



# Fish Passage Center

## Weekly Report #16-3

April 1, 2016

### Summary of Events

#### Water Supply

Precipitation throughout the Columbia Basin has varied between 114% and 149% of average at individual sub-basins over March. Precipitation above The Dalles has been 136% of average over March. Over the 2016 water year, precipitation has ranged between 97% and 118% of average.

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

Location	Water Year 2016		Water Year 2016	
	March 1–30, 2016		October 1, 2015 to March 30, 2016	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia above Coulee	4.48	137	24.5	108
Snake River above Ice Harbor	2.95	129	14.5	105
Columbia above The Dalles	3.50	136	18.8	109
Kootenai	4.19	130	24.6	110
Clark Fork	2.79	114	14.6	97
Flathead	4.66	143	23.1	112
Pend Oreille River Basin above Waneta Dam	4.18	141	20.4	106
Salmon River Basin	3.63	124	18.2	105
Upper Snake Tributaries	3.46	136	13.6	88
Clearwater	6.03	149	28.2	109
Willamette River above Portland	9.73	136	58.5	118

Snowpack within the Columbia Basin has been slightly above average. Snowpack in the Columbia River for basins above the Snake River confluence is 104% of average. For Snake River Basins the snowpack is 109% of average. For lower Columbia Basins between McNary and Bonneville Dam snowpack is 104% of average.

Table 2 displays the March 31<sup>st</sup> ESP runoff volume forecasts for multiple reservoirs along with the March COE forecasts at Libby and Dworshak. The March 31<sup>st</sup> ESP forecast at The Dalles between April and August is 89,522 Kaf (102% of average).

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

Location	March 31, 2016 5-day QPF ESP	
	% Average (1981–2010)	Runoff Volume (Kaf)
The Dalles (Apr–Aug)	102	89,522
Grand Coulee (Apr–Aug)	103	58,364
Libby Res. Inflow, MT (Apr–Aug)	94 110*	5,554 6,472*
Hungry Horse Res. Inflow, MT (Apr–Aug)	90	1,744
Lower Granite Res. Inflow (Apr–July)	102	20,242
Brownlee Res. Inflow (Apr–July)	89	4,853
Dworshak Res. Inflow (Apr–July)	107 84*	2,590 2,025*

\* Denotes COE March Forecast

Grand Coulee Reservoir is at 1,253.2 feet (3-31-16) and has held steady over the last week. Outflows at Grand Coulee have ranged between 77.0 and 123.1 Kcfs over the last week. The April 10<sup>th</sup> FC Elevation at Grand Coulee is currently 1,264.4 feet (based on March Final Forecast). Grand Coulee will be drafted to 1,255 ft. and below this year for a period of eight weeks for drum gate maintenance (mid-March to mid-May).

The Libby Reservoir is currently at elevation 2,397.6 feet (3-31-16) and has drafted 1.8 feet over the previous week. Daily average outflows at Libby Dam have been 5.2–15.0 Kcfs over the last week. The April 10<sup>th</sup> FC Elevation at Libby is currently 2,397.8 feet (based on March Final Forecast).

Hungry Horse is currently at an elevation of 3518.4 feet (3-31-16) and has held steady over the last week. Outflows at Hungry Horse have been 2.1–3.2 Kcfs over the last week. The April 10<sup>th</sup> FC Elevation at Hungry Horse is currently 3,544.9 feet (based on March Final Forecast).

Dworshak is currently at an elevation of 1,568.2 feet (3-31-16) and has refilled 3.2 feet over the last week. Outflows have been 2.2–7.7 Kcfs over the last week. The April 10<sup>th</sup> System FC Elevation at Dworshak is currently 1,570.5 feet (based on March Final Forecast). The April 10<sup>th</sup> Local FC at Dworshak is 1,576.3 feet.

The Brownlee Reservoir was at an elevation of 2,044.5 feet on March 31, 2016, and has drafted 4.6 feet over the last week. The April 10<sup>th</sup> FC Elevation at Brownlee is currently 2,057.6 feet (based on March Final Forecast).

### Smolt Monitoring

Smolt monitoring activities began at Lower Granite Dam on March 25<sup>th</sup>, with the first sample tallied and reported on March 26<sup>th</sup>. Smolt Monitoring Program (SMP) sampling at Bonneville Dam and all SMP traps continued this week. Sampling at all other SMP bypass facilities (Little Goose Dam, Lower Monumental Dam, McNary Dam, John Day Dam, and Rock Island Dam) is scheduled to begin today or soon thereafter.

This week's samples at Bonneville Dam (BON) were dominated by subyearling and yearling Chinook. This week's daily average passage index for subyearling Chinook at BON was about 440 per day, which is a decrease from last week's daily average passage index of about 750 per day. Of the subyearling Chinook sampled this week, approximately 94% were fry. This week's daily average passage index for yearling Chinook at BON was about 340, which is a decrease from last week's daily average passage index of about 490. Coho, sockeye, and steelhead juveniles were also collected at BON this week, but in small numbers. This week's collections also contained both Pacific lamprey ammocoetes and macrophthalmia. One Pacific lamprey ammocoete was sampled on each of March 30<sup>th</sup> and 31<sup>st</sup>. This equated to an estimated collection of five ammocoetes each day. Pacific lamprey macrophthalmia were encountered every day this week. The daily average collection for Pacific lamprey macrophthalmia

for this week was about 100 per day, which is a decrease over last week's daily average collection of about 180 per day.

