



Fish Passage Center

Weekly Report #15–2

March 27, 2015

Summary of Events

Water Supply

Precipitation throughout the Columbia Basin has varied between 15% and 163% of average at individual sub-basins over March. Precipitation above The Dalles has been 73% of average over March. Over the 2015 water year, precipitation has ranged between 66% and 112% of average.

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

Location	Water Year 2015		Water Year 2015	
	March 1–18, 2015		October 1, 2014 to March 25, 2015	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	2.14	118	24.0	109
Snake River Above Ice Harbor	0.50	37	11.0	82
Columbia Above The Dalles	1.10	73	15.6	92
Kootenai	2.89	162	24.8	112
Clark Fork	0.91	64	13.8	90
Flathead	3.13	163	22.5	109
Pend Oreille River Basin above Waneta Dam	2.05	119	19.0	100
Salmon River Basin	0.71	42	14.3	86
Upper Snake Tributaries	0.25	15	10.4	66
Clearwater	1.83	77	24.3	96
Willamette River above Portland	2.78	66	41.9	88

Snowpack within the Columbia Basin has been below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 63% of average. For Snake River Basins the average snowpack is 62% of average. For lower Columbia Basins between McNary and Bonneville Dam snowpack is 14% of average.

Table 2 displays the March 26th ESP runoff volume forecasts for multiple reservoirs along with the March COE forecasts at Libby and Dworshak. The March 26th ESP forecast at The Dalles between April and August is 78,886 Kaf (85% of average).

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

Location	March 26, 2015, 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	85	78,886
Grand Coulee (Apr–Aug)	91	54,902
Libby Res. Inflow, MT (Apr–Aug)	93 97*	5,810 5,683*
Hungry Horse Res. Inflow, MT (Apr–Aug)	87	1,723
Lower Granite Res. Inflow (Apr–July)	75	16,679
Brownlee Res. Inflow (Apr–July)	67	4,592
Dworshak Res. Inflow (Apr–July)	76 74*	1,966 1,815*

* Denotes COE March Forecast

Grand Coulee Reservoir is at 1,253.1 feet (3-26-15) and has refilled 0.2 feet over the last week. Outflows at Grand Coulee have ranged between 122.9 and 147.8 Kcfs over the last week. The end of March FC Elevation is 1,290.0 feet at Grand Coulee. Grand Coulee has drafted below flood control (1,255 ft) for drum gate maintenance.

The Libby Reservoir is currently at elevation 2,416.9 feet (3-26-15) and has refilled 1.65 feet over the previous week. Daily average outflows at Libby Dam have been 4.0 Kcfs over the last week. The end of March FC Elevation at Libby is 2,459.0 feet (based on March forecast).

Hungry Horse is currently at an elevation of 3,539.1 feet (3-26-15) and refilled 0.5 feet over the last week. Outflows at Hungry Horse have increased from 5.2 to 6.7 Kcfs over the last week. The end of March FC Elevation at Hungry Horse is 3,560.0 feet.

Dworshak is currently at an elevation of 1,585.4 feet (3-26-15) and refilled 6.2 feet over the last week. Outflows have been to 1.5 to 9.6 Kcfs over the last week. The end of March System FC elevation at Dworshak (based on March forecast) is 1,600.0 feet.

The Brownlee Reservoir was at an elevation of 2,056.6 feet on March 26, 2015, and has refilled 2.2 feet over the last week. The end of March FC Elevation is 2,077.0 feet at Brownlee. Outflow from Hells Canyon is being managed to a minimum of 9.2 Kcfs for fall Chinook spawning (with daily fluctuations to meet energy demand). Over the last 4 days flows have ranged between 9.3 and 14.5 Kcfs.

Smolt Monitoring

Smolt monitoring activities began at Lower Granite Dam on March 25th, with the first sample worked up on March 26th. SMP sampling was ongoing at Bonneville Dam and the Snake River basin traps this week.

Yearling Chinook dominated this week's samples at Bonneville Dam (BON). The daily average passage index for yearling Chinook at BON was just over 3,000 fish per day. This is an increase over last week's daily average passage index of only 52 fish per day. The increase in yearling Chinook passage coincides with hatchery releases above the project, particularly the release of yearling Chinook from Klickitat Hatchery on March 16th. Subyearling Chinook continued to pass in relatively high numbers, with a daily average passage index of about 1,360 per day this week. Of all the subyearling Chinook sampled this week, approximately 99.7% were fry. Passage of coho, sockeye, and steelhead at BON remained low this week, all with daily average passage indices of less than 100 fish. Among lamprey juveniles, only Pacific lamprey macrophthalmia were encountered at BON this week. The daily average collection for Pacific lamprey macrophthalmia for this week was 48 per day.

Sampling at Lower Granite Dam (LGR) began on March 25th, with the first sample worked up on March 26th. The one sample from LGR for this week was dominated by yearling Chinook, with a passage index of 5,820. The passage indices for steelhead, sockeye/kokanee, and subyearling Chinook at LGR on March 26th were 300, 50, and 20, respectively. All subyearling Chinook collected at LGR in the March 26th sample were fry. No lamprey juveniles were encountered in the March 26th sample at LGR.

