>					<b>5,251,173</b>				
<b>Grand Total</b>					<b>17,707,605</b>				

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
04/11/2014	119.9	0.0	119.7	0.0	120.4	8.4	110.4	0.0	116.3	21.7	124.9	3.7	132.3	0.0
04/12/2014	123.2	0.0	118.9	0.0	120.1	8.5	114.2	0.0	117.3	24.3	117.1	0.0	121.2	0.0
04/13/2014	131.4	0.0	133.7	0.0	128.4	9.1	116.6	0.0	120.6	21.6	118.2	14.2	118.3	1.1
04/14/2014	128.7	0.0	131.0	0.0	134.1	10.0	129.7	0.0	131.8	16.9	138.2	28.6	145.3	4.0
04/15/2014	141.3	0.0	139.2	0.0	140.6	10.3	136.6	0.0	132.7	21.5	143.4	34.6	150.2	46.2
04/16/2014	146.0	0.0	147.0	9.3	149.9	10.0	145.3	0.0	150.1	23.1	148.3	39.8	158.6	37.5
04/17/2014	145.5	0.0	146.5	16.8	150.7	10.0	145.7	0.0	156.9	40.6	153.8	42.8	166.8	30.6
04/18/2014	145.3	1.8	142.5	22.0	150.0	17.7	148.5	8.0	147.3	32.2	159.4	43.6	177.1	43.0
04/19/2014	149.5	4.8	149.2	25.0	160.6	16.5	154.1	0.0	161.8	24.2	159.4	35.8	170.2	45.9
04/20/2014	148.9	4.8	152.2	25.3	156.8	10.5	151.7	0.0	159.8	23.5	152.2	31.8	160.8	39.2
04/21/2014	148.6	4.8	146.8	25.3	154.7	17.9	148.5	0.0	155.6	20.9	156.8	30.7	167.6	33.5
04/22/2014	145.3	4.8	146.4	23.8	158.4	20.8	158.6	15.8	159.1	24.5	155.6	41.9	165.8	53.1
04/23/2014	145.7	4.8	152.2	21.6	164.1	15.2	160.9	12.2	164.5	41.8	163.3	56.8	175.5	65.5
04/24/2014	149.6	4.8	146.9	17.9	151.4	14.0	151.2	6.5	157.9	44.6	156.0	52.0	167.5	63.8

**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
04/11/2014	19.8	8.9	15.6	19.1	81.7	20.6	80.7	24.0	80.1	29.4	84.5	57.4		
04/12/2014	19.8	8.9	15.8	18.5	84.2	20.5	84.7	26.6	85.9	27.0	86.9	58.1		
04/13/2014	20.0	8.9	16.2	18.4	83.0	21.6	83.5	25.1	84.9	26.0	88.4	58.3		
04/14/2014	20.0	8.9	16.3	19.5	78.7	31.3	83.5	25.7	83.4	26.8	85.8	58.2		
04/15/2014	20.0	8.9	16.1	10.9	69.6	20.6	79.1	31.1	79.6	28.0	83.5	67.2		
04/16/2014	19.9	9.0	15.5	12.8	71.4	21.6	70.3	21.2	70.0	28.0	71.7	53.7		
04/17/2014	19.9	9.0	14.8	19.0	72.4	21.6	72.4	22.5	72.1	28.6	74.5	55.7		
04/18/2014	14.8	3.9	14.8	18.0	70.2	24.8	74.1	22.9	74.9	29.6	77.7	55.3		
04/19/2014	10.8	0.0	14.1	19.3	70.6	22.9	68.4	24.1	69.1	29.6	70.9	55.2		
04/20/2014	10.8	0.0	14.1	16.3	73.4	20.6	72.4	23.8	71.6	29.6	74.4	53.1		
04/21/2014	10.8	0.0	13.4	21.1	77.3	20.4	70.9	21.3	70.6	29.6	72.9	52.9		
04/22/2014	10.8	0.0	13.2	13.3	74.7	20.5	80.3	24.0	82.5	29.6	83.8	58.2		
04/23/2014	10.7	0.0	13.9	14.3	77.7	21.3	73.4	22.0	73.0	29.9	74.9	56.4		
04/24/2014	10.8	0.0	---	17.9	80.1	29.4	76.4	23.7	75.9	29.9	79.5	58.2		

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2		
04/11/2014	241.9	97.1	237.7	71.3	221.6	88.6	244.8	100.4	32.7	99.3
04/12/2014	222.2	88.9	226.4	68.0	213.8	85.5	236.7	100.4	22.6	101.3
04/13/2014	235.9	94.2	240.0	72.1	228.3	91.0	246.5	100.4	32.7	101.0
04/14/2014	228.9	95.9	225.7	67.9	214.7	85.9	234.7	100.4	33.1	88.8
04/15/2014	231.9	124.2	231.9	78.8	212.9	95.5	225.3	101.9	23.1	87.9
04/16/2014	239.7	115.8	251.0	75.2	237.7	95.1	268.3	100.6	66.3	89.0
04/17/2014	253.4	127.5	249.7	76.5	237.0	96.6	261.5	100.9	60.1	88.1
04/18/2014	253.9	112.8	246.3	73.8	226.9	90.6	245.0	100.4	43.3	89.0
04/19/2014	258.4	111.1	256.3	77.2	243.5	96.9	261.1	100.5	60.6	87.6
04/20/2014	256.7	106.1	264.3	79.3	249.8	100.0	272.0	100.5	69.5	89.6
04/21/2014	247.1	102.0	246.2	79.2	232.6	92.7	255.9	100.4	55.2	87.9
04/22/2014	250.0	108.1	252.7	77.2	237.7	97.2	256.9	100.7	62.1	81.7
04/23/2014	258.0	107.7	266.4	90.0	247.4	113.0	270.9	100.8	77.7	80.1
04/24/2014	262.7	114.7	248.6	96.5	234.9	119.6	264.6	100.5	74.4	77.3