Sampling at Lower Granite Dam (LGR) began on March 25<sup>th</sup>, with the first sample tallied and reported on March 26<sup>th</sup>. Since the beginning of sampling, collections at LGR have been dominated by yearling Chinook. This week's daily average passage index for yearling Chinook was about 11,700 per day. Steelhead were the second most abundant salmonid this week, with a daily average passage index of nearly 1,050 per day. This week's daily average passage index for subyearling Chinook at LGR was about 425 per day. To date, all of the subyearling Chinook that have been collected at LGR this year were fry. Coho were also collected at LGR this week but in relatively low numbers. One Pacific lamprey ammocoete and nine macrophthalmia were sampled in the March 26 sample at LGR.

The Grande Ronde Trap is operated by the Oregon Department of Fish and Wildlife and is located at river kilometer 2 in the Grande Ronde River. Yearling Chinook continued to dominate the collections this week. The daily average collection for yearling Chinook this week was about 260 per day, which is an increase from last week's daily average collection of 75 per day. The increase in yearling Chinook collections is largely due to the arrival of hatchery yearling Chinook from an upstream release. Over the last week, approximately 92% of the yearling Chinook collected at the trap were of known hatchery origin (i.e., clipped and/or CWT). No other salmonids were encountered in this week's samples.

The Salmon River Trap is located at river kilometer 103 and operated by Idaho Department of Fish and Game. Similar to 2015, sampling at the Salmon River Trap in 2016 is five days per week. Similar to last week, yearling Chinook were the only salmonids encountered in this week's samples. This week's daily average collection for yearling Chinook was about 600 per day, which is a decrease over last week's daily average collection of nearly 1,250 per day. Approximately 87% of the yearling Chinook encountered at the Salmon River Trap this week were of known hatchery origin.

The Snake River Trap is located at river kilometer 225 and operated by Idaho Department of Fish and Game. To date, salmonid collections at the Snake River

Trap have been relatively low, with yearling Chinook and steelhead dominating the collections from the week. Other than yearling Chinook and steelhead, a few Chinook fry (i.e., subyearling Chinook) were collected this week.

The Imnaha River Trap is located at river kilometer seven and is operated by the Nez Perce Tribe. Sampling at the Imnaha River Trap is year-round and, for 2016, the Fish Passage Center has been receiving data since the January 1, 2016 sample. However, due to the remote nature of the trap, the Nez Perce Tribe is able to send collection data to the FPC only periodically. Currently, the FPC only has data from Imnaha Trap through March 30<sup>th</sup>. Yearling Chinook dominated the collections over the last week (Mar. 24–30), with a daily average collection of about 90 fish per day. All of the yearling Chinook juveniles that were collected at the trap this week were unclipped. Steelhead juveniles were also collected at the trap this week, but in relatively low numbers. The daily average collection for steelhead juveniles at the trap this week was 11 per day. Finally, one Pacific lamprey ammocoete was encountered in the sample from March 29<sup>th</sup>. This is the second Pacific lamprey ammocoetes collected at this trap so far this season.

## Hatchery Release

**Snake River Zone:** The Snake River Zone encompasses the Snake River and its tributaries from its confluence with the Columbia River to Hells Canyon Dam. Approximately 193,000 yearling fall Chinook juveniles were scheduled to be released in this zone this week. Of these, about 163,000 (84%) were released from Captain John Landing Acclimation Facility on the Snake River and the remaining 30,000 (16%) were released from Big Canyon Creek Acclimation Facility on the Clearwater River. Approximately 2.5 million yearling spring Chinook were scheduled for release this week. Of these, about 65% were released from Sawtooth Hatchery into the Salmon River, 27% were released into the Clearwater River and its tributaries, and 9% were released into the Tucannon River. In addition, nearly 1.24 million yearling summer Chinook were scheduled to be released to this zone this week. Of these, approximately 90% were to be released from Pahasimeroi Hatchery into the Pahasimeroi River. The remaining 10% were to be released into

Johnson Creek, a tributary of the South Fork Salmon River. Finally, 129,000 summer steelhead juveniles were scheduled to be released into the Salmon River this week.

Approximately 764,000 yearling fall Chinook juveniles are scheduled for release to this zone over the next two weeks. Of these, 487,000 (64%) will be released from Lyons Ferry Hatchery, which is located on the Snake River above Lower Monumental Dam. The remaining 277,000 (36%) are scheduled to be released from acclimation facilities above Lower Granite Dam. The releases of yearling fall Chinook above Lower Granite include 123,000 scheduled for release from Big Canyon Creek Acclimation Facility on the Clearwater River and 154,000 scheduled for release from Pittsburg Landing Acclimation Facility on the Snake River. In addition, nearly 1.8 million yearling spring Chinook are scheduled to be released to this zone over the next two weeks. Of these, about 37% are scheduled to be released into the Clearwater River, 36% are scheduled for release into the Grande Ronde River and its tributaries, and 27% are scheduled for release into the Imnaha River. Just over 1.0 million yearling summer Chinook are scheduled to be released into the South Fork Salmon River beginning on or around April 4<sup>th</sup>. Finally, nearly 6.13 million summer steelhead are scheduled for release to this zone over the next two weeks. Of these, about 44% are scheduled for release into the Salmon River and its tributaries, 47% are scheduled for release into the Clearwater River and its tributaries, and 6% are scheduled for release into the Grande Ronde River. The remaining 3% are scheduled to be released from release sites located below Little Goose Dam. These release sites include Lyons Ferry Hatchery and the Tucannon 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. Approximately 250,000 yearling spring Chinook were scheduled to be released into the Walla Walla River this week. In addition, nearly 730,000 coho juveniles were scheduled to be released into the Wenatchee (53%) and Methow (47%) rivers this week. These coho juveniles are part of a Yakama Tribal Program to reintroduce coho into the Wenatchee, Methow, and Yakima River basins. Finally, about 180,000 steelhead juveniles were scheduled to be released from Ringgold Hatchery, directly into the Columbia River.

