

# Fish Passage Center

## Weekly Report #15–12

June 5, 2015

### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 127% and 390% of average at individual sub-basins over early June. Precipitation above The Dalles has been 266% of average over early June. Over the 2015 water year, precipitation has ranged between 79% and 104% of average.

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

Location	Water Year 2015 June 1–3, 2015		Water Year 2015 October 1, 2014 to June 3, 2015	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia above Coulee	1.14	353	29.5
Snake River above Ice Harbor	0.29	173	15.4	84
Columbia above The Dalles	0.55	266	19.9	90
Kootenai	1.42	390	30.5	104
Clark Fork	0.46	187	17.2	80
Flathead	1.13	361	26.6	95
Pend Oreille River Basin above Waneta Dam	0.82	292	22.9	95
Salmon River Basin	0.51	208	19.0	83
Upper Snake Tributaries	0.22	127	17.2	79
Clearwater	0.71	238	29.2	86
Willamette River above Portland	0.46	186	48.6	83

Snowpack within the Columbia Basin has been well below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 14% of average. For Snake River Basins the average snowpack is 10% of average. For lower Columbia Basins between McNary and Bonneville Dam average snowpack is 0% of average.

Table 2 displays the June 4<sup>th</sup> ESP runoff volume forecasts for multiple reservoirs along with the May COE forecasts at Libby and Dworshak. The June 4<sup>th</sup> ESP forecast at The Dalles between April and August is 61,545 Kaf (70% of average).

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

Location	May 28, 2015 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	70	61,545
Grand Coulee (Apr–Aug)	78	44,168
Libby Res. Inflow, MT (Apr–Aug)	81 92*	4,784 5,396*
Hungry Horse Res. Inflow, MT (Apr–Aug)	71	1,376
Lower Granite Res. Inflow (Apr–July)	54	10,761
Brownlee Res. Inflow (Apr–July)	43	2,369
Dworshak Res. Inflow (Apr–July)	49 54*	1,186 1,325*

\* Denotes COE May Forecast

Grand Coulee Reservoir is at 1,260.0 feet (6-4-15) and has refilled 9.5 feet over the last week. Outflows at Grand Coulee have ranged between 80.0 and 109.7 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2,431.4 feet (6-4-15) and has refilled 5.9 feet over the previous week. Daily average outflows at Libby Dam have been 17.0 to 23.9 Kcfs over the last week.

Hungry Horse is currently at an elevation of 3,545.7 feet (6-4-15) and refilled 3.1 feet over the last week. Outflows at Hungry Horse have been 3.2 to 4.8 Kcfs over the last week.

Dworshak is currently at an elevation of 1,599.3 feet (6-4-15) and refilled 2.6 feet over the last week; Dworshak is 0.7 feet from full. Outflows have ranged from 1.5 to 3.8 Kcfs over the last week. Inflows to Dworshak have ranged between 5.1 and 7.4 Kcfs last week.

The Brownlee Reservoir was at an elevation of 2,075.2 feet on June 4, 2015, and has refilled 0.9 feet over the last week. Hells Canyon outflows have ranged between 9.2 and 20.5 Kcfs over the last 4 days.

The Biological Opinion flow period began on April 3rd in the lower Snake River (Lower Granite). According to the April Final Water Supply Forecast (April 8, 2015), the flow objective this spring will be 85 Kcfs at Lower Granite. Flows at Lower Granite Dam have averaged 55.9 Kcfs over the spring season and 63.3 Kcfs last week.

Based on the April Final Water Supply Forecast, the Spring Biological Opinion Flow Objectives (which began April 10<sup>th</sup>) will be 220 Kcfs at McNary Dam and 135 Kcfs at Priest Rapids Dam. Over the spring season, flows at McNary Dam have averaged 179.9 Kcfs. Priest Rapids Dam flows have averaged 116.3 Kcfs. Over the last week, flows have averaged 194.7 Kcfs at McNary and 123.8 Kcfs at Priest Rapids.

### Spill

The 2015 spring fish spill program was implemented at the lower Snake River projects beginning on April 3<sup>rd</sup>, and beginning April 10<sup>th</sup> at the middle Columbia River projects.

All of the lower Snake River projects have spilled at the 2015 Fish Operations Plan (FOP) levels over the past week. The gas cap at Lower Monumental Dam remained at about 23 Kcfs over the past week in response to the total dissolved gas (TDG) levels measured at the Ice Harbor forebay. On April 28<sup>th</sup> the “test-like” conditions, where spill alternates between 30% instantaneous and 45 Kcfs/Gas Cap, were initiated at Ice Harbor Dam. The net effect of this operation is a decrease in spill levels during the “test-like” period.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	<b>April 3-27:</b> 45 Kcfs/Gas Cap <b>April 28-June 20:</b> 30%/30% vs. 45 kcfs/Gas Cap

Since spill began on April 10<sup>th</sup>, spill for fish passage at the middle Columbia River projects occurred at the following amounts described in the 2015 FOP (the testing of two spill levels at John Day Dam began on April 28<sup>th</sup>).

Project	Spill Level Day/Night
McNary	40%/40%
John Day	<b>April 10-April 28:</b> 30%/30% <b>April 28-June 15:</b> 30%/30% and 40%/40%
The Dalles	40%/40%
Bonneville	100 Kcfs/100 Kcfs

TDG measurements exceeded the waiver limits (115%) at the Ice Harbor Dam forebay monitor on some days this past week. At Ice Harbor Dam, the forebay gage often reads higher than the upstream tailrace gage and higher than the downstream gage at the project, and it is unlikely that these occurrences are related to spill. The forebay monitor reading at Ice Harbor is more likely a function of water temperature than the TDG level at the upstream project. However, spill at Lower Monumental was maintained at about 23 Kcfs over the week to address the TDG issue. **Note:** The State of Oregon and the State of 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. The location of a TDG 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 middle Columbia River forebay monitors. On any given day the compliance of the tailrace monitors at the middle Columbia River projects will be determined using either

the Washington or Oregon methodology, whichever is the most restrictive, and spill will 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. Monitoring at Lower Granite Dam ended for the season due to low fish numbers. Over the past week one percent of the sample was observed with minor signs of GBT at McNary Dam on June 3<sup>rd</sup>. Minor signs were also seen at Rock Island Dam (one percent on June 2<sup>nd</sup>, and three percent on June 4<sup>th</sup>). These levels are far below the 15% criteria for action to be taken.

### Smolt Monitoring

All Smolt Monitoring Program bypass facilities continued sampling this week. Sampling at the Snake River Trap at Lewiston and Salmon River Trap at Whitebird has been terminated for the season. Sampling at the Grande Ronde River Trap ended May 29. Sampling at the Imnaha River Trap will continue.

This week's samples at Bonneville Dam (BON) were roughly equal numbers of all species except sockeye, based on the average passage indices for the week. This week's average passage index for yearling Chinook juveniles was 4,500 compared to last week when the daily average passage index was about 20,000 per day. Steelhead passage also decreased this week, when compared to the previous week. This week's daily average passage index for steelhead was about 4,800 per day whereas that for last week was about 16,700. The daily average passage index for coho this week was about 5,600, which was much lower than the 16,700 value for last week. Sockeye indices also decreased this week from an average index of about 9,600 last week to 1,600 this week. Subyearling Chinook passage was very similar to last week. This week's daily average passage indices were 5,300 compared to 5,200 per day last week. Finally, Pacific lamprey ammocoetes were encountered in one of this week's samples (June 2), while macrophthalmia were encountered on two dates (June 2 and 3).

Subyearling Chinook dominated this week's salmonid collections at John Day Dam (JDA).

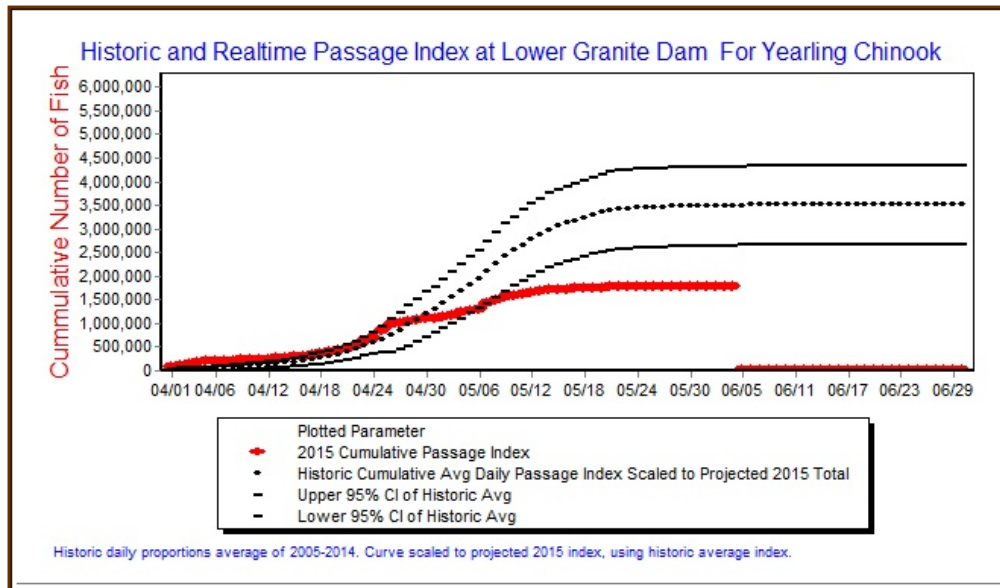
Subyearling Chinook passage increased substantially this week. This week's daily average passage index for subyearling Chinook was about 4,100 per day. Last week's passage index was about 2,350 per day. The daily average passage index for yearling Chinook this week was about 1,500 fish per day, which is a large decrease compared to last week's daily average passage index of about 11,600. Passage of steelhead and sockeye decreased this week also. This week's daily average passage indices were about 1,600 and 675, respectively. Last week's passage indices were 4,900 for steelhead and 4,400 for sockeye. Coho passage decreased this week, when compared to the previous week. This week's daily average passage index for coho was nearly 700, whereas that for last week was about 2,900. Finally, Pacific lamprey macrophthalmia were encountered every day this week, with a daily average collection of about 490 per day. This is a decrease compared to last week's daily average collection of about 750 macrophthalmia per day.