## 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
<b>Lower Granite Dam</b>											
	04/17/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/24/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Little Goose Dam</b>											
	04/16/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/21/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	04/13/14	Chinook + Steelhead	95	0	0	0.00%	0.00%	0	0	0	0
	04/19/14	Chinook + Steelhead	100	2	2	2.00%	0.00%	2	0	0	0
	04/22/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>McNary Dam</b>											
	04/14/14	Chinook + Steelhead	77	0	0	0.00%	0.00%	0	0	0	0
	04/18/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/20/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/24/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Bonneville Dam</b>											
	04/19/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	04/22/14	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	04/21/14	Chinook + Steelhead	56	1	1	1.79%	0.00%	1	0	0	0
	04/24/14	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
4/11	113.5	113.6	113.7	24	---	---	---	0	107.3	107.8	108.3	24	104.1	104.9	105.2	24	---	---	---	0
4/12	113.4	113.5	113.5	24	---	---	---	0	107.1	107.3	107.4	24	104.5	104.8	105.2	24	---	---	---	0
4/13	113.2	113.3	113.5	24	---	---	---	0	106.2	106.3	106.4	24	103.9	104.2	104.3	24	---	---	---	0
4/14	114.1	114.6	114.7	24	---	---	---	0	107.3	108.2	108.4	24	104.7	105.4	105.7	24	---	---	---	0
4/15	114.6	114.7	114.9	24	---	---	---	0	107.8	107.9	108.1	24	105.7	105.8	106.0	24	---	---	---	0
4/16	114.7	114.8	115.2	24	---	---	---	0	107.9	108.2	108.3	24	105.6	105.9	106.1	24	106.3	106.4	106.6	15
4/17	114.8	114.9	115.1	24	---	---	---	0	108.8	109.0	109.2	24	106.3	106.6	106.7	24	106.6	106.8	106.9	24
4/18	114.8	114.9	115.0	24	---	---	---	0	108.3	108.6	109.0	24	106.6	107.1	109.5	24	106.5	106.7	106.9	24
4/19	114.7	114.8	115.0	24	---	---	---	0	108.4	108.6	109.0	24	112.0	112.9	113.3	24	106.4	106.7	107.1	24
4/20	114.6	114.7	114.9	24	---	---	---	0	107.6	107.8	107.9	24	112.9	113.2	113.4	24	107.3	109.1	111.6	24
4/21	114.1	114.4	114.7	24	---	---	---	0	108.6	109.1	109.3	24	114.0	114.6	115.0	24	113.4	114.3	114.6	24
4/22	114.2	114.5	115.0	24	---	---	---	0	108.6	109.2	109.4	24	114.0	114.8	115.1	24	114.9	115.1	115.3	24
4/23	114.7	114.9	115.0	24	---	---	---	0	108.3	108.6	109.4	24	114.3	114.7	115.2	24	114.5	114.7	115.0	24
4/24	114.8	114.8	114.9	23	---	---	---	0	108.1	108.2	108.4	23	115.2	115.3	115.5	23	114.5	114.7	114.8	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
4/11	---	---	---	0	106.0	106.4	106.8	24	104.7	107.5	108.6	24	107.2	107.4	107.6	24	107.1	107.4	107.7	24
4/12	---	---	---	0	105.7	106.0	106.4	20	106.2	107.4	108.3	20	107.0	107.2	107.4	24	107.1	107.3	107.4	24
4/13	---	---	---	0	105.0	105.4	105.8	23	105.6	107.5	108.2	23	106.0	106.3	106.4	24	106.2	106.6	107.1	24
4/14	---	---	---	0	106.1	106.6	106.8	23	105.7	108.9	109.7	23	107.2	107.9	108.4	24	107.4	107.9	108.4	24
4/15	---	---	---	0	106.2	106.4	106.6	21	106.0	109.1	110.6	21	108.1	108.4	108.6	24	108.0	108.7	109.0	24
4/16	---	---	---	0	106.2	106.3	106.5	22	106.9	109.0	109.3	22	108.2	108.5	108.8	24	108.5	108.7	108.9	24
4/17	---	---	---	0	106.8	106.9	107.2	18	107.0	109.4	110.0	18	108.8	109.1	109.3	24	108.9	109.1	109.4	24
4/18	---	---	---	0	106.3	106.4	106.8	17	106.2	108.6	110.1	16	108.1	108.3	108.8	24	110.0	111.5	115.9	24
4/19	109.4	109.6	109.9	24	106.7	106.9	107.4	19	107.6	110.0	111.2	19	108.9	109.7	110.2	24	108.8	109.2	109.6	24
4/20	109.7	110.1	110.2	24	106.1	106.3	106.3	19	108.3	108.5	108.6	19	108.3	109.2	109.7	24	108.2	109.0	109.7	24
4/21	110.5	110.8	111.0	24	109.3	110.9	112.7	20	109.1	109.6	110.1	20	109.0	109.7	110.1	24	109.3	109.8	110.2	24
4/22	111.4	111.8	112.0	24	113.0	113.1	113.7	14	110.4	111.4	114.8	14	110.4	111.1	112.2	24	112.4	115.0	117.3	24
4/23	111.7	112.1	112.6	24	113.0	113.2	113.6	19	111.3	114.9	116.2	19	112.9	113.6	113.9	24	115.7	117.5	118.2	24
4/24	111.0	111.1	111.4	23	113.4	113.4	113.5	3	114.9	114.9	115.0	3	113.7	113.8	114.0	23	115.4	116.4	117.7	23