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. Collections of yearling Chinook have increased this week, when compared to last week. This week's daily average collection for yearling Chinook at GRN was 180 per day. This increase is likely due to the start of hatchery releases above the trap, as the first clipped yearling Chinook for this year was encountered on March 24th. The only other species that have been collected so far this year are subyearling Chinook fry. Collections for these subyearling Chinook fry have been very low.

The Salmon River Trap at Whitebird (WTB) is located at river kilometer 103 and operated by Idaho Department of Fish and Game. Sampling at the Salmon River Trap in 2015 has been modified to only weekdays. This week's samples (Mar. 23–26) have been dominated by yearling Chinook. The daily average collection over this period was about 480 yearling Chinook per day, which is a decrease from last week's (Mar. 16–20) daily average collection of about 740 per day. Only a few steelhead have been collected at this trap so far this season.

The Snake River Trap at Lewiston (LEW) is located at river kilometer 225 and is operated by Idaho Department of Fish and Game. Collections at this site remained low this week, with only a few subyearling Chinook fry, yearling Chinook, and steelhead each day.

The Imnaha River Trap (IMN) is located at river kilometer 7 and is operated by the Nez Perce Tribe. Due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. To date, the FPC has received data from this trap through March 26th. Yearling Chinook have

dominated the collections at IMN over the past week. The daily average collection for yearling Chinook this week was about 130 per day. This is a slight decrease from the weekly average collection of about 190 the previous week. The only other species that have been collected at this trap since March 15th are subyearling Chinook fry and steelhead. One lamprey juvenile was encountered in the March 16th sample, but the species and life-stage was unknown.

In the next couple of weeks more SMP sites will begin reporting data. John Day and Rock Island will begin sampling on March 31st, with the first sample being worked up on April 1st. Other SMP bypass facilities will begin sampling the first week of April.

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 1.5 million yearling spring Chinook juveniles were released from Dworshak NFH this week. In addition, nearly 530,000 yearling summer Chinook were scheduled for release into the Lochsa River this week. About 50% of these summer Chinook were clipped while the other 50% were unclipped but had coded-wire-tags. Finally, about 570,000 summer steelhead were scheduled to be released into the Snake River, just below Hells Canyon Dam.

There are several releases of yearling fall Chinook juveniles scheduled to take place over the next 2 weeks. In all, these releases are expected to total about 915,000 fall Chinook juveniles. Of these, about 50% will be released directly from Lyons Ferry Hatchery, which is located on the Snake River below Little Goose Dam. The remaining 50% will be released

from acclimation facilities above Lower Granite Dam. In addition, approximately 1.5 million yearling spring Chinook juveniles are scheduled to be released from Sawtooth Hatchery into the Salmon River in early April. Nearly 2.1 million yearling summer Chinook are scheduled for release to this zone over the next 2 weeks. Of these, approximately 60% are scheduled to be released into the South Fork Salmon River and 40% are scheduled to be released into the Pahasimeroi River. Finally, just over 3 million summer steelhead are scheduled for release to this zone over the next 2 weeks. Of these, about 66% are scheduled for release into the Salmon River, 27% are scheduled for release into the Pahasimeroi River, and 7% are scheduled for release into the Grande Ronde River.

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.

There were no new releases scheduled for this week in this zone. However, the volitional releases of spring Chinook from Cle Elem Hatchery acclimation facilities continued this week. These volitional releases are expected to run through mid-May. There are three releases of juvenile salmonids scheduled for this zone over the next 2 weeks. The first is a release of about 250,000 yearling spring Chinook to the Walla Walla River. The second is a release of about 1.85 million yearling spring Chinook from Methow Hatchery into the Methow River. The last release is a release of 48,000 summer steelhead from the Twisp Acclimation Ponds on the Methow River.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There were no new releases scheduled for this week in this zone. Approximately 1.25 million yearling spring Chinook are scheduled for release to this zone over the next

2 weeks. Of these, about 65% are scheduled for release into the Umatilla River, 29% are scheduled for release into the Deschutes River, and 6% are scheduled for release into Hood River. Finally, 162,000 summer steelhead are scheduled for release into the Deschutes River on or around April 8th.

Adult Passage

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

Adult counts at Bonneville Dam have been updated through 3/25/15. The 2015 adult spring Chinook count at Bonneville Dam is 5 times greater than the 2014 count of 127 (515 more fish than last year). The 2015 Bonneville Dam adult spring Chinook count is about 8.1 times greater than the 10-year average count of 79 (563 more fish than the 10-year average). At Willamette Falls 65 adult spring Chinook have been counted so far this season.

The 2015 Bonneville Dam adult steelhead count of 2,903 is about 1.3 times greater than the 2014 count of 2,187 and 1.6 times greater than the 10-year average count of 1,763. This year's Lower Granite steelhead count of 5,859 is about 1.4 times greater than the 2014 count of 4,310 and about 1.7 times greater than the 10-year average count of 3,547. At Willamette Falls, the 2015 count for steelhead was 3,198 as of March 26th. This year's steelhead count is about 1.1 times greater than the 2014 count of 2,796, while being 88.5% of the 10-year average count of 3,611.

Between March 1st and March 26th, a total of 30 steelhead and 2 other salmonid species were observed over the separator at the Bonneville Juvenile Monitoring Facility (JMF). 2015 Kelt passage at the Bonneville JMF can be found at: <http://www.fpc.org/adultsalmon/bonkeltcounts.htm>.