Since McNary Dam (MCN) is no longer a transportation site, sampling takes place every other day for the entire SMP season. This week's samples at MCN were dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was about 6,000. This daily average passage index is a decrease from the previous week. Last week's daily average passage index was about 21,300 for yearling Chinook. Steelhead indices were also down, with the average index this week at 3,100 compared to 17,000 last week. Passage of coho, and sockeye decreased this week. This week's daily average passage indices were about 2,600, and nearly 10,000 per day, respectively. Last week's daily average passage indices were about 1,900 for coho, and 9,900 for sockeye. Subyearling Chinook average daily index increased this week compared to last week. This week's daily average passage index for subyearling Chinook was about 3,400. This daily average passage index is an increase from the previous week's average of 1,900 per day average. Finally, Pacific lamprey macrophthalmia were encountered in three of this week's four samples. The daily average collection for lamprey macrophthalmia this week was about 200.

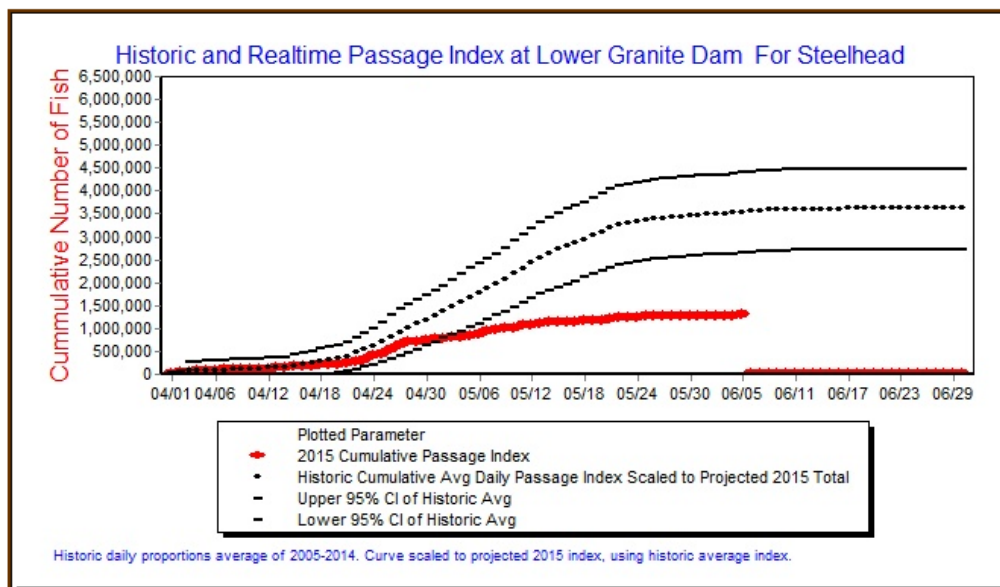
This week's samples at Lower Granite Dam (LGR) were again dominated by subyearling Chinook juveniles. This week's daily average passage index

for subyearling Chinook at LGR was about 38,700 per day. The increase in subyearling Chinook passage this week is largely due to hatchery releases above LGR in recent weeks. However, a large proportion of hatchery subyearlings released above LGR are unmarked and, therefore, it is difficult to determine what proportion of the sample at LGR is of hatchery origin. Passage of yearling Chinook and steelhead continued to decrease this week. This week's daily average passage indices were about 170 and 2,800 per day, respectively. Last week's daily average passage indices were 2,000 for yearling Chinook and 8,500 for steelhead. Based on

the cumulative passage indices at LGR for yearling Chinook (Figure 1) and steelhead (Figure 2), the 2015 outmigration appears to be much lower than the historic average (2005–2014). Sockeye and coho passage decreased this week when compared to previous weeks. This week there were no sockeye in the samples while the passage indices were about 74 for coho. Last week's daily average passage indices for these two species were about 63 and 700, respectively. Finally, Pacific lamprey ammocoetes were encountered in one of this week's samples. The sample on May 29 had Pacific lamprey ammocoetes.



**Figure 1.** Cumulative passage index for yearling Chinook at Lower Granite Dam in 2015 (red dots) versus the 10-year average (2005–2014) (black dots). The 95% confidence interval around the 10-year average is indicated by the black hash marks. 2015 data are through June 4<sup>th</sup>.



**Figure 2.** Cumulative passage index for steelhead at Lower Granite Dam in 2015 (red dots) versus the 10-year average (2005–2014) (black dots). The 95% confidence interval around the 10-year average is indicated by the black hash marks. 2015 data are through June 4<sup>th</sup>.

Sampling at Little Goose Dam (LGS) was limited to a 24-hour sample every other day from April 2<sup>nd</sup> to April 30<sup>th</sup>. Little Goose Dam began collecting fish for transportation on May 1<sup>st</sup> and, therefore, collections at LGS are every day for the rest of the season. Subyearling Chinook dominated this week's samples at LGS. This week's daily average passage index for subyearling Chinook at LGS was about 24,000 fish per day, which is an increase compared to last week's daily average passage index of about 5,300 per day. Yearling Chinook passage continued to decrease this week. This week's daily average passage index for yearling Chinook at LGS was about 400, whereas that for last week was nearly 2,700 per day. Coho and sockeye passage also decreased this week. This week's daily average passage indices for these two species were 300 and 20, respectively. Last week's daily average passage indices were about 1,200 for coho and 130 for sockeye. Steelhead passage indices decreased as well this week. This week's daily average passage index for steelhead was about 3,800, whereas that for last week was about 12,500. Finally, Pacific lamprey macrophthalmia were encountered in two of this week's samples, with an estimated collection of 150–175 over both days.

Sampling at Lower Monumental Dam (LMN) was limited to a 24-hour sample every third day from April 4<sup>th</sup> to April 13<sup>th</sup> and every other day from April 15<sup>th</sup> to May 1<sup>st</sup>. At 1500 on May 1<sup>st</sup>, LMN began collecting fish for transportation and, therefore, collections at LMN are every day for the rest of the season. This week's samples at LMN were dominated by subyearling Chinook, with a daily average passage index of about 8,600 per day. This week's daily average passage index for subyearling Chinook is an increase over last week's daily average passage index of about 1,300. Passage of yearling Chinook, coho, steelhead and sockeye all decreased this week when compared to last week. This week's daily average passage indices for these four species were about 340, 470, 1,300 and 5, respectively. Last week's daily average passage indices were 1,500 for yearling Chinook, 650 for coho, 3,700 for steelhead and 150 for sockeye. Unlike LGR and LGS, passage of subyearling Chinook at LMN decreased slightly this week, when compared to the previous week. Finally, Pacific lamprey ammocoetes were encountered in six of seven of this week's samples. The average estimated daily collection was 140 fish.

This week's samples at Rock Island Dam (RIS) were dominated by coho juveniles, with a daily average passage index of just over 480 fish per day. This was a decrease compared to last week's daily average passage index of about 700 per day. Yearling Chinook passage decreased this week when compared to last week. This week's passage index for yearling Chinook was 133 per day, whereas that for last week was about 300 per day. This week's daily average passage index for steelhead was about 200 per day, which is about half of that from last week. Sockeye passage this week was relatively low, with daily average passage index of 5 fish. Subyearling Chinook indices increased this past week. The average daily index for subyearling Chinook this week was nearly 210 compared to last week's average index of 30. Finally, one Pacific lamprey ammocoete was encountered in the May 31<sup>st</sup> sample.

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. Due to the release of approximately 400,000 hatchery subyearling fall Chinook into the Grande Ronde River on May 18<sup>th</sup>, collections at the GRN were suspended from May 19<sup>th</sup> through May 26<sup>th</sup>. This suspension was an effort to avoid handling these listed hatchery fish. Sampling resumed on the morning of May 26<sup>th</sup> for the May 27<sup>th</sup> sample. Collections in the samples from May 27<sup>th</sup> and 28<sup>th</sup> were dominated by subyearling Chinook. Subyearling Chinook collections on these days were 89 and 66, respectively. Only a few yearling Chinook and steelhead were encountered in these two samples. Sampling at GRN was terminated for the season on May 29.