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

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
4/11	105.9	106.4	106.6	24	110.7	112.1	113.2	24	108.0	108.9	110.3	24	109.1	110.3	113.1	24	108.9	109.5	110.3	24
4/12	106.0	106.3	106.6	24	110.8	111.8	112.1	24	108.8	109.8	110.3	24	108.9	109.7	110.1	24	108.3	109.0	109.9	24
4/13	105.0	105.7	106.0	24	108.4	109.4	111.1	24	108.8	109.7	110.2	24	109.8	111.8	115.1	24	108.9	110.4	112.2	24
4/14	106.2	106.9	107.4	24	109.0	111.5	113.3	24	109.1	109.9	110.5	24	111.3	113.1	114.5	24	111.5	113.9	114.9	24
4/15	106.8	107.1	107.4	24	112.2	113.3	113.7	24	107.0	107.7	108.4	24	109.9	111.8	114.8	24	109.9	110.6	111.6	24
4/16	107.1	107.2	107.4	24	111.3	112.2	113.4	24	110.0	110.4	110.9	24	112.6	112.9	113.3	24	109.5	111.5	112.4	24
4/17	107.5	108.0	108.1	24	112.4	113.9	114.9	24	110.5	111.0	111.5	24	113.7	114.6	115.7	24	112.8	113.0	113.1	24
4/18	107.7	108.5	110.7	24	112.8	114.5	117.8	24	110.1	110.9	111.3	24	113.1	114.6	116.7	24	112.5	113.4	115.5	24
4/19	107.6	108.5	109.3	24	110.2	111.3	113.2	24	111.6	113.4	115.5	24	112.7	114.0	115.4	24	111.6	112.0	113.7	24
4/20	107.0	107.9	108.4	24	109.7	110.3	111.0	24	108.3	109.1	109.4	24	109.9	110.4	111.5	24	110.7	111.4	112.1	24
4/21	108.0	108.3	108.4	24	110.2	110.7	110.9	24	110.0	110.6	111.2	24	110.6	111.2	111.6	24	110.5	111.0	112.2	24
4/22	108.3	109.1	110.5	24	110.7	111.9	113.2	24	109.8	110.4	111.1	24	112.8	114.1	115.6	24	110.8	111.1	112.1	24
4/23	112.8	113.4	113.9	24	114.8	115.8	117.1	23	109.9	110.7	111.9	24	115.2	116.7	120.1	24	113.5	114.9	118.8	24
4/24	113.3	113.6	114.0	23	115.7	116.3	118.6	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			#	Clrwtr-Peck			#	Anatone			#
	24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr	
4/11	108.3	108.9	109.4	24	---	---	---	0	116.6	117.1	117.5	24	107.6	108.4	108.9	24	102.4	103.3	104.3	24
4/12	107.3	107.6	107.9	24	---	---	---	0	116.6	116.8	117.1	24	107.3	107.8	108.1	24	102.0	102.5	103.3	24
4/13	107.5	108.3	109.4	24	---	---	---	0	116.0	116.2	116.4	24	107.0	107.7	108.2	24	101.9	102.8	103.5	24
4/14	110.4	112.7	114.3	24	---	---	---	0	116.2	116.6	116.9	24	107.8	108.8	109.2	24	102.8	103.9	104.4	24
4/15	112.8	114.4	115.3	24	---	---	---	0	116.5	116.7	116.8	24	107.7	108.0	108.3	24	102.5	102.9	103.5	24
4/16	111.9	112.9	113.4	24	---	---	---	0	116.6	116.7	117.2	17	108.0	108.8	109.0	24	102.2	102.9	103.7	24
4/17	113.6	114.5	115.1	24	---	---	---	0	117.5	117.6	117.7	15	108.8	109.2	109.4	24	102.5	102.9	103.3	24
4/18	113.4	114.7	115.1	24	---	---	---	0	107.1	115.5	117.5	24	104.7	108.0	108.9	24	102.4	103.1	103.8	24
4/19	112.9	113.6	114.3	24	---	---	---	0	99.2	99.8	100.4	24	100.9	101.7	102.4	24	102.6	103.5	104.3	24
4/20	112.2	113.6	114.1	24	---	---	---	0	98.3	98.5	98.7	24	100.6	101.6	102.2	24	102.6	103.5	104.2	24
4/21	111.5	112.1	112.5	24	---	---	---	0	99.3	99.8	100.2	24	101.3	102.0	102.3	24	103.3	103.9	104.2	24
4/22	113.0	113.9	114.2	24	---	---	---	0	99.0	99.3	99.7	24	100.4	100.7	101.5	24	102.7	103.0	103.3	24
4/23	114.7	115.6	116.7	24	---	---	---	0	99.8	100.3	100.5	24	100.6	101.3	101.5	24	102.5	103.2	103.4	24
4/24	---	---	---	0	---	---	---	0	100.6	100.7	100.9	23	100.9	101.1	101.2	23	102.9	103.0	103.3	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	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr	
4/11	105.5	106.6	107.3	24	105.1	105.3	105.5	24	111.1	111.3	111.4	24	112.3	112.6	112.7	24	111.5	111.6	111.9	24
4/12	105.3	105.9	106.4	24	104.7	104.9	105.0	24	111.4	112.2	117.2	24	112.0	112.3	113.0	24	112.1	112.6	115.4	24
4/13	103.5	104.3	105.1	24	103.5	103.7	104.2	24	110.8	111.0	111.2	24	109.9	110.2	110.9	24	111.1	111.6	113.1	24
4/14	104.2	105.9	106.7	24	103.8	104.4	104.7	24	111.0	111.8	116.2	24	110.0	110.6	111.8	24	111.4	112.2	113.5	24
4/15	104.6	105.0	105.4	24	104.4	104.8	105.0	24	114.5	117.2	117.5	24	110.3	110.5	110.6	24	113.5	115.3	115.8	24
4/16	103.7	104.7	105.4	24	104.5	104.8	105.1	24	111.7	111.9	112.1	24	109.8	110.0	110.1	24	110.7	110.8	111.0	24
4/17	105.0	105.6	105.9	24	105.0	105.2	105.3	24	112.3	112.7	116.0	24	110.0	110.3	111.1	24	111.0	111.4	114.3	24
4/18	105.2	106.2	106.7	24	104.0	104.3	104.7	24	111.6	112.3	115.0	24	110.3	110.5	110.8	24	111.0	111.4	113.9	24
4/19	104.4	105.2	106.0	24	104.3	104.5	104.6	24	112.2	113.7	116.9	24	110.4	110.9	111.4	24	111.5	112.6	115.7	24
4/20	101.4	102.3	103.0	24	102.8	103.0	103.4	24	112.1	112.9	116.3	24	108.4	108.8	109.3	24	110.8	111.6	115.1	24
4/21	102.3	103.1	103.6	24	103.6	103.8	103.9	24	110.9	111.4	112.0	24	109.5	110.1	110.7	24	110.4	110.7	111.3	24
4/22	101.3	102.0	102.7	24	103.1	103.3	103.5	24	110.9	111.3	111.7	24	110.3	110.5	111.0	24	110.8	111.1	113.1	24
4/23	99.5	100.3	100.7	24	102.9	103.1	103.3	24	111.1	111.6	112.2	24	110.2	110.6	111.3	24	110.6	110.8	111.5	24
4/24	99.9	100.3	100.6	23	102.4	102.6	102.9	23	110.7	111.2	114.8	23	108.9	109.5	109.7	23	111.5	112.3	114.8	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	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High		24 h	12 h	High	
	Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr		Avg	Avg	hr	
4/11	112.4	112.8	113.1	24	119.6	120.5	120.8	24	115.8	116.1	116.3	24	116.6	116.9	117.5	24	---	---	---	0
4/12	113.1	113.3	113.6	24	118.7	118.9	119.2	24	115.6	115.8	116.0	24	116.2	116.4	116.6	24	---	---	---	0
4/13	111.1	111.5	112.4	24	118.0	118.2	118.5	24	113.9	114.1	114.7	24	116.0	116.4	116.6	24	---	---	---	0
4/14	112.4	113.0	113.3	24	118.6	118.9	119.1	24	114.0	114.4	114.8	24	115.8	116.1	116.4	24	---	---	---	0
4/15	112.5	112.9	113.3	24	118.8	119.0	119.1	24	114.4	114.6	114.9	24	116.1	116.6	117.0	24	---	---	---	0
4/16	111.9	112.1	112.4	24	118.6	118.9	119.1	24	113.7	113.9	114.1	24	115.5	115.9	116.1	24	---	---	---	0
4/17	113.0	113.4	114.0	24	119.1	119.5	120.0	24	114.2	114.3	114.5	24	115.8	116.1	116.3	24	---	---	---	0
4/18	111.1	111.7	113.0	24	119.2	119.6	119.9	24	113.0	113.3	114.0	24	115.5	115.8	116.1	24	---	---	---	0
4/19	110.1	110.3	110.4	24	119.4	119.8	120.3	24	112.4	112.8	113.0	24	115.4	115.8	116.2	24	---	---	---	0
4/20	109.4	109.9	110.3	24	119.0	119.3	119.5	24	111.1	111.6	112.3	24	115.5	115.7	115.9	24	---	---	---	0
4/21	111.1	111.9	112.6	24	119.6	119.9	120.2	24	113.4	114.1	114.7	24	115.5	115.8	116.3	24	---	---	---	0
4/22	112.9	113.3	113.5	24	119.7	120.0	120.9	24	114.6	114.8	115.3	24	116.2	116.6	118.7	24	---	---	---	0
4/23	110.9	111.2	111.5	24	119.7	120.1	120.3	24	113.6	113.8	114.2	24	115.5	116.0	116.2	24	---	---	---	0
4/24	110.6	110.7	110.8	23	119.8	120.0	120.3	23	113.1	113.3	113.6	23	115.6	115.9	116.1	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	
4/11	111.5	111.5	111.7	24	114.2	114.5	114.7	24	109.8	110.5	110.9	24	113.4	113.7	114.7	24	110.4	110.7	111.1	24
4/12	111.0	111.1	111.2	24	114.0	114.3	114.5	24	110.6	110.8	111.0	24	113.6	114.1	114.8	24	110.7	111.4	112.0	24
4/13	109.7	110.1	110.4	24	113.7	114.2	114.5	24	110.3	110.8	111.2	24	113.5	114.1	114.7	24	111.0	111.3	111.6	24
4/14	109.9	110.2	110.6	24	113.6	113.9	114.1	24	112.3	113.2	113.8	24	113.9	114.4	115.3	24	112.1	112.5	113.0	24
4/15	109.8	110.1	110.4	24	115.3	116.4	117.1	24	112.1	112.6	113.1	24	114.4	115.2	115.7	24	110.7	111.3	112.4	24
4/16	108.8	109.0	109.0	24	114.9	115.5	116.4	24	110.8	110.9	111.0	24	113.8	114.3	115.0	24	111.1	111.6	112.0	24
4/17	110.2	110.9	111.3	24	115.9	116.4	117.2	24	110.8	111.0	111.1	24	113.9	114.5	116.9	24	111.8	112.0	112.2	24
4/18	109.1	109.6	110.9	24	114.7	115.4	115.9	24	109.1	109.4	110.2	24	113.6	114.4	115.1	24	110.1	110.4	110.8	24
4/19	109.0	109.2	109.4	24	114.0	114.3	114.5	24	108.0	108.2	108.4	24	114.2	114.9	115.3	24	110.0	110.6	110.7	24
4/20	108.8	109.9	111.1	24	113.8	114.3	115.3	24	107.5	108.0	108.3	24	114.1	114.8	115.6	24	109.1	110.1	110.8	24
4/21	110.8	111.1	111.3	24	113.8	114.1	114.4	24	109.2	109.8	110.1	24	114.6	115.7	116.8	24	110.9	111.2	111.4	24
4/22	111.2	111.6	111.9	24	114.0	114.3	114.3	24	109.1	109.6	109.9	24	114.2	115.3	116.2	24	110.2	111.1	112.2	24
4/23	110.1	110.4	111.1	24	113.8	114.3	114.5	24	109.0	109.3	109.5	24	115.9	116.1	117.0	24	110.3	111.6	112.1	24
4/24	109.3	109.6	110.2	23	114.3	114.5	115.7	23	109.9	110.0	110.1	23	116.3	117.0	117.9	23	111.4	111.8	112.4	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	
4/11	116.0	116.2	116.6	24	108.9	111.0	111.2	24	113.9	114.5	114.8	24	110.6	111.5	112.4	24	117.5	117.8	118.0	24
4/12	116.2	116.4	116.6	24	112.4	113.0	113.3	24	115.7	116.3	116.8	24	112.7	114.2	115.2	24	117.6	117.7	117.9	24
4/13	116.5	116.9	117.1	24	112.7	113.2	113.5	24	115.5	115.7	115.8	24	112.8	113.5	114.0	24	117.7	117.9	118.0	24
4/14	117.0	117.5	117.9	24	113.9	114.7	115.5	24	115.9	116.3	116.9	24	112.3	113.6	114.7	24	117.7	117.8	118.0	24
4/15	117.4	118.6	121.4	24	112.7	113.1	114.0	24	115.9	116.2	116.8	24	113.5	114.6	115.3	24	117.5	117.6	118.8	24
4/16	116.4	116.7	116.8	24	113.1	114.5	115.4	24	115.0	115.6	116.1	24	113.8	114.2	114.7	24	118.2	118.5	118.7	24
4/17	117.6	118.3	121.2	24	114.8	115.1	115.2	24	116.0	116.2	116.5	24	114.4	114.8	115.3	24	118.5	118.7	120.6	24
4/18	116.0	116.4	116.6	24	113.7	114.4	114.9	24	115.8	116.2	116.4	24	113.9	115.6	116.6	24	117.9	118.1	118.3	24
4/19	116.0	116.5	117.0	24	114.5	115.2	115.6	24	115.8	116.3	116.5	24	112.8	113.6	115.2	24	118.1	118.3	118.5	24
4/20	115.6	116.2	116.8	24	113.0	113.6	114.2	24	114.9	115.4	115.7	24	113.5	114.8	115.4	24	118.2	118.5	118.6	24
4/21	116.7	117.0	117.8	24	115.4	116.1	116.4	24	116.7	117.2	117.7	24	115.0	116.1	116.9	24	118.1	118.2	118.5	24
4/22	116.5	117.1	117.5	24	114.2	114.9	115.9	24	115.7	116.1	116.6	24	114.1	114.5	115.2	24	118.0	118.3	118.6	24
4/23	118.0	118.8	119.3	24	113.2	113.7	114.5	24	114.7	115.0	115.2	24	112.9	113.4	113.8	24	118.3	118.6	119.6	24
4/24	119.8	120.8	122.8	23	115.7	116.3	116.9	23	116.0	116.5	116.9	23	113.5	113.9	114.2	23	118.4	118.6	118.7	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 4/25/2014 7:13