Hatchery Releases Last Two Weeks

Hatchery Release Summary
From: **3/14/2015** to **03/27/15**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2015	1,090,000	03-16-15	03-20-15	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SU	2015	528,000	03-24-15	03-26-15	Powell Acclim Pond	Lochsa River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2015	570,000	03-23-15	04-02-15	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2015	100,000	03-19-15	03-19-15	Pinehurst Bridge	Little Salmon River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2015	300,000	03-16-15	03-18-15	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2015	2,500,000	03-16-15	04-24-15	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game Total					5,088,000				
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2015	1,548,650	03-25-15	03-26-15	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service Total					1,548,650				
Umatilla Tribe	Cascade Hatchery	CO	UN	2015	192,000	03-20-15	03-20-15	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe Total					192,000				
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2015	2,500,000	03-20-15	03-31-15	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife Total					2,500,000				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	215,311	03-15-15	05-15-15	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	216,338	03-15-15	05-15-15	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2015	217,163	03-15-15	05-15-15	Jack Creek Acclim Pond	Yakima River
Yakama Tribe Total					648,812				
Grand Total					9,977,462				

Hatchery Releases Next Two Weeks

Hatchery Release Summary
From: 3/28/2015 to 4/9/2015

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2015	160,352	04-01-15	04-03-15	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2015	160,502	04-03-15	04-07-15	Shoup Br (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2015	192,588	04-08-15	04-10-15	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2015	254,900	04-01-15	04-04-15	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2015	868,400	04-01-15	04-04-15	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2015	570,000	03-23-15	04-02-15	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2015	820,000	04-02-15	04-21-15	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2015	199,520	04-01-15	04-14-15	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2015	631,100	04-01-15	04-14-15	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2015	198,000	04-03-15	04-03-15	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2015	1,350,000	04-03-15	04-03-15	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game Total					5,405,362				
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2015	153,000	04-07-15	04-15-15	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2015	155,000	04-07-15	04-15-15	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2015	155,000	04-07-15	04-15-15	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2015	118,100	03-30-15	03-31-15	Johnson Cr Idaho	South Fork Salmon River
Nez Perce Tribe Total					581,100				
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2015	162,000	04-08-15	04-08-15	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH1	SP	2015	150,000	04-01-15	04-01-15	Corporation Guard Station	Umatilla River
Oregon Dept. of Fish and Wildlife Total					312,000				
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2015	128,900	03-31-15	04-03-15	Salmon River (ID)	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2015	1,347,000	04-06-15	04-30-15	Sawtooth Hatchery	Salmon River (ID)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2015	370,000	03-30-15	03-31-15	Warm Springs Hatchery	Deschutes River
U.S. Fish and Wildlife Service Total					1,845,900				
Umatilla Tribe	Carson NFH	CH1	SP	2015	250,443	04-01-15	04-01-15	Walla Walla River	Walla Walla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2015	225,000	04-01-15	04-01-15	Thornhollow Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2015	435,000	04-01-15	04-01-15	Imeques Acclim Pond	Umatilla River
Umatilla Tribe Total					910,443				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2015	75,000	04-09-15	04-09-15	W Fk Hood River	Hood River
Warm Springs Tribe Total					75,000				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2015	452,000	04-05-15	04-10-15	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2015	205,000	04-05-15	04-20-15	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SU	2015	185,000	04-05-15	05-15-15	Carlton Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2015	48,000	04-01-15	04-30-15	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Washougai Hatchery	CO	NO	2015	2,500,000	03-20-15	03-31-15	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife Total					3,390,000				
Grand Total					12,519,805				

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
03/13/2015	125.0	0.0	136.0	8.4	135.1	0.0	129.9	0.0	136.9	0.0	145.7	0.0	141.6	0.0
03/14/2015	95.9	0.0	97.5	0.0	103.4	0.0	107.5	0.0	116.4	0.0	118.4	0.0	121.2	0.0
03/15/2015	110.0	0.0	112.7	0.0	116.3	3.0	111.2	6.3	124.4	0.0	124.0	9.9	121.4	20.1
03/16/2015	118.0	0.0	119.0	0.0	126.5	0.0	124.3	0.0	133.5	0.0	137.7	0.0	143.1	14.5
03/17/2015	112.0	0.0	114.4	0.0	125.5	0.0	125.1	0.0	134.1	0.0	113.7	0.0	123.6	0.0
03/18/2015	107.7	0.0	108.5	0.0	113.6	0.0	110.5	0.0	120.1	0.0	112.1	0.0	117.1	0.0
03/19/2015	123.3	0.0	125.4	0.0	125.9	0.0	123.6	0.0	131.1	0.0	115.5	2.6	117.2	0.0
03/20/2015	147.8	0.0	136.0	0.0	142.8	0.0	142.0	0.5	149.9	0.0	136.2	5.0	133.0	0.0
03/21/2015	129.2	0.0	138.2	0.0	142.2	6.2	138.9	13.5	147.0	0.0	149.4	28.4	143.5	28.0
03/22/2015	136.8	0.0	136.7	0.0	142.4	2.1	141.5	1.3	150.5	0.0	154.8	6.2	162.4	31.3
03/23/2015	132.0	0.0	124.9	0.0	134.1	5.1	133.8	1.5	144.1	0.0	146.4	5.2	154.0	13.2
03/24/2015	122.9	0.0	132.8	0.0	138.2	7.6	134.1	7.2	143.0	0.0	147.9	1.8	149.8	17.5
03/25/2015	127.7	0.0	128.8	0.0	136.0	0.0	134.7	0.9	144.8	0.0	145.8	0.0	147.3	2.8
03/26/2015	135.0	0.0	126.6	0.0	134.8	0.0	133.2	0.0	141.9	0.0	143.9	0.0	144.5	2.7