Sampling at the Salmon River Trap at Whitebird (WTB) was terminated for the season after the May 22<sup>nd</sup> sample. Sampling at the Snake River Trap at Lewiston (LEW) was terminated after the May 19<sup>th</sup> sample. However, since sampling was terminated on May 19<sup>th</sup>, LEW has been allowing fish to pass through, in an effort to collect PIT-tag interrogation data. This PIT-tag interrogation effort ended last week.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Sampling at IMN is year-round however the FPC typically receives data only from early March through June. Due to the remote nature of the trap, the Nez

Perce Tribe is able to send collection data to the FPC only periodically. Therefore, data for IMN may be several days behind. To date, we have received data through June 2<sup>nd</sup>. Over the last week of available data (May 27–June 2), collections at IMN were dominated by steelhead, with a daily average collection of about 130 fish per day. This is a decrease compared to the daily average collection from the previous week of data (May 19–May 26), which was about 900 per day. Over the May 27–June 2 period, approximately 66% of the steelhead collected at IMN were of known hatchery origin. Yearling Chinook passage increased over the May 27–June 2 period, when compared to the previous 7-day period. Over the May 27–June 2 period, the daily average collection for yearling Chinook was about 37, whereas that for the May 19–May 26 period was about 23 per day. Finally, subyearling Chinook juveniles were encountered 5 of the 7 days sampled in the May 27–June 2 period, although sample counts only average 2 fish per day during that time period.

### 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. To date, the Fish Passage Center has not received complete preliminary hatchery release data from the Nez Perce Tribe for 2015 releases. Therefore, release estimates discussed for this zone are likely underestimates, as they do not include all releases conducted by the tribe. Release data from the Nez Perce Tribe will be entered into our database as soon as we receive them.

Approximately 918,000 subyearling fall Chinook juveniles were scheduled for release into this zone this week. These subyearlings were all scheduled to be released from the Nez Perce Tribal Hatchery on the Clearwater River. A large proportion (35%) of these subyearling fall Chinook are expected to be unmarked. In addition, approximately 880,000 subyearling fall Chinook juveniles are scheduled for release to this zone over the next 2 weeks. Of these, about 75% will be released into tributaries of the Clearwater River while the remaining 25% will be released from an acclimation facility on the Snake River above Lower Granite Dam.

As with previous releases of Snake River subyearling fall Chinook, a large proportion (30%) of these subyearlings are expected to be unmarked.

**Mid-Columbia Zone:** The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. To date, the Fish Passage Center has not received complete preliminary hatchery release data from the Colville Tribe for 2015 releases. Therefore, release estimates discussed for this zone are likely underestimates, as they do not include all releases conducted by the tribe, including releases from the new Chief Joseph Hatchery. Release data from the Colville Tribe will be entered into our database as soon as we receive them.

Two new releases were scheduled for this zone this week. The first of these releases was of about 225 unmarked subyearling fall Chinook to Crab Creek. This release is part of the WDFW Cooperative Program and was scheduled to take place on or around June 1<sup>st</sup>. The second was a release of approximately 111,000 unmarked subyearling fall Chinook to the Yakima River that was also scheduled to occur on or around June 1<sup>st</sup>. Approximately 10.8 million subyearling fall Chinook juveniles are scheduled to be released into this zone over the next 2 weeks. Of these, about 68% will be released from Priest Rapids Hatchery while the remaining 32% will be released from Ringold Springs Hatchery. Both of these releases were expected to begin on or around June 10<sup>th</sup>. A large portion (31%) of these subyearlings will be marked with otolith marks, which means that they will not be distinguishable from wild fish.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. Approximately 4.0 million subyearling fall Chinook were scheduled to be released into the Klickitat River on or around June 1<sup>st</sup>. This was the only release that was scheduled for this zone this week. There are no new releases for this zone over the next 2 weeks.

## Adult Passage

The summer Chinook count began June 1st at Bonneville Dam. Daily passage numbers at Bonneville Dam ranged between 2,528 and 3,131 adult summer Chinook in the last week. The 2015 summer Chinook count of 10,592 is about 1.2 times greater than the 2014 count and 1.6 times greater than the 10-year average. The 2015 Bonneville Dam summer Chinook jack count of 1,025 is 77.7% of the 2014 count and about 73% of the 10-year average count. A total of 220,480 adult spring Chinook have been counted at Bonneville Dam this year. In 2014, 188,083 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2015 adult spring Chinook count at Bonneville Dam is about 1.2 times greater than the 2014 count and 1.7 times greater than the 10-year average count of 132,065. The 2015 spring Chinook jack count of 13,314 is about 51% of the 2014 count of 26,094 and 55.5% of the 10-year average count of 23,978. At Willamette Falls, 43,001 adult spring Chinook have been counted so far this year. In 2014, 19,198 adult spring Chinook were counted at Willamette Falls. This year's count is about 2.2 times greater than the 2014 count and 2.1 times greater than the 10-year average count of 20,499. As of June 4th, a total of 194,116 adult spring Chinook have been counted at The Dalles Dam and 151,261 have been counted at McNary Dam. The Dalles Dam 2015 adult spring Chinook count is 1.4 times greater than 2014 and 1.9 times greater than the 10-year average count. The 2015 McNary Dam adult spring Chinook count is about 1.5 times greater than the 2014 count and twice the 10-year average count.

The 2015 Bonneville Dam adult steelhead count of 5,465 has 651 fewer fish than the 2014 count of 6,116 and 267 fewer fish than the 10-year average count of 5,732. The 2015 Bonneville Dam adult wild steelhead count of 2,642 is about 1.7 times greater than the 2014 count of 1,582 and 1.8 times greater than the 10-year average count of 1,473. Daily adult steelhead counts at Lower Granite Dam ranged from 1 to 4 adults per day last week. This year's Lower Granite steelhead count of 9,185 is about 1.2 times greater than the 2014 count of 7,487 and has 386 more fish than the 10-year average count of 8,799. The 2015 Lower Granite Dam adult wild steelhead count of 4,345 is 1.3 times greater than

the 2014 count of 3,459 and is about 1.3 times greater than the 10-year average count of 3,237. At Willamette Falls, the 2015 count for steelhead was 5,922 as of May 29th. This year's steelhead count is about 51.2% of the 2014 count of 11,573 and about 46.7% of the 10-year average count of 12,689.

Daily adult sockeye passage numbers at Bonneville Dam ranged between 50 and 429 last week. The 2015 adult sockeye count at Bonneville Dam of 1,289 is 4.2 times greater than the 2014 count and 3.8 times greater than the 10-year average count.

## Hatchery Releases Last Two Weeks

Hatchery Release Summary									
		From: 5/23/2015		to 06/05/15					
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	378,000	06-04-15	06-16-15	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	540,000	06-04-15	06-15-15	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>918,000</b>				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2015	240,000	04-06-15	06-15-15	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>240,000</b>				
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	175	05-15-15	05-31-15	Wenatchee River	Wenatchee River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	225	06-01-15	06-01-15	Crab Creek	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	2,575	05-15-15	05-31-15	Above McNary Dam	Mid-Columbia River
Washington Dept. of Fish and Wildlife	COOP	CH0	FA	2015	17,000	05-15-15	05-31-15	Yakama River	Yakama River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2015	85,000	04-20-15	05-31-15	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH0	SU	2015	484,000	05-25-15	05-31-15	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2015	160,000	05-01-15	05-31-15	Wells Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>748,975</b>				
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	98,105	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	143,770	04-15-15	06-01-15	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2015	236,749	04-15-15	06-01-15	Easton Pond	Yakima River
Yakama Tribe	Klickitat Hatchery	CH0	FA	2015	4,000,000	06-01-15	06-01-15	Klickitat River	Klickitat River
Yakama Tribe	Marion Drain Hatchery	CH0	FA	2015	111,000	06-01-15	06-01-15	Nelson Springs	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	71,382	04-15-15	06-01-15	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	90,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	100,210	04-15-15	06-01-15	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	103,375	04-15-15	06-01-15	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2015	250,000	04-15-15	06-01-15	Prosser Acclim Pond	Yakima River
<b>Yakama Tribe Total</b>					<b>5,204,591</b>				
<b>Grand Total</b>					<b>7,111,566</b>				



## Hatchery Releases Next Two Weeks

**Hatchery Release Summary**  
From: **6/6/2015** to **6/18/2015**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	330,000	06-13-15	06-13-15	Cedar Flats Acclim.	Selway River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	330,000	06-13-15	06-13-15	Lukes Gulch Acclim.	S Fk Clearwater River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	378,000	06-04-15	06-16-15	Nez Perce Tribal Hatchery	Clearwater River M F
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH0	FA	2015	540,000	06-04-15	06-15-15	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>1,578,000</b>				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2015	240,000	04-06-15	06-15-15	Deschutes River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>240,000</b>				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH0	FA	2015	220,000	06-12-15	06-12-15	Cpt John Acclim Pond	Snake River
Washington Dept. of Fish and Wildlife	Priest Rapids Hatchery	CH0	FA	2015	7,300,000	06-10-15	06-30-15	Priest Rapids Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	CH0	FA	2015	3,500,000	06-10-15	06-20-15	Ringold Springs Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>11,020,000</b>				
<b>Grand Total</b>					<b>12,838,000</b>				