### Two-Week Summary of Passage Indices

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

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

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

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

<b>COMBINED YEARLING CHINOOK</b>											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/11/2014 *	3,925	1,493	669	34	17,048	---	---	41	616	974	1,583
04/12/2014 *	5,806	866	572	45	13,115	9,989	---	136	---	830	2,972
04/13/2014 *	5,879	1,676	---	85	27,712	---	217	108	2,144	1,375	4,854
04/14/2014 *	7,195	824	870	346	22,312	---	---	143	---	1,691	2,420
04/15/2014 *	4,881	1,015	1,083	466	36,145	---	---	64	8,715	1,588	2,540
04/16/2014 *	1,514	1,001	893	106	49,136	---	133	86	---	2,701	2,856
04/17/2014 *	1,602	1,076	272	229	51,094	23,292	---	47	12,257	3,627	4,062
04/18/2014 *	1,310	1,482	340	177	66,884	---	---	58	---	5,521	10,403
04/19/2014 *	1,463	761	434	115	58,653	---	2,341	78	19,883	6,929	30,527
04/20/2014 *	1,179	352	484	163	85,195	---	---	67	---	8,650	50,134
04/21/2014 *	1,652	353	237	150	64,941	---	---	85	27,511	19,888	44,409
04/22/2014 *	---	408	490	562	122,001	125,764	1,999	89	---	16,881	38,521
04/23/2014 *	---	691	411	215	159,568	---	---	125	30,165	19,427	29,740
04/24/2014 *	---	---	504	---	174,408	---	---	209	---	24,156	35,712
04/25/2014	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>36,406</b>	<b>11,998</b>	<b>7,259</b>	<b>2,693</b>	<b>948,212</b>	<b>159,045</b>	<b>4,690</b>	<b>1,336</b>	<b>101,291</b>	<b>114,238</b>	<b>260,733</b>
<b># Days:</b>	<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>3,310</b>	<b>923</b>	<b>558</b>	<b>207</b>	<b>67,729</b>	<b>53,015</b>	<b>1,173</b>	<b>95</b>	<b>14,470</b>	<b>8,160</b>	<b>18,624</b>
<b>YTD</b>	<b>65,404</b>	<b>59,546</b>	<b>17,673</b>	<b>3,059</b>	<b>1,104,183</b>	<b>162,927</b>	<b>4,924</b>	<b>1,427</b>	<b>101,718</b>	<b>121,454</b>	<b>283,992</b>