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
03/13/2015	1.5	0.0	---	15.7	26.2	0.0	26.0	0.0	26.1	0.0	26.6	0.0
03/14/2015	1.5	0.0	---	10.1	29.5	0.0	29.2	0.0	30.3	0.0	28.7	0.0
03/15/2015	1.5	0.0	---	10.0	30.2	0.0	25.8	0.0	27.5	0.0	26.5	0.0
03/16/2015	1.5	0.0	---	12.0	41.5	0.0	37.2	0.0	37.1	0.0	35.8	0.0
03/17/2015	1.5	0.0	---	10.8	46.9	0.0	43.4	0.0	44.4	0.0	46.7	0.0
03/18/2015	1.5	0.0	---	10.7	49.4	0.0	47.3	0.0	49.1	0.0	47.9	0.0
03/19/2015	1.5	0.0	---	11.7	53.7	0.0	53.7	0.0	55.0	0.0	57.1	0.0
03/20/2015	1.5	0.0	---	12.3	52.7	0.0	54.2	0.0	55.5	0.0	57.8	0.0
03/21/2015	1.4	0.0	---	10.7	48.5	0.0	48.9	0.0	52.5	0.0	52.6	0.0
03/22/2015	1.4	0.0	---	11.2	47.8	0.0	45.2	0.0	47.0	0.0	46.3	0.0
03/23/2015	1.4	0.0	---	12.6	47.1	0.0	46.6	0.0	48.7	0.0	46.6	0.0
03/24/2015	1.4	0.0	---	10.5	47.4	0.0	47.0	0.0	49.6	0.0	48.4	0.0
03/25/2015	5.3	0.0	---	10.5	56.2	0.0	51.2	0.0	54.6	0.0	56.4	0.0
03/26/2015	9.6	0.0	---	11.5	63.8	0.0	59.8	0.0	66.3	0.0	62.4	0.0

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		
03/13/2015	166.7	0.0	167.4	0.0	166.7	0.0	189.7	1.2	77.3	99.1
03/14/2015	157.9	9.1	151.2	0.0	147.8	0.0	156.6	1.2	48.9	94.5
03/15/2015	141.6	9.1	135.1	0.0	132.3	0.0	145.9	1.2	37.3	95.3
03/16/2015	172.4	8.7	171.6	0.0	169.8	0.0	190.3	1.2	70.5	106.5
03/17/2015	169.1	5.0	175.9	0.0	176.2	0.0	194.3	1.2	82.5	98.6
03/18/2015	182.4	4.1	174.2	0.0	171.6	0.0	180.7	1.2	66.8	100.7
03/19/2015	201.4	0.0	206.3	0.0	202.4	0.0	212.0	1.2	93.3	105.4
03/20/2015	182.0	0.0	190.0	0.0	187.1	0.0	206.5	1.3	87.4	105.4
03/21/2015	183.7	0.0	187.5	0.0	184.9	0.0	195.6	1.2	80.0	102.0
03/22/2015	210.8	0.0	212.0	0.0	209.0	0.0	216.3	1.3	92.4	110.2
03/23/2015	193.1	0.0	194.4	0.0	193.5	0.0	221.1	1.2	99.2	108.3
03/24/2015	211.1	0.0	193.0	0.0	188.8	0.0	203.8	1.2	86.0	104.1
03/25/2015	205.0	0.0	210.0	0.0	204.9	0.0	207.7	1.3	91.2	102.9
03/26/2015	206.8	0.0	203.1	0.0	204.8	0.0	221.2	1.3	100.9	106.6