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/22/2015	108.7	0.0	108.6	0.0	125.1	8.9	119.0	0.0	129.8	13.6	136.5	14.8	134.4	28.5
05/23/2015	115.7	0.0	113.6	0.0	130.6	9.1	125.9	0.0	138.0	13.3	142.0	17.6	138.7	29.1
05/24/2015	111.2	0.0	109.8	0.0	128.4	9.4	127.2	0.0	137.5	13.2	142.4	18.2	141.7	28.8
05/25/2015	106.8	0.0	107.9	0.0	126.8	8.4	121.0	0.0	132.6	13.3	141.4	20.0	141.8	27.9
05/26/2015	111.4	0.0	116.2	0.0	131.6	14.2	128.2	0.0	138.5	13.4	142.9	20.2	139.4	27.4
05/27/2015	108.6	0.0	100.9	0.0	123.1	8.4	118.3	0.0	128.7	13.2	146.8	16.7	148.2	28.2
05/28/2015	116.4	0.0	115.7	0.0	128.1	8.6	123.9	0.0	132.2	12.5	133.0	14.3	128.7	26.5
05/29/2015	109.7	0.0	109.8	0.0	125.2	10.0	121.3	0.0	132.6	13.4	135.9	14.7	133.6	28.0
05/30/2015	97.5	0.0	105.2	0.0	119.7	10.3	113.7	0.5	123.5	11.3	123.0	17.9	122.4	28.3
05/31/2015	105.0	0.0	103.7	0.0	119.6	10.7	115.3	1.3	125.2	11.3	128.8	21.8	125.2	28.9
06/01/2015	95.2	0.0	90.1	0.0	113.3	11.1	112.1	13.1	120.4	23.8	142.2	23.2	143.1	30.7
06/02/2015	80.0	0.0	84.4	0.0	100.2	8.2	97.1	11.4	101.9	25.0	111.8	17.9	124.3	25.8
06/03/2015	81.2	0.0	81.8	0.0	96.6	6.8	95.6	9.0	99.5	20.4	110.2	18.1	102.3	22.9
06/04/2015	98.1	0.0	98.8	0.0	113.8	7.8	110.2	8.9	115.5	21.2	120.9	18.1	115.9	25.8

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

Date	Dworshak		Brownlee Inflow	Hells Canyon	Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
05/22/2015	1.6	0.0	---	8.4	64.3	20.3	64.1	19.2	64.8	23.4	65.8	44.4
05/23/2015	1.5	0.0	---	8.4	64.3	20.4	61.5	18.4	62.0	22.9	62.8	50.7
05/24/2015	1.5	0.0	---	8.4	67.7	20.5	64.7	19.4	67.3	23.0	68.8	28.4
05/25/2015	1.5	0.0	---	8.3	66.1	20.4	64.6	19.4	64.8	23.9	64.1	19.2
05/26/2015	1.5	0.0	---	11.1	64.0	20.4	62.0	18.6	63.8	23.4	63.6	18.9
05/27/2015	1.5	0.0	---	14.8	64.2	20.4	63.4	19.0	65.2	23.8	63.9	19.2
05/28/2015	1.5	0.0	---	14.8	67.1	20.3	62.8	18.8	63.7	23.2	63.9	42.0
05/29/2015	1.5	0.0	---	14.2	63.6	20.4	62.8	18.7	64.3	24.0	65.8	49.6
05/30/2015	1.5	0.0	---	12.7	60.3	20.5	---	---	58.8	23.3	59.7	47.9
05/31/2015	1.5	0.0	---	15.0	61.0	20.3	58.4	17.5	59.6	23.4	60.6	47.3
06/01/2015	1.5	0.0	---	15.6	63.1	20.2	62.6	18.7	61.7	22.4	62.0	24.1
06/02/2015	1.5	0.0	---	14.2	63.4	20.4	61.7	18.3	61.4	23.2	62.7	18.9
06/03/2015	2.2	0.0	---	13.6	65.8	20.4	61.6	18.4	61.9	22.5	63.3	43.7
06/04/2015	3.8	0.0	---	11.6	65.9	20.2	64.7	19.4	66.1	23.4	66.7	50.2

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

Date	McNary		John Day		The Dalles		Bonneville		PH1	PH2
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill		
05/22/2015	213.1	85.7	201.8	60.6	187.1	74.6	202.1	99.2	0.0	90.4
05/23/2015	203.2	81.4	203.0	64.0	188.9	75.4	200.0	99.7	0.0	87.9
05/24/2015	220.7	88.6	223.8	89.0	207.1	82.6	213.2	100.2	4.9	95.7
05/25/2015	218.3	87.7	210.4	81.1	194.2	77.8	218.5	100.3	1.8	104.0
05/26/2015	212.2	85.3	211.9	63.4	196.7	78.4	213.7	99.9	0.0	101.4
05/27/2015	219.2	88.1	219.6	69.3	201.4	81.0	218.5	100.1	5.4	100.6
05/28/2015	209.3	84.4	212.0	84.5	197.9	79.1	215.1	99.5	0.3	102.9
05/29/2015	205.7	82.8	205.1	78.3	186.8	74.8	204.9	99.2	1.0	92.3
05/30/2015	197.6	79.4	181.4	54.5	166.2	66.8	173.4	99.9	1.0	60.2
05/31/2015	200.6	80.7	195.6	61.8	179.0	71.7	176.0	100.4	1.0	62.2
06/01/2015	202.6	81.2	196.0	78.5	182.3	72.7	201.2	100.0	5.5	83.3
06/02/2015	191.1	76.9	195.2	74.9	181.4	72.6	217.4	99.1	5.7	100.2
06/03/2015	180.3	72.7	176.3	53.1	161.8	64.7	178.7	99.6	1.0	65.7
06/04/2015	184.6	74.2	187.0	59.4	170.2	67.9	183.8	100.0	1.0	70.5

## 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>Little Goose Dam</b>											
	05/25/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/01/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Lower Monumental Dam</b>											
	05/27/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/03/15	Chinook + Steelhead	99*	0	0			0	0	0	0
<b>McNary Dam</b>											
	05/26/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/28/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/01/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/03/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
<b>Bonneville Dam</b>											
	05/23/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/26/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	05/30/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	06/02/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
<b>Rock Island Dam</b>											
	05/26/15	Chinook + Steelhead	100	0	0	0.00%	0.00%	0	0	0	0
	05/28/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/02/15	Chinook + Steelhead	100	1	1	1.00%	0.00%	1	0	0	0
	06/04/15	Chinook + Steelhead	100	3	3	3.00%	0.00%	3	0	0	0

\* Due to low fish numbers, sample size criteria were not met. Therefore, % fish with GBT not estimated for this sample day.

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

### Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
5/22	104.9	105.3	105.6	24	---	---	---	0	107.2	107.6	108.0	24	106.7	107.3	107.7	24	107.9	108.3	108.8	24
5/23	104.5	104.9	105.4	24	---	---	---	0	106.7	106.9	107.2	24	106.3	106.9	107.2	24	107.4	107.7	108.1	24
5/24	104.3	104.7	105.0	24	---	---	---	0	107.3	107.8	108.6	24	106.3	106.9	107.4	24	107.6	108.0	108.6	24
5/25	103.8	104.3	104.6	24	---	---	---	0	106.9	107.2	107.3	24	106.2	106.7	107.0	24	107.4	107.6	107.8	24
5/26	102.7	103.2	103.5	24	---	---	---	0	106.6	107.0	107.3	24	105.8	106.2	106.5	24	106.8	107.0	107.2	24
5/27	103.6	104.9	105.9	24	---	---	---	0	106.3	106.5	106.6	24	105.4	106.1	106.5	24	106.8	107.2	107.5	24
5/28	105.4	105.5	105.7	24	---	---	---	0	106.3	106.5	106.7	24	105.7	106.4	106.7	24	106.6	106.9	107.1	24
5/29	105.8	106.3	106.5	24	---	---	---	0	106.4	106.7	107.0	24	105.9	106.7	107.4	24	106.7	107.1	107.5	24
5/30	105.6	105.9	106.0	24	---	---	---	0	107.1	107.2	107.7	24	106.0	106.9	107.7	24	107.2	107.8	108.3	24
5/31	106.1	106.7	107.1	24	---	---	---	0	107.1	107.4	107.8	24	106.0	106.6	106.9	24	107.5	107.8	108.4	24
6/1	106.4	106.5	107.1	13	---	---	---	0	108.0	108.2	108.5	24	106.6	107.1	107.7	24	107.4	107.6	107.9	24
6/2	106.3	106.5	106.9	24	---	---	---	0	108.2	108.6	109.1	24	106.2	106.9	107.2	24	106.9	107.0	107.4	24
6/3	105.8	106.0	106.2	24	---	---	---	0	107.6	107.8	108.1	24	105.7	106.2	106.7	24	106.4	106.6	106.7	24
6/4	104.8	105.0	105.3	23	---	---	---	0	107.4	107.7	107.9	23	105.9	106.6	106.9	23	106.0	106.4	106.6	23