There are several releases of juvenile salmonids scheduled for this zone over the next two weeks. Just over 2.75 million yearling spring Chinook are scheduled to be released into this zone over the next two weeks. These spring Chinook releases are scheduled to occur on the Wenatchee River (52%), Methow River (22%), Okanogan River (7%), and directly into the Columbia River just below Chief Joseph Dam (19%). In addition, just over 2.0 million yearling summer Chinook are scheduled for release into this zone over the next two weeks. Of these, approximately 59% are scheduled to be release directly into the Columbia River at Chelan Falls and just below Chief Joseph Dam while the remaining 41% are scheduled to be released into the Okanogan River and its tributaries. Nearly 1.3 million coho juveniles are scheduled to be released into the Yakima River over the next two weeks. As with the coho releases that occurred this week, these future coho releases are part of a Yakama Tribal Program to reintroduce coho into the Wenatchee, Methow, and Yakima River basins. Finally, nearly 318,000 summer steelhead juveniles are scheduled for release into this zone over the next two weeks. These steelhead releases are scheduled to occur throughout this river zone, including releases to the Okanogan (13%), Methow (41%), Walla Walla (31%), and Touchet (15%) rivers.

**Lower Columbia Zone:** The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. There was only one new release scheduled for this zone this week. On or around March 30<sup>th</sup>, about 133,000 yearling spring Chinook were scheduled to be released from Warm Springs NFH into the Deschutes River.

Approximately 6.0 million subyearling fall Chinook tules are scheduled for release from Spring Creek National Fish Hatchery on or around April 5<sup>th</sup>. In addition, several releases of yearling spring Chinook juveniles are scheduled for this zone over the next two weeks. In all, these spring Chinook releases are expected to total over 3.7 million juveniles and are scheduled to occur throughout the river zone. These yearling spring Chinook are scheduled to be released into the Umatilla (24%), Deschutes (7%), Hood (2%), Little White Salmon (36%), and Wind (31%) rivers. About 183,000 summer steelhead juveniles are scheduled for release into the Deschutes River over the

next two weeks. Finally, about 15,500 winter steelhead juveniles are scheduled to be released into Rock Creek, near Stevenson, Washington, on or around April 15<sup>th</sup>.

### Adult Passage

Bonneville Dam uses video counts from January 1<sup>st</sup> through March 31<sup>st</sup> and direct counting after this period. Bonneville Dam counts adult salmon and steelhead year round. Lower Granite Dam uses video counts from March 1<sup>st</sup> through March 31<sup>st</sup> and direct counting after this period. Lower Granite Dam counts adult salmon and steelhead through December 30<sup>th</sup> each year. Willamette Falls also uses video counts and reports adult counts year round. Video counts can cause a delay in posting the count data to the web, because the counting staff at the projects have to review the tapes. The FPC collects the adult count data from projects throughout the day, continuously updating our Adult Dam Count report linked on our homepage ([www.fpc.org](http://www.fpc.org)). During the winter season at Bonneville Dam (from 1/1/2016 through 3/29/2016), 166 adult Chinook and 2,678 adult steelhead were counted. In 2015 for the same time frame, 1,259 adult Chinook and 3,126 adult steelhead were counted. The 2016 Bonneville Dam winter season count of adult Chinook had 1,093 fewer fish than the 2015 count. The 2016 adult steelhead count had 448 fewer fish than the 2015 winter count.

The Willamette Falls cumulative steelhead count from January 1<sup>st</sup> through March 30<sup>th</sup> is 4,363. The 2016 Willamette Falls winter steelhead count was 1.3 times greater than the 2015 count of 3,307, while having 449 more fish than the 10-year average count of 3,914. This year's Lower Granite steelhead count of 3,644 is 55% of the 2015 count of 6,591 and has 837 fewer fish than the 10-year average count of 4,481.

The Bonneville Dam corner collector was opened on March 5<sup>th</sup> for kelt passage. Between March 1<sup>st</sup> and March 28<sup>th</sup>, a total of 73 steelhead (and 5 other salmonid species) were observed over the separator at the Bonneville Juvenile Monitoring Facility (JMF). Kelt passage at the Bonneville JMF can be found at: [www.fpc.org/adultsalmon/bonkeltcounts.htm](http://www.fpc.org/adultsalmon/bonkeltcounts.htm).