<b>COMBINED SUBYEARLING CHINOOK</b>											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
04/11/2014 *	0	3	0	9	66	---	---	118	34	0	571
04/12/2014 *	0	1	0	1	67	36	---	65	---	7	305,128
04/13/2014 *	0	3	---	0	0	---	---	39	135	0	322,634
04/14/2014 *	0	3	0	7	0	---	---	14	---	0	61,529
04/15/2014 *	0	0	0	0	443	---	---	17	575	0	7,826
04/16/2014 *	0	0	0	2	315	---	0	36	---	12	3,972
04/17/2014 *	0	0	0	3	0	1	---	32	296	0	2,973
04/18/2014 *	0	0	0	4	0	---	---	46	---	0	2,219
04/19/2014 *	0	0	0	0	572	---	0	38	800	19	2,125
04/20/2014 *	0	0	0	0	968	---	---	69	---	57	3,450
04/21/2014 *	0	0	0	3	285	---	---	25	344	0	2,439
04/22/2014 *	---	0	0	1	1,911	287	0	16	---	59	1,818
04/23/2014 *	---	0	0	0	1,114	---	---	13	175	0	2,381
04/24/2014 *	---	---	0	---	275	---	---	16	---	75	1,202
04/25/2014	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>30</b>	<b>6,016</b>	<b>324</b>	<b>0</b>	<b>544</b>	<b>2,359</b>	<b>229</b>	<b>720,267</b>
<b># Days:</b>	<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>430</b>	<b>108</b>	<b>0</b>	<b>39</b>	<b>337</b>	<b>16</b>	<b>51,448</b>
<b>YTD</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>65</b>	<b>8,905</b>	<b>324</b>	<b>0</b>	<b>1,313</b>	<b>2,465</b>	<b>277</b>	<b>750,090</b>

## Two-Week Summary of Passage Indices

<b>COMBINED COHO</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/11/2014	*	0	0	0	0	0	---	---	0	0	597
04/12/2014	*	0	0	0	0	0	---	5	---	0	750
04/13/2014	*	0	0	---	0	0	---	0	3	17	1,941
04/14/2014	*	0	0	0	2	0	---	---	0	---	1,382
04/15/2014	*	0	0	0	0	0	---	---	5	96	568
04/16/2014	*	0	0	0	0	0	---	0	5	---	3,245
04/17/2014	*	0	0	0	1	0	---	---	6	493	5,799
04/18/2014	*	0	0	0	1	0	---	---	3	---	5,299
04/19/2014	*	0	0	0	0	0	---	0	3	89	4,696
04/20/2014	*	0	0	0	1	0	---	---	16	---	5,426
04/21/2014	*	0	0	0	0	0	---	---	8	1,203	7,710
04/22/2014	*	---	0	0	8	0	287	0	9	---	9,462
04/23/2014	*	---	0	0	7	278	---	---	4	1,226	7,258
04/24/2014	*	---	---	0	---	825	---	---	9	---	10,923
04/25/2014		---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>1,103</b>	<b>287</b>	<b>0</b>	<b>76</b>	<b>3,124</b>	<b>65,056</b>
<b># Days:</b>		<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>79</b>	<b>96</b>	<b>0</b>	<b>5</b>	<b>446</b>	<b>4,647</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>1,173</b>	<b>287</b>	<b>0</b>	<b>93</b>	<b>3,124</b>	<b>76,992</b>

<b>COMBINED STEELHEAD</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
04/11/2014	*	78	248	114	26	5,018	---	---	0	1,164	415
04/12/2014	*	110	130	87	77	6,058	5,331	---	3	---	738
04/13/2014	*	257	118	---	114	9,260	---	59	25	2,313	0
04/14/2014	*	215	97	43	134	7,570	---	---	21	---	692
04/15/2014	*	301	140	76	151	8,852	---	---	14	2,742	1,602
04/16/2014	*	60	75	14	99	28,190	---	---	27	---	1,584
04/17/2014	*	145	89	2	78	18,631	13,392	---	9	3,751	559
04/18/2014	*	220	310	23	194	30,252	---	---	15	---	1,137
04/19/2014	*	113	291	42	56	37,767	---	1,003	25	13,471	1,621
04/20/2014	*	182	262	35	58	66,155	---	---	18	---	1,884
04/21/2014	*	298	330	6	295	47,282	---	---	36	13,110	1,367
04/22/2014	*	---	419	152	808	42,851	139,470	1,314	27	---	1,720
04/23/2014	*	---	1,188	245	589	131,998	---	---	31	11,037	1,651
04/24/2014	*	---	---	53	---	127,642	---	---	54	---	1,311
04/25/2014		---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>1,979</b>	<b>3,697</b>	<b>892</b>	<b>2,679</b>	<b>567,526</b>	<b>158,193</b>	<b>2,460</b>	<b>305</b>	<b>47,588</b>	<b>16,281</b>
<b># Days:</b>		<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>
<b>Average:</b>		<b>180</b>	<b>284</b>	<b>69</b>	<b>206</b>	<b>40,538</b>	<b>52,731</b>	<b>615</b>	<b>22</b>	<b>6,798</b>	<b>1,163</b>
<b>YTD</b>		<b>2,080</b>	<b>11,521</b>	<b>1,081</b>	<b>2,899</b>	<b>633,545</b>	<b>164,379</b>	<b>2,878</b>	<b>330</b>	<b>48,697</b>	<b>19,030</b>