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

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
5/22	107.3	107.5	108.1	24	---	---	---	0	---	---	---	0	109.4	109.6	109.8	24	108.8	109.0	109.4	24
5/23	106.8	107.1	107.5	24	---	---	---	0	---	---	---	0	109.0	109.3	109.5	24	108.6	108.8	109.2	24
5/24	106.8	107.2	107.6	24	---	---	---	0	---	---	---	0	109.2	109.4	109.6	24	108.7	108.9	109.2	24
5/25	106.8	107.0	107.1	24	---	---	---	0	---	---	---	0	108.9	109.1	109.3	24	108.3	108.4	108.7	24
5/26	106.2	106.4	106.7	24	---	---	---	0	---	---	---	0	108.4	108.5	108.6	24	107.8	108.0	108.1	24
5/27	106.3	106.6	107.1	24	---	---	---	0	---	---	---	0	108.4	108.8	109.9	24	107.6	108.0	108.8	24
5/28	106.1	106.4	106.9	24	---	---	---	0	---	---	---	0	109.2	109.6	109.9	24	108.6	108.8	109.0	24
5/29	106.2	106.4	106.8	24	107.0	107.3	107.9	24	108.7	109.0	109.7	24	108.6	109.0	109.2	24	108.0	108.3	108.5	24
5/30	106.7	107.0	107.4	24	107.6	108.2	108.5	24	109.2	109.8	110.3	24	109.4	109.7	110.1	24	108.5	108.7	109.0	24
5/31	107.1	107.3	107.9	24	107.6	108.2	108.6	24	109.5	110.0	110.2	24	109.3	109.5	109.7	24	108.7	109.1	110.2	24
6/1	107.4	107.7	108.2	24	107.6	108.0	108.5	24	109.4	110.0	111.3	24	109.5	109.7	109.8	24	112.7	113.1	113.4	24
6/2	107.0	107.5	107.8	24	106.7	106.9	107.1	24	107.8	108.1	108.4	24	109.0	109.2	109.5	24	112.2	112.5	113.0	24
6/3	106.3	106.8	107.7	24	106.1	106.6	107.1	24	107.1	107.6	107.9	24	108.1	108.3	108.6	24	111.3	112.0	112.7	24
6/4	105.9	106.0	106.4	19	106.3	106.9	107.5	23	107.3	108.1	108.7	23	107.3	107.6	108.0	23	111.1	112.2	112.7	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>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
5/22	108.4	108.8	109.2	24	111.9	113.2	114.4	24	111.3	111.8	113.2	24	110.9	111.2	111.7	24	112.0	113.3	114.8	24
5/23	108.0	108.4	108.7	24	111.4	111.9	113.3	24	110.4	111.2	113.0	24	110.6	110.8	111.7	24	109.9	110.3	110.7	24
5/24	108.1	108.8	109.2	24	111.6	112.1	112.4	24	109.8	110.1	110.7	24	111.3	112.1	113.0	24	109.9	110.4	111.2	24
5/25	107.9	108.2	108.5	24	111.5	112.2	112.8	24	109.6	110.3	111.0	24	111.5	111.8	112.1	24	110.2	110.6	111.1	24
5/26	107.5	107.8	108.1	24	111.1	112.0	113.2	24	109.8	110.5	110.8	24	111.5	111.7	112.3	24	110.4	111.1	111.6	24
5/27	107.3	107.9	108.2	24	111.1	111.8	112.7	24	110.2	111.1	111.5	24	110.5	110.9	111.9	24	110.6	111.0	111.2	24
5/28	108.3	109.1	109.5	24	110.9	112.6	114.2	24	110.3	110.8	111.1	24	110.2	110.4	110.5	24	110.0	110.3	111.1	24
5/29	107.9	108.2	108.5	24	111.3	112.1	113.3	23	111.4	112.3	112.8	24	110.9	111.2	111.5	24	110.5	110.8	111.2	24
5/30	108.3	108.9	109.5	24	111.4	112.3	112.5	24	111.7	112.1	112.7	24	112.3	113.2	113.5	24	111.0	111.3	111.8	24
5/31	108.4	108.7	108.9	24	111.6	112.4	113.2	24	111.1	112.1	112.8	24	112.9	113.1	113.7	24	111.5	112.2	112.6	24
6/1	109.1	110.1	110.4	24	115.1	116.4	116.7	24	110.2	110.9	111.6	24	112.6	112.9	113.5	24	112.2	112.6	112.9	24
6/2	108.7	109.0	109.2	24	114.9	115.5	116.7	24	106.7	107.4	109.0	24	110.6	111.4	112.8	24	109.8	110.4	110.7	24
6/3	108.4	108.7	108.9	24	113.7	114.4	116.4	24	106.1	107.0	107.8	24	110.2	111.0	111.8	24	108.2	108.5	108.8	24
6/4	107.6	108.2	108.8	23	112.7	113.3	114.5	23	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	<u>Priest R. Dnst</u>			<u>Pasco</u>			<u>Dworshak</u>			<u>Clrwr-Peck</u>			<u>Anatone</u>			#				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg			High	hr	Avg	Avg
5/22	113.0	113.3	113.6	24	---	---	---	0	103.0	104.1	105.6	24	---	---	---	0	103.4	104.1	105.0	24
5/23	112.0	112.1	112.2	24	---	---	---	0	103.4	104.8	106.1	24	---	---	---	0	103.0	103.9	104.7	24
5/24	111.9	112.2	112.5	24	---	---	---	0	103.5	104.8	106.2	24	---	---	---	0	102.9	103.8	104.6	23
5/25	111.7	111.9	112.0	24	---	---	---	0	103.4	104.5	105.3	24	---	---	---	0	102.4	102.6	103.6	18
5/26	111.9	112.1	112.3	24	---	---	---	0	103.4	104.4	105.1	24	---	---	---	0	102.4	102.4	103.2	4
5/27	112.4	112.6	112.8	24	---	---	---	0	103.6	105.0	107.1	24	---	---	---	0	107.5	107.8	148.4	13
5/28	112.1	112.3	112.4	24	---	---	---	0	103.5	104.8	106.5	24	---	---	---	0	103.8	104.9	105.6	23
5/29	112.5	112.8	113.0	24	---	---	---	0	103.7	105.2	106.7	24	---	---	---	0	104.1	105.0	105.8	24
5/30	112.9	113.2	113.4	24	---	---	---	0	103.8	105.2	106.3	24	---	---	---	0	104.0	104.8	105.4	24
5/31	113.0	113.3	113.5	24	---	---	---	0	103.8	104.4	106.2	17	---	---	---	0	103.7	104.5	105.3	24
6/1	113.6	113.8	114.0	24	---	---	---	0	102.4	102.4	103.1	8	---	---	---	0	102.6	102.6	102.9	11
6/2	111.8	112.2	112.5	24	---	---	---	0	103.0	104.1	105.7	24	---	---	---	0	102.8	103.4	103.9	24
6/3	110.5	111.3	111.5	24	---	---	---	0	102.0	104.2	106.3	24	---	---	---	0	103.2	104.1	104.7	24
6/4	---	---	---	0	---	---	---	0	97.7	98.4	99.0	23	---	---	---	0	103.5	104.4	105.4	23

### Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwr-Lewiston</u>			<u>Lower Granite</u>			<u>L. Granite Tlwr</u>			<u>Little Goose</u>			<u>L. Goose Tlwr</u>			#				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg			High	hr	Avg	Avg
5/22	102.6	104.1	105.9	24	104.6	104.8	105.0	24	110.4	110.6	111.0	24	109.8	109.9	110.1	24	110.8	111.1	111.4	24
5/23	102.7	104.3	105.7	24	103.5	103.7	104.1	24	110.1	110.2	110.7	24	109.4	109.6	109.8	24	111.2	111.5	111.9	24
5/24	102.5	103.7	104.4	24	103.2	103.6	104.0	24	110.1	110.3	110.6	24	110.5	111.1	111.5	24	111.2	111.5	111.8	24
5/25	102.0	103.0	104.2	24	103.2	103.3	103.5	24	110.0	110.2	111.0	24	111.1	111.4	111.9	24	111.1	111.3	111.6	24
5/26	102.1	103.5	104.6	24	103.3	103.4	103.6	24	110.1	110.4	110.8	24	110.2	110.3	110.6	24	111.1	111.3	111.5	24
5/27	102.4	104.0	105.5	24	103.0	103.1	103.3	24	110.2	110.4	111.1	24	109.8	110.0	110.2	24	110.9	111.2	111.5	24
5/28	102.5	104.3	105.6	24	102.4	102.6	102.7	24	109.8	110.1	110.6	24	109.7	110.1	110.5	24	111.0	111.2	111.3	24
5/29	102.9	104.6	105.8	24	102.7	103.0	103.2	24	110.1	110.3	111.7	24	111.1	111.3	111.9	16	111.5	111.5	111.8	16
5/30	102.9	104.5	105.6	24	103.3	103.5	103.7	24	110.5	110.8	112.1	24	111.4	111.8	112.3	24	111.8	112.2	112.6	24
5/31	102.5	103.3	105.4	17	103.8	104.0	104.3	24	110.4	110.5	110.8	24	111.7	112.3	112.7	24	111.9	112.3	112.7	24
6/1	100.6	100.6	101.4	7	104.2	104.3	104.6	13	110.4	110.4	110.8	13	111.4	111.4	112.1	12	111.9	111.9	112.3	12
6/2	100.9	101.8	102.5	24	102.9	103.2	103.7	24	110.2	110.3	110.5	24	110.8	110.9	111.2	24	111.4	111.6	111.9	24
6/3	101.4	102.5	103.4	24	101.8	102.0	102.2	24	109.9	110.1	110.7	24	109.9	110.3	110.8	24	111.1	111.4	111.7	24
6/4	102.3	103.8	105.0	23	101.1	101.2	101.5	23	109.5	109.7	110.0	23	109.2	109.4	109.8	23	110.5	110.8	111.1	23