## Hatchery Releases Last Two Weeks

**Hatchery Release Summary**  
From: 3/19/2016 to 04/01/16

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	478,063	03-30-16	04-01-16	Mill Cr Bridge	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	1,234,943	03-23-16	03-29-16	Red River	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SU	2016	237,198	03-21-16	03-22-16	Powell Acclim Pond	Lochsa River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	560,000	03-21-16	04-02-16	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	66,859	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	1,054,263	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2016	154,000	04-01-16	04-01-16	Sawtooth Hatchery	Salmon River (ID)
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2016	1,463,000	04-01-16	04-01-16	Sawtooth Hatchery	Salmon River (ID)
<b>Idaho Dept. of Fish and Game Total</b>					<b>5,248,326</b>				
Nez Perce Tribe	Cascade Hatchery	CO	UN	2016	484,000	03-07-16	03-21-16	Lapwai Creek	Clearwater River M F
Nez Perce Tribe	Dworshak NFH	CO	UN	2016	551,000	03-07-16	03-21-16	Kooskia Hatchery	Clearwater River M F
Nez Perce Tribe	Eagle Creek NFH	CO	UN	2016	282,000	03-07-16	03-21-16	Lapwai Creek	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	30,000	03-28-16	03-28-16	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	163,000	04-01-16	04-01-16	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2016	118,117	03-28-16	03-31-16	Johnson Cr Idaho	South Fork Salmon River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2016	191,372	04-01-16	04-01-16	Lolo Creek	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>1,819,489</b>				
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	03-25-16	03-25-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	03-25-16	03-25-16	Wychus Creek	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	15,000	03-25-16	03-25-16	Metolius River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>25,000</b>				
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2016	1,470,000	03-23-16	03-24-16	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	129,000	03-31-16	04-03-16	McNabb/Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2016	133,000	03-30-16	03-30-16	Warm Springs Hatchery	Deschutes River
<b>U.S. Fish and Wildlife Service Total</b>					<b>1,732,000</b>				
Umatilla Tribe	Bonneville Hatchery	CH1	FA	2016	265,000	03-22-16	03-22-16	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe	Carson NFH	CH1	SP	2016	250,000	03-31-16	03-31-16	Walla Walla River	Walla Walla River
<b>Umatilla Tribe Total</b>					<b>515,000</b>				
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	85,000	03-25-16	04-15-16	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	200,000	03-20-16	04-07-16	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	ST	SU	2016	36,900	03-01-16	03-31-16	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2016	180,000	04-01-16	04-30-16	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2016	220,000	04-01-16	04-15-16	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2016	2,504,900	03-15-16	04-01-16	Klickitat River	Klickitat River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>3,226,800</b>				
Yakama Tribe	Cascade Hatchery	CO	UN	2016	110,086	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2016	110,126	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2016	58,499	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2016	110,615	04-01-16	04-30-16	Leavenworth Hatchery	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2016	38,503	04-01-16	04-30-16	Methow River	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	42,471	04-01-16	04-30-16	Winthrop Hatchery	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	47,124	04-01-16	04-30-16	Methow River	Methow River
Yakama Tribe	Winthrop NFH	CO	UN	2016	212,356	04-01-16	04-30-16	Winthrop Hatchery	Methow River
<b>Yakama Tribe Total</b>					<b>729,780</b>				
<b>Grand Total</b>					<b>13,296,395</b>				

## Hatchery Releases Last Two Weeks

Hatchery Release Summary									
		From:	4/2/2016	to	4/15/2016				
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2016	204,000	04-15-16	04-30-16		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SP	2016	527,000	04-15-16	04-30-16	Chief Joseph Hatchery	Mid-Columbia River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	256,000	04-15-16	04-30-16		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	342,500	04-15-16	04-30-16		Okanogan River
Colville Tribe	Chief Joseph Hatchery	CH1	SU	2016	402,000	04-15-16	04-30-16	Chief Joseph Hatchery	Mid-Columbia River
Colville Tribe	Wells Hatchery	ST	SU	2016	10,000	04-13-16	04-30-16	Omak Creek	Okanogan River
Colville Tribe	Wells Hatchery	ST	SU	2016	30,000	04-15-16	04-20-16	Omak Creek	Okanogan River
<b>Colville Tribe Total</b>					<b>1,771,500</b>				
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2016	474,513	04-04-16	04-05-16	N Fk Clearwater River	Clearwater River M F
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2016	227,969	04-11-16	04-11-16	Redhouse (Sfk ClearH2O R)	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2016	543,756	04-12-16	04-15-16	Meadow Creek - CLES	S Fk Clearwater River
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-11-16	04-11-16	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-12-16	04-12-16	Shoup Br (Salmon R)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	90,000	04-13-16	04-26-16	Salmon River (ID)	Salmon River (ID)
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2016	200,000	04-14-16	04-15-16	Little Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2016	154,869	04-04-16	04-08-16	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2016	875,460	04-04-16	04-08-16	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	560,000	03-21-16	04-02-16	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2016	820,000	04-02-16	04-21-16	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	66,859	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2016	1,054,263	04-01-16	04-14-16	Pahsimeroi Hatchery	Pahsimeroi River
<b>Idaho Dept. of Fish and Game Total</b>					<b>5,247,689</b>				
Nez Perce Tribe	Dworshak NFH	ST	SU	2016	200,000	04-11-16	04-22-16	Lolo Creek	Clearwater River M F
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2016	250,000	04-15-16	04-15-16	Lostine Accim Pond	Wallowa River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	123,000	04-08-16	04-08-16	Big Canyon (Clearwater River)	Clearwater River M F
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2016	154,000	04-07-16	04-07-16	Pittsburg Landing Acclim Pond	Snake River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2016	185,260	04-04-16	04-07-16	Nez Perce Tribal Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>912,260</b>				
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2016	360,000	04-10-16	04-10-16	Wallowa Acclim Pond	Wallowa River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2016	250,000	04-15-16	04-15-16	Lookingglass Creek	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2016	490,000	04-15-16	04-15-16	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2016	1,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2016	20,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	CH1	SP	2016	240,000	04-15-16	05-31-16	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2016	162,000	04-08-16	04-08-16	Deschutes River	Deschutes River
Oregon Dept. of Fish and Wildlife	Umatilla Hatchery	CH1	SP	2016	165,000	04-07-16	04-07-16	Corporation Guard Station	Umatilla River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	04-15-16	04-15-16	Crooked River (OR)	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	5,000	04-15-16	04-15-16	Wychus Creek	Deschutes River
Oregon Dept. of Fish and Wildlife	Wizard Falls Hatchery	CH1	SP	2016	15,000	04-15-16	04-15-16	Metolius River	Deschutes River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,713,000</b>				
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2016	1,170,000	04-12-16	04-12-16	Carson Hatchery	Wind River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	300,000	04-11-16	04-22-16	Clear Creek	Clearwater River M F
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	400,000	04-11-16	04-22-16	Redhouse (Sfk ClearH2O R)	S Fk Clearwater River
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2016	1,200,000	04-11-16	04-22-16	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	129,000	03-31-16	04-03-16	McNabb/Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2016	1,404,000	04-06-16	04-30-16	S Fk Salmon River	Salmon River (ID)
U.S. Fish and Wildlife Service	Leavenworth NFH	CH1	SP	2016	1,050,000	04-11-16	04-11-16	Icicle Creek	Wenatchee River
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2016	1,320,000	04-14-16	04-14-16	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2016	6,000,000	04-05-16	04-05-16	Spring Creek Hatchery	L Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2016	405,500	04-15-16	04-21-16	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2016	130,700	04-15-16	05-15-16	Winthrop Hatchery	Methow River
<b>U.S. Fish and Wildlife Service Total</b>					<b>13,509,200</b>				