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>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
3/13	96.4	96.7	96.9	24	---	---	---	0	105.6	106.2	106.5	24	105.0	105.9	106.4	24	104.6	105.3	105.6	24
3/14	97.6	97.8	97.9	24	---	---	---	0	107.2	107.4	107.6	24	107.1	107.5	107.8	24	106.5	106.8	107.1	24
3/15	98.0	98.1	98.2	24	---	---	---	0	107.2	107.4	107.5	24	107.1	107.3	107.5	24	106.6	106.8	107.0	24
3/16	96.8	97.1	97.8	24	---	---	---	0	106.3	106.7	107.0	24	105.9	106.1	106.2	24	105.5	105.8	106.1	24
3/17	97.0	97.3	97.4	24	---	---	---	0	106.9	107.1	107.4	24	106.5	106.7	106.8	24	106.3	106.4	106.6	24
3/18	97.3	97.4	97.7	24	---	---	---	0	106.4	106.7	107.0	24	106.4	106.5	106.8	24	106.1	106.4	106.7	24
3/19	97.4	97.7	97.8	23	---	---	---	0	106.6	106.8	107.0	23	106.3	106.5	106.8	23	106.5	106.8	107.0	23
3/20	97.6	97.9	98.1	24	---	---	---	0	106.8	107.0	107.2	24	106.6	106.7	106.8	24	107.2	107.5	107.6	24
3/21	98.0	98.2	98.4	24	---	---	---	0	106.8	107.0	107.2	24	106.5	106.7	106.8	24	107.0	107.3	107.5	24
3/22	97.7	98.1	98.2	24	---	---	---	0	106.4	106.6	106.7	24	106.1	106.3	106.4	24	106.2	106.3	106.4	23
3/23	98.4	98.6	98.7	24	---	---	---	0	106.8	107.0	107.5	24	106.3	106.6	107.0	24	106.7	106.9	107.2	24
3/24	96.9	97.8	97.9	24	---	---	---	0	106.4	106.8	107.2	24	105.6	105.8	106.0	24	106.2	106.5	106.6	24
3/25	97.3	97.5	97.7	24	---	---	---	0	105.3	105.5	105.7	24	104.5	104.6	104.9	24	105.3	105.4	105.6	24
3/26	97.3	97.4	97.4	23	---	---	---	0	105.1	105.4	105.6	23	104.2	104.4	104.7	23	105.0	105.3	105.5	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>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
3/13	---	---	---	0	104.2	104.6	105.3	18	104.7	105.1	105.5	18	103.6	104.2	104.9	24	104.0	104.6	105.3	24
3/14	---	---	---	0	106.0	106.0	107.1	13	106.5	106.5	107.6	13	105.8	106.0	106.1	24	105.8	106.0	106.4	24
3/15	---	---	---	0	105.4	105.5	105.7	18	106.5	106.9	110.0	18	106.1	106.3	106.4	24	108.5	110.7	113.2	24
3/16	---	---	---	0	104.2	104.3	104.6	15	104.6	104.8	105.0	15	104.5	104.8	105.3	24	105.1	105.5	106.5	24
3/17	106.3	106.6	107.2	24	105.2	105.4	105.7	18	105.6	105.9	106.2	18	105.4	105.5	105.7	24	105.8	105.9	106.2	24
3/18	106.4	106.9	108.1	24	105.2	105.4	105.8	20	105.7	106.0	106.6	20	104.8	105.1	105.2	24	105.2	105.4	105.6	24
3/19	106.3	106.6	107.1	23	105.7	106.1	106.5	23	106.1	106.6	107.0	23	105.4	105.6	105.9	23	105.8	106.0	106.3	23
3/20	106.9	107.1	107.3	24	106.0	106.2	106.5	23	106.4	106.6	106.8	23	106.1	106.4	106.6	24	106.6	107.0	107.6	24
3/21	106.7	107.0	107.1	24	106.5	106.8	106.9	24	107.4	108.8	112.6	24	106.3	106.5	106.8	24	110.5	113.8	119.5	24
3/22	105.8	106.0	106.1	24	105.7	105.8	105.9	24	105.9	106.3	107.4	24	106.5	107.3	108.0	24	107.3	108.2	110.8	24
3/23	106.6	106.9	107.1	24	105.9	106.1	106.5	24	107.0	107.8	108.4	24	106.6	106.8	107.2	24	108.1	109.3	112.3	24
3/24	105.9	106.2	106.6	24	105.5	105.8	106.0	24	106.8	108.5	111.3	24	106.6	106.9	107.1	24	108.9	111.0	114.0	24
3/25	105.0	105.2	105.4	24	104.8	105.0	105.2	24	104.9	105.2	105.5	24	105.7	106.4	107.2	24	106.4	107.0	108.0	24
3/26	104.8	105.1	105.5	23	104.8	105.0	105.4	23	104.8	105.2	105.6	23	106.1	106.5	107.5	23	106.4	106.8	107.4	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>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High	
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg		
3/13	102.9	103.7	104.2	24	103.0	103.7	104.3	24	103.6	103.9	104.3	24	103.6	103.9	104.2	24	103.9	104.7	105.0	24
3/14	104.7	105.1	105.3	24	104.7	105.0	105.2	24	104.5	104.7	104.8	24	104.4	104.5	104.7	24	104.8	105.1	105.2	24
3/15	105.6	105.9	106.8	24	105.5	105.8	106.6	24	104.5	104.8	104.9	24	105.9	107.4	109.2	24	104.3	104.6	104.8	24
3/16	104.1	105.1	106.7	24	104.6	105.3	106.6	23	103.4	103.8	104.1	24	103.4	103.7	103.9	24	104.1	104.8	106.0	24
3/17	104.6	105.2	105.5	24	104.5	105.0	105.3	23	104.6	105.0	105.4	24	104.5	104.9	105.3	24	104.1	104.4	104.6	24
3/18	104.2	104.5	104.7	24	104.2	104.4	104.7	24	104.4	104.8	105.2	24	104.2	104.4	104.8	24	104.0	104.5	105.0	24
3/19	104.7	105.0	105.4	23	104.7	105.0	105.2	23	104.9	105.4	105.7	24	104.6	105.1	105.3	24	104.6	105.0	105.3	24
3/20	105.3	105.6	105.9	24	105.4	105.6	105.8	24	105.6	105.8	106.0	24	105.4	105.6	105.8	24	105.3	105.6	105.8	24
3/21	107.2	108.8	112.4	24	107.1	108.7	112.1	24	105.5	105.7	106.2	24	109.4	112.8	115.2	24	105.5	106.2	109.5	24
3/22	105.4	105.8	106.7	24	105.5	105.8	107.1	24	105.5	105.8	106.0	24	105.6	105.8	105.9	24	108.0	110.2	113.0	24
3/23	106.8	107.4	107.8	24	106.8	107.4	107.7	24	106.9	107.6	107.9	24	107.0	107.9	108.8	24	105.6	105.8	105.9	24
3/24	105.9	106.8	108.8	24	105.9	106.7	108.8	24	105.7	106.2	107.1	24	105.9	106.5	107.1	24	106.0	106.6	107.5	24
3/25	105.6	106.2	108.1	24	105.7	106.4	108.4	24	105.0	105.2	105.3	24	105.0	105.1	105.2	24	104.8	105.0	105.2	24
3/26	105.8	106.3	106.6	23	105.7	106.3	106.5	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	Priest R. Dnst			#	Pasco			#	Dworshak			#	Clrwrtr-Peck			#	Anatone			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
3/13	103.6	104.3	104.5	24	---	---	---	0	102.0	102.9	103.9	24	---	---	---	0	---	---	---	0
3/14	104.5	104.7	104.9	24	---	---	---	0	102.3	102.6	103.1	24	---	---	---	0	---	---	---	0
3/15	106.0	108.0	111.0	24	---	---	---	0	102.4	102.7	103.1	24	---	---	---	0	---	---	---	0
3/16	105.6	107.0	110.1	24	---	---	---	0	104.1	105.9	106.9	24	---	---	---	0	---	---	---	0
3/17	103.7	104.0	104.2	24	---	---	---	0	105.7	106.2	106.7	24	---	---	---	0	---	---	---	0
3/18	103.7	104.1	104.4	24	---	---	---	0	103.3	104.6	105.2	24	101.3	101.3	101.7	10	---	---	---	0
3/19	104.2	104.6	104.8	24	---	---	---	0	102.3	103.2	104.3	23	101.2	101.9	102.6	23	---	---	---	0
3/20	104.9	105.2	105.3	24	---	---	---	0	102.8	103.6	104.5	24	101.7	102.2	102.4	24	---	---	---	0
3/21	107.6	110.6	113.6	24	---	---	---	0	103.0	103.8	105.1	24	101.5	102.1	102.5	24	---	---	---	0
3/22	109.9	111.4	113.3	24	---	---	---	0	102.8	103.6	104.7	24	101.1	101.6	102.1	24	---	---	---	0
3/23	106.2	107.1	109.3	24	---	---	---	0	102.7	103.1	104.1	24	101.1	101.6	102.3	24	---	---	---	0
3/24	107.1	108.8	109.6	24	---	---	---	0	102.4	102.8	103.4	24	99.9	100.5	100.9	24	---	---	---	0
3/25	104.6	104.8	105.6	24	---	---	---	0	98.4	101.6	103.2	24	99.8	100.4	101.5	24	---	---	---	0
3/26	---	---	---	0	---	---	---	0	94.5	94.8	95.1	23	99.8	100.3	100.7	23	---	---	---	0