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

Date	<u>Lower Mon.</u>			<u>L. Mon. Tlwr</u>			<u>Ice Harbor</u>			<u>Ice Harbor Tlwr</u>			<u>McNary-Oregon</u>			#				
	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#	<u>24 h</u>	<u>12 h</u>	#					
	Avg	Avg		High	hr		Avg	Avg		High	hr		Avg	Avg			High	hr	Avg	Avg
5/22	113.0	113.2	113.4	24	116.4	118.2	119.1	22	117.7	118.0	118.3	24	115.5	115.9	116.2	24	---	---	---	0
5/23	112.4	112.6	112.8	24	113.5	113.8	114.3	24	116.3	116.5	116.8	24	115.2	115.5	115.6	24	---	---	---	0
5/24	112.0	112.3	112.5	24	113.4	113.8	114.6	24	115.6	115.8	116.0	24	115.6	116.0	116.3	24	---	---	---	0
5/25	112.2	112.5	112.6	24	113.5	113.7	114.6	24	115.4	115.5	115.7	24	115.4	115.9	116.4	24	---	---	---	0
5/26	112.2	112.3	112.5	24	113.7	114.5	116.6	24	115.0	115.2	115.8	24	114.5	115.8	116.2	24	---	---	---	0
5/27	111.7	111.8	112.2	24	116.0	116.4	117.0	24	114.7	114.9	115.1	24	115.2	115.7	116.1	24	---	---	---	0
5/28	111.6	111.8	111.9	24	116.4	116.9	117.2	24	115.0	115.1	115.5	24	115.5	115.9	116.2	24	---	---	---	0
5/29	112.1	112.3	112.5	24	117.5	117.9	118.3	24	115.9	116.4	116.7	24	115.7	115.9	116.2	24	---	---	---	0
5/30	112.7	113.0	113.1	24	116.6	117.3	117.9	24	116.7	117.1	117.5	24	115.5	115.9	116.5	24	---	---	---	0
5/31	113.2	113.6	114.1	24	116.9	117.5	118.0	24	117.2	117.7	118.3	24	115.6	116.0	116.4	24	---	---	---	0
6/1	113.1	113.5	113.7	24	115.4	116.6	118.2	24	116.8	117.1	117.5	24	115.1	116.2	116.7	24	---	---	---	0
6/2	111.8	112.1	112.6	24	113.6	113.7	113.9	24	114.9	115.4	116.0	24	114.9	115.1	115.3	24	---	---	---	0
6/3	110.6	110.9	111.0	24	113.5	114.0	115.0	24	113.0	113.4	113.9	24	114.8	115.6	115.9	24	---	---	---	0
6/4	110.5	110.7	111.1	23	113.4	113.7	116.2	23	111.8	112.0	112.2	23	115.5	115.6	115.9	23	---	---	---	0

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

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			#	<u>McNary Tlwr</u>			#	<u>John Day</u>			#	<u>John Day Tlwr</u>			#	<u>The Dalles</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/22	112.7	113.1	114.3	24	114.5	114.7	114.9	24	110.4	110.9	111.2	24	114.9	115.2	115.5	24	110.7	111.8	112.6	24
5/23	111.1	111.5	111.8	24	114.2	114.5	114.8	24	110.4	110.6	110.9	24	114.5	115.4	115.9	24	108.0	108.5	108.9	24
5/24	110.6	110.8	111.0	24	114.6	115.1	115.6	24	109.9	110.3	110.7	24	115.6	116.6	116.9	24	109.1	109.8	110.6	24
5/25	110.6	110.9	111.1	24	114.3	114.8	115.3	24	109.4	109.6	109.9	24	114.7	115.4	116.4	24	109.6	110.0	110.6	24
5/26	110.7	111.0	111.8	24	114.2	114.6	115.0	24	108.5	108.7	108.9	24	113.7	114.2	114.6	24	109.9	110.2	110.3	24
5/27	110.2	110.4	111.1	24	114.6	114.8	115.1	24	108.3	108.6	109.2	24	112.7	113.4	115.0	24	110.3	110.9	111.3	24
5/28	110.8	111.0	111.5	24	114.6	114.9	115.8	24	109.7	110.7	111.8	24	114.5	115.6	115.9	24	111.3	112.2	113.1	24
5/29	112.7	113.3	113.9	24	115.2	115.6	116.0	24	111.3	111.9	112.4	24	114.2	115.5	115.8	24	113.3	113.6	113.8	24
5/30	112.5	112.8	113.2	24	114.7	114.9	115.0	24	111.7	112.1	112.7	24	114.9	115.2	115.5	24	112.0	112.4	112.7	24
5/31	113.0	113.2	114.5	24	114.7	115.0	115.3	24	112.1	112.9	113.4	24	115.4	116.0	116.4	24	111.6	112.3	112.7	24
6/1	111.7	112.2	112.7	24	114.5	114.8	114.9	24	112.5	113.0	113.6	24	113.7	114.4	114.5	24	111.0	112.0	112.9	24
6/2	109.0	109.5	110.4	24	114.3	114.7	115.4	24	110.2	110.5	111.2	24	113.7	114.3	114.7	24	109.3	109.6	109.8	24
6/3	106.7	107.1	107.8	24	115.6	116.5	117.4	24	108.4	108.7	109.1	24	114.5	114.8	115.1	24	109.2	109.5	109.5	24
6/4	106.9	107.4	107.9	23	115.1	116.0	116.2	23	107.2	107.4	107.8	23	114.1	114.3	114.7	23	108.4	108.8	109.5	23

### Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			#	<u>Bonneville</u>			#	<u>Warrendale</u>			#	<u>Camas\Washougal</u>			#	<u>Cascade Island</u>			#
	<u>24 h</u>	<u>12 h</u>			<u>24 h</u>	<u>12 h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>			<u>24h</u>	<u>12h</u>		
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High	
5/22	116.7	117.3	117.9	24	112.4	113.1	114.4	24	115.3	115.5	116.1	24	113.0	113.4	114.6	24	117.0	117.2	117.3	24
5/23	114.8	115.2	115.4	24	108.9	109.3	110.2	24	114.5	114.8	115.1	24	111.9	112.7	113.5	24	116.7	117.1	117.3	24
5/24	115.5	115.9	116.0	24	107.8	108.2	108.7	24	114.1	114.4	114.6	24	111.3	112.5	113.7	24	116.8	117.5	117.6	24
5/25	115.8	116.0	116.3	24	108.5	109.0	109.5	24	114.1	114.6	114.8	24	111.0	112.0	112.6	24	117.3	117.4	117.6	24
5/26	115.9	116.4	116.8	24	109.1	109.8	110.3	24	114.5	114.9	115.1	24	111.5	112.6	113.3	24	117.1	117.4	117.5	24
5/27	116.3	116.6	116.9	24	111.2	112.3	112.8	24	115.3	115.7	116.0	24	112.6	114.2	115.1	24	117.4	117.6	117.8	24
5/28	116.9	117.4	117.6	24	113.8	115.0	115.4	24	116.3	116.9	117.4	24	114.1	116.0	117.0	24	117.5	117.7	117.8	24
5/29	117.8	118.5	118.7	24	115.1	115.5	115.7	24	116.8	117.1	117.4	24	115.3	116.8	117.7	24	117.3	117.6	117.8	24
5/30	116.8	117.1	117.4	24	113.8	114.1	114.8	24	116.2	116.8	117.0	24	114.3	115.3	115.8	24	116.8	117.1	117.7	24
5/31	116.5	116.9	117.2	24	113.4	113.9	114.2	24	117.3	117.8	118.3	24	115.9	117.9	119.0	24	117.1	117.3	117.7	24
6/1	115.9	116.5	116.9	24	111.5	112.3	113.3	24	115.9	116.2	116.7	24	113.4	114.2	116.6	24	117.0	117.2	117.8	24
6/2	114.9	115.3	115.4	24	108.8	109.1	109.6	24	114.2	114.6	115.0	24	111.1	111.5	112.5	24	117.3	117.4	117.6	24
6/3	115.1	115.6	116.0	24	109.1	109.3	109.6	24	115.0	115.5	115.9	24	111.4	112.7	113.4	24	116.4	116.4	116.9	24
6/4	115.0	115.6	116.0	23	109.5	110.0	110.5	23	115.4	115.8	116.3	23	113.0	114.6	115.9	23	116.5	116.6	117.1	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 6/5/2015 7:07

\* 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/currentsmppsubmitdata.asp>

<b>COMBINED YEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/22/2015 *	10	14	---	---	5,872	5,519	3,743	151	---	14,660	33,322
05/23/2015 *	---	12	---	---	3,667	4,371	2,709	190	30,586	20,365	29,738
05/24/2015 *	---	7	---	---	1,384	2,439	1,939	319	---	20,661	26,777
05/25/2015 *	---	---	---	---	1,078	2,513	623	534	16,606	10,630	19,279
05/26/2015 *	---	6	---	---	806	1,158	325	331	---	5,805	16,048
05/27/2015 *	---	8	2	---	585	2,188	753	359	16,723	5,055	10,400
05/28/2015 *	---	13	3	---	440	645	259	186	---	4,321	7,546
05/29/2015 *	---	33	0	---	363	1,002	634	221	8,606	2,620	5,728
05/30/2015 *	---	41	---	---	74	575	464	195	---	2,223	4,786
05/31/2015	---	48	---	---	228	72	165	182	4,418	1,233	4,836
06/01/2015 *	---	---	---	---	75	287	131	149	---	1,090	2,353
06/02/2015	---	---	---	---	74	146	318	146	6,184	1,027	4,053
06/03/2015 *	---	---	---	---	222	322	504	25	---	1,081	5,960
06/04/2015	---	---	---	---	144	466	151	16	4,795	932	3,694
06/05/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>10</b>	<b>182</b>	<b>5</b>	<b>0</b>	<b>15,012</b>	<b>21,703</b>	<b>12,718</b>	<b>3,004</b>	<b>87,918</b>	<b>91,703</b>	<b>174,520</b>
<b># Days:</b>	<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>10</b>	<b>20</b>	<b>2</b>	<b>0</b>	<b>1,072</b>	<b>1,550</b>	<b>908</b>	<b>215</b>	<b>12,560</b>	<b>6,550</b>	<b>12,466</b>
<b>YTD</b>	<b>40,054</b>	<b>65,288</b>	<b>7,458</b>	<b>1,081</b>	<b>1,768,111</b>	<b>1,154,864</b>	<b>1,125,847</b>	<b>16,412</b>	<b>1,323,748</b>	<b>650,404</b>	<b>1,699,197</b>