## Hatchery Releases Last Two Weeks

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2016	150,000	04-15-16	04-15-16	Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2016	250,000	03-15-16	04-15-16	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2016	240,000	04-07-16	04-07-16	Thornhollow Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2016	480,000	04-07-16	04-07-16	Imeques Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>1,120,000</b>				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2016	37,500	04-08-16	04-08-16	W Fk Hood River	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2017	37,500	04-08-16	04-08-16	W Fk Hood River	Hood River
<b>Warm Springs Tribe Total</b>					<b>75,000</b>				
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	110,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	119,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	120,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chelan Hatchery	CH1	SU	2016	121,000	04-15-16	04-15-16	Chelan Falls	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2016	144,000	04-15-16	04-15-16	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2016	230,000	04-15-16	05-01-16	Nason Creek	Wenatchee River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2016	487,000	04-04-16	04-06-16	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	44,500	04-10-16	04-15-16	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	47,000	04-15-16	04-20-16	Baileysburg Bridge	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	85,000	03-25-16	04-15-16	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	100,000	04-07-16	04-15-16	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	108,000	04-10-16	04-10-16	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2016	200,000	03-20-16	04-07-16	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2016	36,300	04-15-16	04-20-16	Twisp Acclim Pond	Methow River
Washington Dept. of Fish and Wildlife	Methow Hatchery	CH1	SP	2016	157,000	04-15-16	04-20-16	Methow Hatchery	Methow River
Washington Dept. of Fish and Wildlife	Similkameen Hatchery	CH1	SU	2016	240,000	04-15-16	04-30-16	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Skamania Hatchery	ST	WI	2016	15,500	04-15-16	05-15-16	Rock Cr (Stevenson)	Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2016	220,000	04-01-16	04-15-16	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2016	50,000	04-15-16	04-15-16	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2016	320,000	04-15-16	05-07-16	Wells Hatchery	Mid-Columbia River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>2,954,300</b>				
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	95,939	04-15-16	06-01-16	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	193,067	04-15-16	06-01-16	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2016	215,045	04-15-16	06-01-16	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	74,227	04-15-16	06-01-16	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	74,951	04-15-16	06-01-16	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	76,167	04-15-16	06-01-16	Yakama River	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2016	299,959	04-15-16	06-01-16	Prosser Acclim Pond	Yakima River
<b>Yakama Tribe Total</b>					<b>1,029,355</b>				
<b>Grand Total</b>					<b>28,332,304</b>				

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

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

Date	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/18/2016	107.6	0.0	107.3	0.0	113.7	0.0	109.2	0.0	120.2	1.1	134.8	0.1	133.8	0.0
03/19/2016	98.5	0.0	98.9	0.0	104.2	0.0	102.1	0.0	111.4	0.0	118.8	0.0	115.6	0.0
03/20/2016	99.3	0.0	98.1	0.0	104.0	0.0	102.4	0.0	111.6	0.0	118.5	0.0	115.5	0.0
03/21/2016	93.7	0.0	95.0	0.0	99.8	0.0	99.9	0.0	108.6	2.0	119.2	0.0	116.0	0.0
03/22/2016	86.6	0.0	89.7	0.0	94.5	0.0	88.7	0.0	94.3	0.4	97.4	0.0	101.3	0.0
03/23/2016	110.5	0.0	112.7	0.0	111.7	0.0	105.8	0.0	113.4	0.0	113.0	0.0	113.7	0.0
03/24/2016	85.9	0.0	88.4	0.0	97.4	0.0	99.9	0.0	110.5	0.0	113.2	0.0	105.4	0.0
03/25/2016	102.9	0.0	103.8	0.0	105.1	0.0	99.7	0.0	106.6	0.0	121.4	0.0	122.0	0.0
03/26/2016	108.2	0.0	108.8	0.0	112.9	0.0	111.9	0.0	122.1	0.0	111.3	0.0	108.0	0.0
03/27/2016	81.2	0.0	78.7	0.0	85.4	0.0	81.0	0.0	87.7	0.0	103.4	0.0	112.7	0.0
03/28/2016	123.1	0.0	125.6	0.0	123.1	0.0	117.9	0.0	124.4	0.0	114.9	0.0	112.2	0.0
03/29/2016	107.4	0.0	116.5	0.0	121.7	0.0	119.4	0.0	129.6	0.5	133.1	0.0	128.1	5.2
03/30/2016	94.3	0.0	94.1	0.0	109.1	0.0	113.7	0.0	124.5	0.1	128.9	0.0	127.9	0.0
03/31/2016	77.0	0.0	73.4	0.0	88.3	0.0	86.3	0.0	96.6	0.0	133.7	0.0	133.1	0.0