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwrtr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
3/13	---	---	---	0	---	---	---	0	102.7	103.3	103.6	20	---	---	---	0	102.6	103.5	103.7	24
3/14	---	---	---	0	---	---	---	0	103.4	103.6	103.8	24	---	---	---	0	103.8	104.0	104.1	24
3/15	---	---	---	0	---	---	---	0	103.1	103.3	103.5	24	---	---	---	0	103.6	104.0	104.3	24
3/16	---	---	---	0	---	---	---	0	101.8	101.9	102.2	24	103.4	103.5	103.7	14	102.7	103.2	103.3	23
3/17	100.4	100.4	101.0	8	102.6	102.6	102.7	11	102.3	102.5	102.9	24	103.7	104.0	104.3	24	103.2	103.3	103.7	24
3/18	100.7	101.5	102.9	24	101.8	102.1	102.4	24	101.7	101.9	102.2	24	103.3	103.7	104.2	24	102.8	103.0	103.3	24
3/19	101.2	102.4	103.5	23	101.0	101.2	101.4	23	100.9	101.0	101.2	23	103.5	103.7	103.8	23	103.3	103.7	103.9	23
3/20	101.3	102.2	103.0	24	101.7	101.8	102.2	24	101.4	101.7	102.0	24	103.8	103.9	104.0	24	103.8	104.0	104.0	24
3/21	101.1	101.9	102.9	24	101.4	101.7	102.2	24	101.2	101.4	101.8	24	103.7	104.0	104.6	24	103.0	103.3	103.8	24
3/22	100.9	101.9	102.6	24	102.0	102.2	102.4	24	101.7	102.0	102.1	24	103.5	103.7	104.3	24	102.7	102.9	103.1	24
3/23	100.7	101.2	102.3	24	102.4	102.5	102.6	24	102.0	102.1	102.4	24	103.0	103.4	103.6	24	102.3	102.6	102.7	24
3/24	99.9	100.0	100.1	24	101.8	102.4	102.7	24	101.4	102.0	102.2	24	101.7	102.2	102.6	24	101.1	101.6	102.1	24
3/25	100.5	101.4	102.1	24	100.4	100.5	100.7	24	100.1	100.2	100.3	24	100.2	100.3	100.6	24	99.8	99.9	100.0	24
3/26	100.5	101.5	102.4	23	100.6	100.8	101.0	23	100.4	100.7	101.0	23	100.1	100.4	100.5	23	100.2	100.6	101.5	23