<b>COMBINED SUBYEARLING CHINOOK</b>											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
05/22/2015 *	0	0	---	---	4,178	1,361	1,139	9	---	931	6,993
05/23/2015 *	---	0	---	---	8,215	1,218	1,238	24	1,699	1,219	6,129
05/24/2015 *	---	2	---	---	14,352	1,505	853	18	---	1,312	6,786
05/25/2015 *	---	---	---	---	15,736	2,585	1,403	55	1,017	2,084	4,059
05/26/2015 *	---	1	---	---	35,629	4,255	1,139	31	---	2,658	3,086
05/27/2015 *	---	0	89	---	36,109	9,289	1,905	20	3,064	3,052	3,857
05/28/2015 *	---	3	66	---	27,851	16,779	1,616	69	---	5,236	5,739
05/29/2015 *	---	3	67	---	23,286	43,386	2,188	20	1,370	5,628	5,933
05/30/2015 *	---	1	---	---	41,579	36,997	1,590	25	---	4,524	5,547
05/31/2015	---	3	---	---	20,595	7,744	1,550	44	2,379	3,813	3,635
06/01/2015 *	---	---	---	---	29,439	15,908	10,396	355	---	4,109	5,448
06/02/2015	---	---	---	---	47,285	14,872	14,587	463	6,227	3,854	5,641
06/03/2015 *	---	---	---	---	72,581	24,327	11,723	312	---	3,095	6,078
06/04/2015	---	---	---	---	36,232	26,362	18,321	233	3,611	3,802	5,239
06/05/2015	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>13</b>	<b>222</b>	<b>0</b>	<b>413,067</b>	<b>206,588</b>	<b>69,648</b>	<b>1,678</b>	<b>19,367</b>	<b>45,317</b>	<b>74,170</b>
<b># Days:</b>	<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>1</b>	<b>74</b>	<b>0</b>	<b>29,505</b>	<b>14,756</b>	<b>4,975</b>	<b>120</b>	<b>2,767</b>	<b>3,237</b>	<b>5,298</b>
<b>YTD</b>	<b>1</b>	<b>56</b>	<b>1,292</b>	<b>2,077</b>	<b>442,403</b>	<b>216,208</b>	<b>86,216</b>	<b>6,540</b>	<b>27,099</b>	<b>51,708</b>	<b>1,530,590</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)	
05/22/2015	*	0	0	---	---	1,906	860	488	1,057	---	1,629	16,044
05/23/2015	*	---	0	---	---	807	1,862	1,780	678	6,797	4,016	20,658
05/24/2015	*	---	0	---	---	874	1,361	698	808	---	3,081	20,896
05/25/2015	*	---	---	---	---	431	431	701	714	3,389	4,168	16,032
05/26/2015	*	---	0	---	---	733	1,397	0	613	---	2,345	17,694
05/27/2015	*	---	0	0	---	219	1,327	746	631	4,420	2,861	12,944
05/28/2015	*	---	0	0	---	0	1,005	162	489	---	2,083	12,647
05/29/2015	*	---	0	0	---	0	1,217	1,300	547	4,429	2,174	8,490
05/30/2015	*	---	0	---	---	74	287	928	458	---	975	7,832
05/31/2015	*	---	0	---	---	0	72	495	463	2,549	430	5,360
06/01/2015	*	---	---	---	---	225	215	752	1,031	---	382	6,501
06/02/2015	*	---	---	---	---	74	0	350	561	2,037	253	4,382
06/03/2015	*	---	---	---	---	148	72	166	175	---	177	4,045
06/04/2015	*	---	---	---	---	0	179	0	128	1,363	215	2,821
06/05/2015	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,491</b>	<b>10,285</b>	<b>8,566</b>	<b>8,353</b>	<b>24,984</b>	<b>24,789</b>	<b>156,346</b>
<b># Days:</b>		<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</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>392</b>	<b>735</b>	<b>612</b>	<b>597</b>	<b>3,569</b>	<b>1,771</b>	<b>11,168</b>
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>40,050</b>	<b>59,103</b>	<b>37,022</b>	<b>13,640</b>	<b>59,867</b>	<b>63,250</b>	<b>673,387</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)	
05/22/2015	*	8	814	---	---	19,930	27,079	6,348	788	---	4,809	15,427
05/23/2015	*	---	632	---	---	11,442	9,169	7,817	614	17,332	6,884	15,664
05/24/2015	*	---	268	---	---	11,656	14,689	2,172	475	---	4,335	17,664
05/25/2015	*	---	---	---	---	5,533	9,192	2,104	374	13,556	4,377	20,903
05/26/2015	*	---	196	---	---	4,765	10,530	1,789	227	---	3,266	20,163
05/27/2015	*	---	205	1	---	4,166	8,500	3,711	156	21,505	5,246	14,762
05/28/2015	*	---	153	0	---	2,199	8,460	1,939	175	---	5,390	12,434
05/29/2015	*	---	100	2	---	3,700	7,519	2,696	231	4,845	3,344	10,434
05/30/2015	*	---	92	---	---	3,496	7,170	2,651	239	---	2,652	9,137
05/31/2015	*	---	114	---	---	2,660	3,155	1,319	269	3,568	1,204	3,481
06/01/2015	*	---	---	---	---	1,953	3,296	948	362	---	1,052	2,229
06/02/2015	*	---	---	---	---	3,750	2,743	795	140	2,103	1,510	2,520
06/03/2015	*	---	---	---	---	3,027	1,288	207	94	---	541	3,612
06/04/2015	*	---	---	---	---	866	1,540	603	76	2,074	660	2,351
06/05/2015	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>8</b>	<b>2,574</b>	<b>3</b>	<b>0</b>	<b>79,143</b>	<b>114,330</b>	<b>35,099</b>	<b>4,220</b>	<b>64,983</b>	<b>45,270</b>	<b>150,781</b>
<b># Days:</b>		<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>7</b>	<b>14</b>	<b>14</b>
<b>Average:</b>		<b>8</b>	<b>286</b>	<b>1</b>	<b>0</b>	<b>5,653</b>	<b>8,166</b>	<b>2,507</b>	<b>301</b>	<b>9,283</b>	<b>3,234</b>	<b>10,770</b>
<b>YTD</b>		<b>2,567</b>	<b>39,591</b>	<b>672</b>	<b>11,678</b>	<b>1,276,221</b>	<b>1,045,522</b>	<b>570,525</b>	<b>12,059</b>	<b>439,109</b>	<b>196,326</b>	<b>1,002,969</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)	
05/22/2015	*	0	0	---	---	293	430	488	54	---	6,438	13,164
05/23/2015	*	---	0	---	---	0	143	155	55	8,156	6,884	13,620
05/24/2015	*	---	0	---	---	0	143	155	38	---	4,657	18,849
05/25/2015	*	---	---	---	---	72	0	78	19	17,284	5,838	6,900
05/26/2015	*	---	0	---	---	73	143	81	24	---	3,793	6,584
05/27/2015	*	---	0	0	---	0	0	31	25	4,418	2,099	4,443
05/28/2015	*	---	0	0	---	0	72	32	6	---	967	3,720
05/29/2015	*	---	0	0	---	0	0	32	3	1,022	1,729	3,171
05/30/2015	*	---	0	---	---	0	72	0	3	---	897	2,067
05/31/2015	*	---	0	---	---	0	0	0	3	850	516	1,633
06/01/2015	*	---	---	---	---	0	0	0	8	---	497	619
06/02/2015	*	---	---	---	---	0	72	0	8	2,207	586	1,315
06/03/2015	*	---	---	---	---	0	0	0	1	---	224	1,556
06/04/2015	*	---	---	---	---	0	0	0	6	1,022	273	1,075
06/05/2015	*	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>438</b>	<b>1,075</b>	<b>1,052</b>	<b>253</b>	<b>34,959</b>	<b>35,398</b>	<b>78,716</b>
<b># Days:</b>		<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</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>31</b>	<b>77</b>	<b>75</b>	<b>18</b>	<b>4,994</b>	<b>2,528</b>	<b>5,623</b>
<b>YTD</b>		<b>74</b>	<b>0</b>	<b>4</b>	<b>47</b>	<b>16,038</b>	<b>19,815</b>	<b>11,030</b>	<b>3,792</b>	<b>126,818</b>	<b>100,902</b>	<b>144,816</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)	
05/22/2015	*	0	0	---	---	0	0	0	---	450	0	
05/23/2015	*	---	0	---	---	0	0	0	0	250	0	
05/24/2015	*	---	0	---	---	0	0	0	---	375	0	
05/25/2015	*	---	---	---	---	1	0	0	1	400	100	
05/26/2015	*	---	0	---	---	0	175	0	0	1,088	0	
05/27/2015	*	---	0	0	---	0	150	0	0	200	0	
05/28/2015	*	---	0	0	---	1	50	120	0	1,200	0	
05/29/2015	*	---	0	0	---	1	50	80	0	1,133	0	
05/30/2015	*	---	0	---	---	0	300	200	1	525	0	
05/31/2015	*	---	0	---	---	0	100	40	2	300	0	
06/01/2015	*	---	---	---	---	0	100	60	2	226	0	
06/02/2015	*	---	---	---	---	0	100	20	0	200	100	
06/03/2015	*	---	---	---	---	0	100	600	2	613	78	
06/04/2015	*	---	---	---	---	0	100	0	0	150	0	
06/05/2015	*	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1,225</b>	<b>1,120</b>	<b>8</b>	<b>1,250</b>	<b>8,663</b>	<b>278</b>
<b># Days:</b>		<b>1</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>14</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>88</b>	<b>80</b>	<b>1</b>	<b>179</b>	<b>619</b>	<b>20</b>
<b>YTD</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>4,806</b>	<b>1,250</b>	<b>19</b>	<b>2,365</b>	<b>14,612</b>	<b>3,379</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:

6/5/15 7:04 AM

**05/22/15 TO 06/05/15**

		Species					
Site	Data	CH0	CH1	CO	ST	SO	Grand Total
<b>LGR</b>	Sum of NumberCollected	280,800	10,256	3,750	53,996	300	349,102
	Sum of NumberBarged	255,146	9,833	3,744	48,477	264	317,464
	Sum of NumberBypassed	145	264	0	4,914	0	5,323
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	35	2	0	8	0	45
	Sum of FacilityMorts	403	41	6	63	33	546
	Sum of ResearchMorts	0	16	0	40	3	59
	Sum of TotalProjectMorts	438	59	6	111	36	650
<b>LGS</b>	Sum of NumberCollected	144,180	15,141	7,176	79,764	750	247,011
	Sum of NumberBarged	125,749	14,784	7,036	78,602	747	226,918
	Sum of NumberBypassed	19	0	0	0	0	19
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	1	0	4	2	8
	Sum of FacilityMorts	18	32	15	85	1	151
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	19	33	15	89	3	159
<b>LMN</b>	Sum of NumberCollected	43,916	8,009	5,390	22,094	660	80,069
	Sum of NumberBarged	31,711	7,882	5,389	21,621	660	67,263
	Sum of NumberBypassed	4	0	0	0	0	4
	Sum of Numbertrucked	0	0	0	0	0	0
	Sum of SampleMorts	3	5	1	8	0	17
	Sum of FacilityMorts	59	26	0	65	0	150
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	62	31	1	73	0	167
Total Sum of NumberCollected		468,896	33,406	16,316	155,854	1,710	676,182
Total Sum of NumberBarged		412,606	32,499	16,169	148,700	1,671	611,645
Total Sum of NumberBypassed		168	264	0	4,914	0	5,346
Total Sum of Numbertrucked		0	0	0	0	0	0
Total Sum of SampleMorts		39	8	1	20	2	70
Total Sum of FacilityMorts		480	99	21	213	34	847
Total Sum of ResearchMorts		0	16	0	40	3	59
Total Sum of TotalProjectMorts		519	123	22	273	39	976

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

6/5/15 7:04 AM

TO: 06/05/15

		Species					
Site	Data	CH0	CH1	CO	SO	ST	Grand Total
<b>LGR</b>	Sum of NumberCollected	300,890	1,149,528	26,100	10,810	812,374	2,299,702
	Sum of NumberBarged	267,111	472,584	22,592	10,392	349,864	1,122,543
	Sum of NumberBypassed	8,215	676,470	3,499	160	461,731	1,150,075
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	50	43	0	7	29	129
	Sum of FacilityMorts	443	315	9	248	216	1,231
	Sum of ResearchMorts	0	16	0	3	40	59
	Sum of TotalProjectMorts	493	374	9	258	285	1,419
<b>LGS</b>	Sum of NumberCollected	150,900	806,133	41,246	13,841	729,860	1,741,980
	Sum of NumberBarged	132,443	543,679	39,386	13,796	515,365	1,244,669
	Sum of NumberBypassed	43	261,966	1,720	40	213,220	476,989
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	1	20	0	2	8	31
	Sum of FacilityMorts	20	144	15	3	194	376
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	21	164	15	5	202	407
<b>LMN</b>	Sum of NumberCollected	53,528	641,991	21,790	6,690	319,755	1,043,754
	Sum of NumberBarged	41,194	580,994	21,486	6,640	282,207	932,521
	Sum of NumberBypassed	130	60,572	300	30	36,794	97,826
	Sum of NumberTrucked	0	0	0	0	0	0
	Sum of SampleMorts	3	44	2	0	36	85
	Sum of FacilityMorts	62	315	2	20	318	717
	Sum of ResearchMorts	0	0	0	0	0	0
	Sum of TotalProjectMorts	65	359	4	20	354	802
Total Sum of NumberCollected		505,318	2,597,652	89,136	31,341	1,861,989	5,085,436
Total Sum of NumberBarged		440,748	1,597,257	83,464	30,828	1,147,436	3,299,733
Total Sum of NumberBypassed		8,388	999,008	5,519	230	711,745	1,724,890
Total Sum of NumberTrucked		0	0	0	0	0	0
Total Sum of SampleMorts		54	107	2	9	73	245
Total Sum of FacilityMorts		525	774	26	271	728	2,324
Total Sum of ResearchMorts		0	16	0	3	40	59
Total Sum of TotalProjectMorts		579	897	28	283	841	2,628

**Cumulative Adult Passage at Mainstem Dams Through: 06/04**

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.		2015		2014		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	06/04	220480	13314	188083	26094	132065	23978	10592	1025	8728	1319	6629	1404	0	0	0	0	0	0
TDA	06/04	194116	12307	143142	21080	101070	20309	1674	161	1180	213	1107	218	0	0	0	0	0	0
JDA	06/04	164656	11377	122039	18907	86642	18651	0	0	0	0	0	0	0	0	0	0	0	0
MCN	06/04	151261	8439	102239	15172	74637	14650	0	0	0	0	0	0	0	0	0	0	0	0
IHR	06/04	111527	5201	73768	10663	50403	9107	0	0	0	0	0	0	0	0	0	0	0	0
LMN	06/04	105066	7376	72032	11363	49104	7953	0	0	0	0	0	0	0	0	0	0	0	0
LGS	06/04	98119	7052	70158	10856	44150	8456	0	0	0	0	0	0	0	0	0	0	0	0
LGR	06/04	96813	6400	69007	10307	41464	8968	0	0	0	0	0	0	0	0	0	0	0	0
PRD	06/03	21900	1244	19369	2228	13347	1316	0	0	0	0	0	0	0	0	0	0	0	0
WAN	06/03	21250	774	0	0	13571	1708	0	0	0	0	0	0	0	0	0	0	0	0
RIS	06/03	23830	874	18267	2309	11961	1864	0	0	0	0	0	0	0	0	0	0	0	0
RRH	06/03	9848	488	9354	1766	4871	767	0	0	0	0	0	0	0	0	0	0	0	0
WEL	06/02	7816	742	7450	1293	3107	696	0	0	0	0	0	0	0	0	0	0	0	0
WFA	05/29	43001	1591	19198	670	20499	560	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2015		2014		10-Yr Avg.		2015	2014	10-Yr Avg.	2015	2014	10-Yr Avg.	Wild 2015	Wild 2014	10-Yr Avg.	2015	2014	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	06/04	0	0	5	-2	0	0	1263	297	334	5465	6116	5732	2642	1582	1473	1539	3330	1248
TDA	06/04	0	0	0	0	0	0	490	85	128	542	1031	2610	203	240	955	323	3	2
JDA	06/04	0	0	0	1	0	1	430	44	67	678	3258	5122	363	1155	1768	130	139	41
MCN	06/04	5	4	0	0	1	0	237	3	9	803	920	5379	417	350	1779	28	8	1
IHR	06/04	0	0	0	0	0	0	2	0	0	1211	1828	4974	702	770	1515	14	6	0
LMN	06/04	0	0	0	0	0	0	5	1	0	3459	5342	6667	1848	1609	2146	6	2	0
LGS	06/04	0	0	0	0	0	0	0	0	0	1497	1592	3088	998	1008	1449	-1	0	0
LGR	06/04	0	0	0	0	0	0	10	0	0	9185	7487	8799	4345	3459	3237	0	0	0
PRD	06/03	0	0	0	0	0	0	11	34	1	40	116	55	0	0	0	45	3	0
WAN	06/03	0	0	0	0	0	0	4	0	0	57	0	121	0	0	0	30	0	0
RIS	06/03	0	0	0	0	0	0	5	2	1	134	280	117	89	151	60	0	0	0
RRH	06/03	0	0	0	0	0	0	0	1	0	113	255	360	78	159	258	0	0	0
WEL	06/02	0	0	0	0	0	0	0	0	0	39	123	76	30	75	53	0	0	2
WFA	05/29	1	0	9	0	0	0	0	0	0	5922	11573	12689	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.