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

Date	Dworshak		Brownlee Inflow	Hells Canyon Outflow		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill		Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/18/2016	8.0	3.6	---	24.7	61.5	0.0	57.3	0.0	60.3	0.0	58.1	0.0	0.0
03/19/2016	8.0	3.6	---	25.4	57.1	0.0	57.0	0.0	57.7	0.0	57.9	0.0	0.0
03/20/2016	8.0	3.6	---	25.6	57.1	0.0	57.1	0.0	57.7	0.0	57.9	0.0	0.0
03/21/2016	8.0	3.6	---	25.5	56.6	0.0	56.3	0.0	59.4	0.0	58.8	0.0	0.0
03/22/2016	8.1	3.7	---	21.7	61.9	0.0	58.6	0.0	60.5	0.0	60.4	0.0	0.0
03/23/2016	10.0	0.1	---	21.0	71.2	0.0	67.5	0.0	71.2	0.0	68.3	2.9	0.0
03/24/2016	9.9	0.0	---	20.0	72.4	0.0	67.7	0.0	72.8	0.0	75.1	2.0	0.0
03/25/2016	7.7	0.0	---	21.1	72.5	0.0	70.9	0.0	74.9	0.0	72.5	0.0	0.0
03/26/2016	7.7	0.0	---	20.5	66.2	0.0	65.0	0.0	68.9	0.0	70.0	0.0	0.0
03/27/2016	7.7	0.0	---	19.7	65.3	0.0	63.2	0.0	66.6	0.0	69.8	0.0	0.0
03/28/2016	5.0	0.0	---	20.6	61.0	0.0	59.2	0.0	61.5	0.0	60.3	0.0	0.0
03/29/2016	2.3	0.0	---	20.8	59.8	0.0	58.2	0.0	62.6	0.0	63.3	0.0	0.0
03/30/2016	2.2	0.0	---	20.4	52.1	0.0	55.5	0.0	56.6	0.0	60.6	0.0	0.0
03/31/2016	7.1	1.5	---	19.5	50.4	0.0	54.9	0.0	60.4	0.0	60.7	0.0	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		
03/18/2016	192.9	0.0	198.7	0.0	201.0	0.0	217.6	1.2	72.3	131.7
03/19/2016	186.6	0.0	194.9	0.0	196.2	0.0	215.0	1.2	82.2	119.2
03/20/2016	172.4	0.0	183.8	0.0	187.8	0.0	201.4	1.2	83.1	104.7
03/21/2016	182.1	0.0	190.9	0.0	190.5	0.0	203.4	1.2	81.6	108.1
03/22/2016	179.8	0.0	185.6	0.0	184.9	0.0	210.6	1.2	88.2	108.8
03/23/2016	187.0	2.9	192.8	0.0	196.4	0.0	208.7	1.2	82.2	112.9
03/24/2016	192.9	0.0	187.7	0.0	189.6	0.0	212.1	1.2	79.7	118.8
03/25/2016	190.1	0.0	203.1	0.0	205.1	0.0	209.6	1.3	77.5	118.4
03/26/2016	190.3	0.0	199.3	0.0	200.7	0.0	227.1	1.2	88.2	125.3
03/27/2016	192.9	0.0	184.0	0.0	186.5	0.0	207.8	1.3	76.5	117.6
03/28/2016	190.0	0.0	197.6	0.0	199.8	0.0	216.5	1.2	81.5	121.4
03/29/2016	186.8	0.0	197.5	0.0	199.4	0.0	216.4	1.2	82.5	120.3
03/30/2016	181.6	0.0	180.9	0.0	181.1	0.0	200.5	1.1	71.8	115.2
03/31/2016	210.8	6.9	199.2	0.0	197.0	0.0	212.3	1.2	78.6	120.0