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#
	24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High		24 h Avg	12 h Avg	High	
3/13	---	---	---	0	104.5	105.3	105.5	24	---	---	---	0	103.8	104.4	104.9	24	---	---	---	0
3/14	---	---	---	0	105.9	106.2	107.5	24	---	---	---	0	104.6	104.8	105.2	24	---	---	---	0
3/15	---	---	---	0	105.8	106.1	106.3	24	---	---	---	0	104.6	104.9	105.3	24	---	---	---	0
3/16	---	---	---	0	104.8	105.2	106.6	24	---	---	---	0	103.6	103.9	104.5	24	---	---	---	0
3/17	---	---	---	0	105.8	106.5	107.1	24	---	---	---	0	103.8	103.9	104.2	24	---	---	---	0
3/18	---	---	---	0	103.3	103.6	104.1	24	---	---	---	0	103.7	104.0	104.4	24	---	---	---	0
3/19	---	---	---	0	102.9	103.1	103.6	23	---	---	---	0	104.3	104.8	105.0	23	---	---	---	0
3/20	---	---	---	0	103.4	103.5	103.7	24	---	---	---	0	105.3	105.6	105.8	24	---	---	---	0
3/21	---	---	---	0	103.3	103.5	103.7	24	---	---	---	0	104.2	104.5	104.9	24	---	---	---	0
3/22	---	---	---	0	103.4	103.6	103.8	24	---	---	---	0	103.5	103.7	104.0	24	---	---	---	0
3/23	---	---	---	0	103.5	103.7	104.3	24	104.0	104.1	104.3	12	103.3	103.5	103.8	24	---	---	---	0
3/24	---	---	---	0	102.6	103.1	103.4	24	103.4	103.9	104.3	24	102.9	103.2	103.5	24	---	---	---	0
3/25	---	---	---	0	101.4	101.6	103.4	24	102.6	102.8	103.0	24	102.3	102.4	102.7	24	---	---	---	0
3/26	---	---	---	0	101.0	101.3	101.6	23	102.6	102.8	103.0	23	102.5	102.9	103.3	23	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>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>				
3/13	---	---	---	0	105.1	105.4	105.6	24	---	---	---	0	106.8	107.5	108.1	24	---	---	---	0
3/14	---	---	---	0	107.5	107.9	108.2	24	---	---	---	0	108.2	108.3	108.5	24	---	---	---	0
3/15	---	---	---	0	108.2	108.5	108.8	24	---	---	---	0	108.4	108.8	109.1	24	---	---	---	0
3/16	---	---	---	0	107.4	107.7	108.1	24	---	---	---	0	106.9	107.3	107.8	24	---	---	---	0
3/17	---	---	---	0	105.5	106.5	107.9	24	107.8	107.8	108.3	11	107.2	107.4	107.7	24	---	---	---	0
3/18	---	---	---	0	104.9	105.9	107.7	24	106.8	107.0	107.4	24	106.3	106.5	106.7	24	106.4	106.5	106.7	16
3/19	---	---	---	0	105.8	106.2	106.5	23	106.9	107.1	107.3	23	106.4	106.6	106.9	23	106.5	106.7	106.9	23
3/20	---	---	---	0	105.0	105.2	105.3	24	106.8	107.0	107.2	24	106.3	106.5	106.7	24	106.5	106.7	106.9	20
3/21	---	---	---	0	104.8	104.9	105.2	24	105.9	106.1	106.6	24	105.5	105.7	106.1	24	105.4	105.6	106.1	24
3/22	---	---	---	0	104.9	105.1	105.3	24	105.9	106.1	106.5	24	105.6	105.9	106.1	24	105.4	105.6	105.8	24
3/23	104.6	104.6	104.9	16	104.9	105.0	105.1	24	105.8	105.9	106.1	24	105.5	105.6	105.7	24	105.4	105.5	105.7	24
3/24	104.9	105.2	105.4	24	104.7	105.0	105.3	24	104.9	105.3	106.1	24	104.6	105.0	105.6	24	104.1	104.7	105.7	24
3/25	104.7	104.9	105.0	24	104.2	104.3	104.5	24	104.0	104.1	104.3	24	103.7	103.9	103.9	24	103.6	103.9	103.9	24
3/26	104.5	104.8	105.5	23	104.0	104.2	104.6	23	104.1	104.4	105.1	23	103.8	104.2	104.5	23	104.3	104.6	104.9	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	<u>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>				
3/13	106.0	106.7	106.9	24	---	---	---	0	106.4	106.8	107.0	24	106.0	106.5	107.2	24	---	---	---	0
3/14	107.3	107.5	107.7	24	---	---	---	0	107.8	108.1	108.4	24	106.4	106.7	106.8	24	---	---	---	0
3/15	107.8	108.3	108.8	24	---	---	---	0	108.8	109.4	110.1	24	106.8	107.2	107.6	24	---	---	---	0
3/16	106.4	106.6	107.0	24	---	---	---	0	107.4	108.1	108.9	24	106.7	107.9	109.1	24	---	---	---	0
3/17	106.9	107.2	107.5	24	---	---	---	0	106.9	107.3	107.6	24	105.8	106.3	106.7	24	---	---	---	0
3/18	106.6	106.8	106.9	24	106.4	106.4	106.5	10	107.6	107.9	108.2	24	107.4	108.6	109.3	24	110.5	110.5	110.7	9
3/19	106.6	106.8	107.0	23	106.8	107.2	107.5	23	108.0	108.3	108.9	23	107.6	108.6	109.6	23	110.9	111.3	111.5	23
3/20	106.7	106.8	106.9	20	107.1	107.3	107.4	24	108.0	108.3	108.9	24	107.3	107.8	108.4	24	110.9	111.2	111.5	24
3/21	105.6	105.8	106.2	24	106.2	106.5	107.0	24	107.1	107.3	107.5	24	107.0	107.4	107.9	24	110.1	110.3	110.5	24
3/22	105.6	105.8	106.1	24	105.9	106.0	106.2	24	106.8	107.0	107.2	24	106.2	106.8	107.1	24	110.1	110.4	110.5	24
3/23	105.6	105.7	105.8	24	105.3	105.5	105.7	24	106.2	106.4	106.8	24	106.1	106.4	106.7	24	109.9	110.2	110.5	24
3/24	104.6	105.0	105.8	24	104.2	104.5	105.7	24	105.2	105.5	106.5	24	104.7	105.4	105.8	24	109.0	109.4	109.8	24
3/25	103.8	104.1	104.3	24	103.7	103.8	103.9	24	105.1	105.1	105.2	24	104.6	105.2	105.9	24	109.2	109.7	110.0	24
3/26	104.3	104.8	105.1	23	104.3	104.8	105.2	23	105.9	106.2	106.5	23	105.9	107.1	108.2	23	110.3	110.9	111.4	23