## Two-Week Summary of Passage Indices

<b>COMBINED SOCKEYE</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)	
04/11/2014 *	0	0	0	0	1,130	---	---	447	51	0	376	
04/12/2014 *	0	0	0	0	1,065	1,071	---	1,239	---	14	482	
04/13/2014 *	0	0	---	0	2,655	---	14	1,396	287	29	324	
04/14/2014 *	0	0	0	0	1,859	---	---	373	---	29	692	
04/15/2014 *	0	0	0	0	1,623	---	---	350	479	60	310	
04/16/2014 *	0	0	0	0	1,890	---	17	1,272	---	93	441	
04/17/2014 *	0	0	0	0	2,258	3,876	---	1,320	1,681	92	353	
04/18/2014 *	0	0	0	0	1,997	---	---	617	---	101	444	
04/19/2014 *	0	0	0	0	572	---	224	256	2,318	162	447	
04/20/2014 *	0	0	0	0	0	---	---	315	---	172	205	
04/21/2014 *	0	0	0	0	1,424	---	---	201	9,462	229	682	
04/22/2014 *	---	0	0	0	1,911	1,721	128	227	---	826	479	
04/23/2014 *	---	0	0	0	2,506	---	---	161	16,125	520	822	
04/24/2014 *	---	---	0	---	2,476	---	---	465	---	377	655	
04/25/2014	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23,366</b>	<b>6,668</b>	<b>383</b>	<b>8,639</b>	<b>30,403</b>	<b>2,704</b>	<b>6,712</b>	
<b># Days:</b>	<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>	
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,669</b>	<b>2,223</b>	<b>96</b>	<b>617</b>	<b>4,343</b>	<b>193</b>	<b>479</b>	
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>41,672</b>	<b>7,290</b>	<b>410</b>	<b>10,899</b>	<b>30,405</b>	<b>2,908</b>	<b>16,463</b>	

<b>COMBINED LAMPREY JUVENILES</b>												
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Samp)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)	
04/11/2014 *	0	0	0	0	0	---	---	0	120	250	30	
04/12/2014 *	0	0	0	0	0	100	---	1	---	190	193	
04/13/2014 *	0	0	---	0	0	---	0	0	560	245	857	
04/14/2014 *	0	0	0	0	0	---	---	0	---	270	429	
04/15/2014 *	0	0	0	0	0	---	---	0	600	100	20	
04/16/2014 *	0	0	0	0	0	---	1	0	---	152	40	
04/17/2014 *	0	0	0	0	0	50	---	0	100	168	0	
04/18/2014 *	0	0	0	0	0	---	---	0	---	320	10	
04/19/2014 *	0	0	0	0	0	---	0	0	50	201	0	
04/20/2014 *	0	0	0	0	0	---	---	0	---	120	133	
04/21/2014 *	0	0	0	0	0	---	---	0	100	180	67	
04/22/2014 *	---	0	0	0	0	0	10	0	---	320	0	
04/23/2014 *	---	0	0	0	0	---	---	0	200	200	4	
04/24/2014 *	---	---	0	---	0	---	---	0	---	150	0	
04/25/2014	---	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>11</b>	<b>1</b>	<b>1,730</b>	<b>2,866</b>	<b>1,783</b>	
<b># Days:</b>	<b>11</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>	
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>3</b>	<b>0</b>	<b>247</b>	<b>205</b>	<b>127</b>	
<b>YTD</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>162</b>	<b>17</b>	<b>5</b>	<b>1,830</b>	<b>9,430</b>	<b>11,584</b>	

## Two-Week Summary of Passage Indices

\* See sampling comments <http://www.fpc.org/currentDaily/smpcomments.htm>

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

Two classes of fish counts are shown in these tables:

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

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

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

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

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period

that spans two calendar days. In this report, the date shown corresponds with the sample end date.

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

† In 2013 it was confirmed that juvenile lamprey can escape the sample tank at LGR which would lead to unreliable estimates of collection.

Therefore, only sample counts are provided in this report.

### Definitions for Smolt Index Counts

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

IMN (Collection) = Imnaha River Trap : Collection Counts

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Two Week Transportation Summary

Source: Fish Passage Center

Updated:

4/25/14 7:15 AM

**04/11/14                      TO                      04/25/14**

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	4,200	668,816		800	398,734	16,700	1,089,250
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	4,193	667,283		800	398,416	16,683	1,087,375
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	7	44		0	8	9	68
	Sum of FacilityMorts	0	16		0	2	8	26
	Sum of ResearchMorts	0	13		0	3	0	16
	Sum of TotalProjectMorts	7	73		0	13	17	110
<b>LGS</b>	Sum of NumberCollected	226	110,896		200	110,293	4,650	226,265
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	225	110,892		200	110,290	4,650	226,257
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	1		0	1	0	2
	Sum of FacilityMorts	1	3		0	2	0	6
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	1	4		0	3	0	8
<b>LMN</b>	Sum of NumberCollected		2,836			1,493	230	4,559
	Sum of NumberBarged		0			0	0	0
	Sum of NumberBypassed		2,834			1,493	230	4,557
	Sum of Numbertrucked		0			0	0	0
	Sum of SampleMorts		2			0	0	2
	Sum of FacilityMorts		0			0	0	0
	Sum of ResearchMorts		0			0	0	0
	Sum of TotalProjectMorts		2			0	0	2
<b>MCN</b>	Sum of NumberCollected	1,300	56,800	1,760	26,887	17,317		104,064
	Sum of NumberBarged	0	0	0	0	0		0
	Sum of NumberBypassed	1,299	56,632	1,760	26,835	17,279		103,805
	Sum of Numbertrucked	0	0	0	0	0		0
	Sum of SampleMorts	1	10	0	2	6		19
	Sum of FacilityMorts	0	158	0	50	32		240
	Sum of ResearchMorts	0	0	0	0	0		0
	Sum of TotalProjectMorts	1	168	0	52	38		259
Total Sum of NumberCollected		5,726	839,348	2,760	537,407	38,897		1,424,138
Total Sum of NumberBarged		0	0	0	0	0		0
Total Sum of NumberBypassed		5,717	837,641	2,760	537,034	38,842		1,421,994
Total Sum of Numbertrucked		0	0	0	0	0		0
Total Sum of SampleMorts		8	57	0	11	15		91
Total Sum of FacilityMorts		1	177	0	54	40		272
Total Sum of ResearchMorts		0	13	0	3	0		16
Total Sum of TotalProjectMorts		9	247	0	68	55		379

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/25/14 7:15 AM

TO: 04/25/14

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	6,600	793,186	870	32,050	452,474	1,285,180
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	6,581	791,634	870	32,011	452,153	1,283,249
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	19	60	0	30	11	120
	Sum of FacilityMorts	0	19	0	9	2	30
	Sum of ResearchMorts	0	13	0	0	3	16
	Sum of TotalProjectMorts	19	92	0	39	16	166
<b>LGS</b>	Sum of NumberCollected	226	113,695	200	5,114	114,852	234,087
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	225	113,687	200	5,110	114,848	234,070
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	0	5	0	4	2	11
	Sum of FacilityMorts	1	3	0	0	2	6
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	8	0	4	4	17
<b>LMN</b>	Sum of NumberCollected		2,998		248	1,764	5,010
	Sum of NumberBarged		0		0	0	0
	Sum of NumberBypassed		2,992		248	1,762	5,002
	Sum of NumberTrucked		0		0	0	0
	Sum of SampleMorts		2		0	0	2
	Sum of FacilityMorts		0		0	0	0
	Sum of ResearchMorts		0		0	0	0
	Sum of TotalProjectMorts		2		0	0	2
<b>MCN</b>	Sum of NumberCollected	1,370	57,081	1,760	17,318	27,617	105,146
	Sum of NumberBarged	0	0	0	0	0	0
	Sum of NumberBypassed	1,369	56,912	1,760	17,279	27,565	104,885
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	10	0	6	2	19
	Sum of FacilityMorts	0	159	0	33	50	242
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	1	169	0	39	52	261
Total Sum of NumberCollected		8,196	966,960	2,830	54,730	596,707	1,629,423
Total Sum of NumberBarged		0	0	0	0	0	0
Total Sum of NumberBypassed		8,175	965,225	2,830	54,648	596,328	1,627,206
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		20	77	0	40	15	152
Total Sum of FacilityMorts		1	181	0	42	54	278
Total Sum of ResearchMorts		0	13	0	0	3	16
Total Sum of TotalProjectMorts		21	271	0	82	72	446

Cumulative Adult Passage at Mainstem Dams Through: 04/24

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	04/24	29626	195	7664	194	25808	160	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/24	12427	101	2757	86	14365	71	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/24	7469	100	1759	90	10285	57	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/24	2287	32	741	8	5497	42	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/24	1237	9	477	11	3098	8	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/24	777	7	230	11	1790	2	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/24	437	9	167	7	1011	14	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/24	228	1	94	12	655	3	0	0	0	0	0	0	0	0	0	0	0	0
PRD	04/23	47	0	37	0	197	0	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	04/23	3	0	15	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH	04/23	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	04/23	2508	12	2117	64	3458	15	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.	10-Yr Wild		Wild	10-Yr	10-Yr		10-Yr		
		Adult	Jack	Adult	Jack	Adult	Jack	2014	2013	Avg.	2014	2013	Avg.	2014	2013	Avg.	2014	2013	Avg.
BON	04/24	5	-2	0	0	0	0	3	0	0	3597	2496	3299	1122	775	936	1	-1	0
TDA	04/24	0	0	0	0	0	0	0	1	0	305	578	2092	127	283	802	0	0	0
JDA	04/24	0	1	0	0	0	0	0	0	0	2714	686	4357	1070	386	1380	-1	0	0
MCN	04/24	0	0	1	0	1	0	0	0	0	460	1251	5142	292	625	1701	3	1	0
IHR	04/24	0	0	0	0	0	0	0	0	0	1300	3563	4271	635	1412	1226	0	3	0
LMN	04/24	0	0	0	0	0	0	1	0	0	1025	2160	6233	671	1214	2548	0	0	0
LGS	04/24	0	0	0	0	0	0	0	0	0	1028	1877	6195	691	1006	1998	0	1	0
LGR	04/24	0	0	0	0	0	0	0	0	0	6953	6948	8107	3116	2928	2701	0	0	0
PRD	04/23	0	0	0	0	0	0	0	0	0	40	18	15	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	04/23	0	0	0	0	0	0	0	0	0	131	33	42	77	20	23	0	0	0
RRH	04/23	0	0	0	0	0	0	0	0	0	107	61	163	67	54	124	0	0	0
WEL		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WFA	04/23	9	0	2	0	0	0	0	0	0	5309	6285	7113	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.