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

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

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>				
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
3/18	97.7	98.1	98.8	24	---	---	---	0	101.6	102.1	102.3	24	101.3	101.8	102.0	24	100.6	101.0	101.1	24
3/19	96.3	96.9	97.5	24	---	---	---	0	102.3	102.9	103.3	24	102.0	102.5	103.1	24	101.4	101.8	101.9	24
3/20	96.0	96.6	96.8	24	---	---	---	0	103.8	104.6	105.3	24	102.8	103.3	103.6	24	102.5	102.9	103.0	24
3/21	96.8	97.0	97.3	24	---	---	---	0	104.7	104.9	105.1	24	103.5	103.8	104.3	24	103.3	103.7	103.9	24
3/22	96.6	96.8	96.9	24	---	---	---	0	103.9	104.5	104.7	24	103.5	103.8	104.3	24	103.4	103.6	103.7	24
3/23	95.9	96.0	96.2	24	---	---	---	0	103.0	103.5	103.7	24	102.2	102.5	102.7	24	102.5	102.6	103.0	24
3/24	96.4	96.6	96.9	24	---	---	---	0	103.5	103.7	104.5	24	103.0	103.6	104.0	24	103.1	103.3	103.4	24
3/25	96.1	96.3	96.5	24	---	---	---	0	102.9	103.0	103.0	24	102.2	102.6	102.8	24	102.9	103.1	103.2	24
3/26	96.2	96.4	96.6	24	---	---	---	0	103.5	104.2	104.5	24	102.5	103.1	103.7	24	102.8	103.1	103.5	24
3/27	96.1	96.3	96.5	24	---	---	---	0	104.5	104.7	105.0	24	103.8	104.3	105.3	24	103.9	104.2	104.4	24
3/28	95.9	96.0	96.3	24	---	---	---	0	104.0	104.2	104.7	24	102.8	103.1	103.4	24	103.0	103.2	103.4	24
3/29	95.7	95.9	96.2	24	---	---	---	0	104.2	104.4	104.5	24	103.3	104.0	105.3	24	102.9	103.2	103.5	24
3/30	95.6	95.7	96.0	24	---	---	---	0	104.6	105.1	105.9	24	105.1	106.8	110.3	24	103.4	103.6	103.9	24
3/31	95.6	95.8	96.1	23	---	---	---	0	104.8	105.1	106.0	23	109.7	113.1	121.2	23	103.4	103.7	104.2	23

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

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>				
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
3/18	---	---	---	0	100.7	100.7	101.1	10	101.2	101.2	101.6	10	100.7	100.9	101.2	24	101.5	101.7	102.1	24
3/19	---	---	---	0	101.1	101.6	102.0	24	101.4	102.1	102.7	24	102.6	103.0	103.3	24	103.4	103.8	104.1	24
3/20	---	---	---	0	102.3	102.8	103.0	24	102.6	103.1	103.3	24	102.7	102.9	103.0	24	103.4	103.6	103.7	24
3/21	---	---	---	0	102.7	103.2	103.4	24	103.0	103.5	103.8	24	103.2	103.6	103.8	24	103.9	104.2	104.4	24
3/22	---	---	---	0	102.9	103.2	103.5	24	103.3	103.6	103.9	24	103.1	103.3	103.5	24	103.7	104.1	104.6	24
3/23	---	---	---	0	102.2	102.5	102.7	24	102.5	102.8	103.0	24	102.4	102.7	103.0	24	103.0	103.3	103.5	24
3/24	---	---	---	0	102.6	102.8	103.0	24	102.9	103.1	103.5	24	103.0	103.1	103.2	24	103.5	103.6	103.6	24
3/25	103.2	103.5	103.7	24	102.4	102.9	103.2	24	102.7	103.3	103.8	24	102.9	103.0	103.1	24	103.4	103.6	103.8	24
3/26	103.2	103.6	104.1	24	103.0	103.6	103.9	24	103.4	104.1	104.5	24	103.2	103.6	103.9	24	103.8	104.2	104.5	24
3/27	105.1	105.8	106.6	24	103.6	103.9	104.2	24	103.9	104.3	104.6	24	104.1	104.2	104.3	24	104.5	104.6	104.7	24
3/28	103.0	103.5	104.5	24	102.8	103.1	103.4	23	103.2	103.4	103.6	23	103.7	103.8	103.9	24	104.2	104.3	104.4	24
3/29	103.2	103.8	104.5	24	102.6	102.9	103.2	24	103.0	103.5	103.9	24	103.4	103.7	103.9	24	104.0	104.2	104.5	24
3/30	103.5	104.0	104.6	24	103.0	103.6	104.1	24	103.3	104.1	104.7	24	103.6	103.8	104.0	24	104.1	104.3	104.5	24
3/31	104.3	105.0	106.2	23	103.8	104.5	105.0	23	104.1	104.9	105.7	23	103.7	103.9	104.0	23	104.1	104.3	104.4	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>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>				
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
3/18	100.7	101.3	103.3	24	101.4	102.1	104.8	24	102.1	102.6	102.8	24	101.7	101.8	102.2	24	101.6	102.1	102.3	24
3/19	102.1	103.7	104.3	24	102.2	103.6	104.4	24	102.3	102.6	102.8	24	101.8	102.2	102.4	24	102.3	102.7	102.8	24
3/20	102.6	102.9	103.5	24	103.0	103.3	104.0	24	103.3	103.5	103.6	24	103.3	103.6	103.8	24	103.0	103.3	103.4	24
3/21	102.7	103.2	103.5	24	103.3	104.0	107.0	24	103.6	103.9	104.1	24	103.5	103.9	104.1	24	103.5	103.8	104.0	24
3/22	101.9	102.9	103.5	24	103.0	103.4	104.4	24	103.4	103.9	104.3	24	103.4	103.9	104.2	24	102.7	103.1	103.5	24
3/23	102.1	102.4	102.8	24	102.3	102.6	102.9	24	102.4	102.8	103.1	24	102.2	102.4	102.7	24	102.1	102.5	102.8	24
3/24	102.5	102.7	102.8	24	102.7	102.9	103.1	24	102.4	102.5	102.6	24	102.5	102.6	102.8	24	102.4	102.5	102.8	24
3/25	102.4	102.7	102.9	24	102.6	102.8	103.1	24	102.2	102.4	102.9	24	102.5	102.7	103.2	24	102.2	102.5	102.8	24
3/26	102.9	103.4	103.8	24	103.1	103.5	104.0	24	102.9	103.4	103.7	24	103.0	103.6	103.9	24	102.7	103.1	103.5	24
3/27	103.4	103.6	103.8	24	103.7	103.8	104.0	24	103.7	103.9	104.0	24	103.8	104.0	104.2	24	103.3	103.5	103.6	24
3/28	103.0	103.2	103.5	24	103.1	103.3	103.5	24	102.7	102.9	103.3	24	103.0	103.2	103.6	24	102.7	102.8	102.9	24
3/29	103.1	103.5	103.8	24	103.4	103.7	103.9	23	103.2	103.6	104.0	24	103.3	103.7	104.2	24	102.7	102.9	103.2	24
3/30	103.3	103.8	104.2	24	103.4	103.8	104.1	24	103.0	103.3	103.5	24	103.2	103.4	103.6	24	103.4	104.0	104.6	24
3/31	103.5	103.8	104.0	23	103.6	103.9	104.1	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>Clrwtr-Peck</u>			<u>Anatone</u>			#				
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
3/18	101.5	102.3	102.5	24	---	---	---	0	105.9	106.2	106.6	24	102.5	103.3	104.1	24	101.7	102.5	103.0	24
3/19	101.8	102.1	102.3	24	---	---	---	0	106.3	106.7	107.1	24	102.9	103.9	104.6	24	102.1	102.8	103.6	24
3/20	102.4	102.7	103.0	24	---	---	---	0	106.9	107.4	107.7	24	103.4	104.2	104.9	24	102.5	103.1	103.7	24
3/21	103.1	103.5	103.7	24	---	---	---	0	107.2	107.4	107.8	24	103.4	104.0	104.9	24	102.5	103.1	104.0	24
3/22	102.3	102.6	102.8	24	---	---	---	0	106.7	107.0	107.2	24	101.8	102.1	103.0	24	101.4	101.8	102.2	24
3/23	101.7	102.2	102.6	24	---	---	---	0	94.7	95.0	98.0	24	98.9	99.4	101.2	24	101.6	102.5	102.9	24
3/24	101.9	102.1	102.4	24	---	---	---	0	94.9	95.1	95.2	24	99.0	99.2	99.3	24	102.0	102.3	102.8	24
3/25	101.7	102.0	102.3	24	---	---	---	0	94.4	94.6	94.8	24	99.0	99.2	99.7	24	101.4	101.7	102.1	24
3/26	102.4	103.1	103.4	24	---	---	---	0	94.7	95.0	95.3	24	99.5	100.1	100.7	24	101.9	102.7	103.5	24
3/27	103.1	103.4	103.8	24	---	---	---	0	94.8	95.0	95.3	24	98.8	99.1	99.3	24	101.7	102.1	102.6	24
3/28	102.1	102.3	102.6	24	---	---	---	0	95.9	96.3	97.0	24	99.6	100.2	101.0	24	101.4	102.0	102.4	24
3/29	103.2	104.3	106.1	24	---	---	---	0	96.3	97.0	97.7	24	100.6	101.4	102.2	24	102.0	102.6	103.3	24
3/30	102.9	103.3	103.7	24	---	---	---	0	96.2	97.0	97.9	24	100.4	101.5	102.5	24	102.0	102.8	103.7	24
3/31	---	---	---	0	---	---	---	0	98.1	100.6	103.7	23	100.4	101.4	102.2	23	102.1	102.8	103.5	23