Two-Week Summary of Passage Indices

* See sampling comments

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

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

Two classes of fish counts are shown in these tables:

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

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

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

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

The classes of counts presented in the report are defined below for each site. Most samples occur over a 24-hr period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

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

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

Definitions for Smolt Index Counts

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

IMN (Collection) = Imnaha River Trap : Collection Counts

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Two Week Transportation Summary

Source: Fish Passage Center

Updated:

3/27/15 8:15 AM

		Species				
Site	Data	CH0	CH1	ST	SO	Grand Total
LGR	Sum of NumberCollected	20	5,820	300	50	6,190
	Sum of NumberBarged	0	0	0	0	0
	Sum of NumberBypassed	19	5,813	300	50	6,182
	Sum of NumberTrucked	0	0	0	0	0
	Sum of SampleMorts	1	7	0	0	8
	Sum of FacilityMorts	0	0	0	0	0
	Sum of ResearchMorts	0	0	0	0	0
	Sum of TotalProjectMorts	1	7	0	0	8
Total Sum of NumberCollected		20	5,820	300	50	6,190
Total Sum of NumberBarged		0	0	0	0	0
Total Sum of NumberBypassed		19	5,813	300	50	6,182
Total Sum of NumberTrucked		0	0	0	0	0
Total Sum of SampleMorts		1	7	0	0	8
Total Sum of FacilityMorts		0	0	0	0	0
Total Sum of ResearchMorts		0	0	0	0	0
Total Sum of TotalProjectMorts		1	7	0	0	8

YTD Transportation Summary

Source: Fish Passage Center

Updated:

3/27/15 8:15 AM

		Species				
Site	Data	CH0	CH1	SO	ST	Grand Total
LGR	Sum of NumberCollected	20	5,820	50	300	6,190
	Sum of NumberBarged	0	0	0	0	0
	Sum of NumberBypassed	19	5,813	50	300	6,182
	Sum of NumberTrucked	0	0	0	0	0
	Sum of SampleMorts	1	7	0	0	8
	Sum of FacilityMorts	0	0	0	0	0
	Sum of ResearchMorts	0	0	0	0	0
	Sum of TotalProjectMorts	1	7	0	0	8
Total Sum of NumberCollected		20	5,820	50	300	6,190
Total Sum of NumberBarged		0	0	0	0	0
Total Sum of NumberBypassed		19	5,813	50	300	6,182
Total Sum of NumberTrucked		0	0	0	0	0
Total Sum of SampleMorts		1	7	0	0	8
Total Sum of FacilityMorts		0	0	0	0	0
Total Sum of ResearchMorts		0	0	0	0	0
Total Sum of TotalProjectMorts		1	7	0	0	8

Cumulative Adult Passage at Mainstem Dams Through: 03/26

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	03/25	642	3	127	2	79	0	0	0	0	0	0	0	0	0	0	0	0	0
TDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	02/26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	03/25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD		0	0	0	0	0	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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	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	03/26	65	0	8	0	43	0	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	03/25	0	0	5	-2	0	0	1	2	0	2903	2187	1763	1549	699	474	0	0	0
TDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	02/26	0	0	0	0	0	0	0	0	0	1663	0	0	608	0	0	0	0	0
LGS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	03/25	0	0	0	0	0	0	0	0	0	5859	4310	3547	2391	1632	948	0	0	0
PRD		0	0	0	0	0	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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RRH		0	0	0	0	0	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	03/26	1	0	9	0	0	0	0	0	0	3198	2796	3611	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.