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

Date	<u>Clrwtr-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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
3/18	101.0	102.2	102.6	24	100.5	101.1	101.4	24	99.9	100.4	100.7	24	99.3	99.7	99.8	24	99.1	99.5	99.9	24
3/19	102.6	103.6	104.1	24	101.8	102.3	103.0	24	101.1	101.6	102.0	24	99.8	100.1	100.5	24	99.5	99.9	100.1	24
3/20	103.1	104.0	104.4	24	103.0	103.4	103.6	24	102.4	102.7	102.9	24	101.1	101.6	102.1	24	100.2	100.5	100.8	24
3/21	103.2	104.1	104.5	24	103.5	103.9	104.2	24	103.0	103.2	103.6	24	101.0	101.2	101.3	24	100.6	101.1	101.4	24
3/22	101.5	102.1	103.0	24	103.2	103.6	104.0	24	102.5	102.9	103.3	24	100.9	101.3	101.8	24	100.3	100.5	100.7	24
3/23	100.4	100.7	100.9	24	101.9	102.2	102.5	24	101.4	101.6	101.7	24	100.5	101.0	101.4	24	100.2	100.8	101.5	24
3/24	100.9	101.0	101.1	24	101.8	102.1	102.3	24	101.4	101.7	102.2	24	101.3	101.5	101.6	24	100.8	100.9	101.0	24
3/25	100.4	100.6	100.8	24	100.7	100.8	101.0	24	100.1	100.2	100.4	24	101.1	101.2	101.5	24	100.5	100.6	100.7	24
3/26	100.5	101.2	101.5	24	101.5	102.0	102.5	24	100.8	101.3	101.6	24	101.3	101.6	101.9	24	100.9	101.4	101.7	24
3/27	100.9	101.0	101.2	24	101.9	102.1	102.4	24	101.2	101.4	101.6	24	101.9	102.0	102.1	24	101.4	101.7	101.9	24
3/28	100.3	100.4	100.7	24	101.0	101.1	101.2	24	100.4	100.6	100.9	24	100.9	101.1	101.4	24	100.3	100.4	100.6	24
3/29	101.1	101.9	102.4	24	101.5	101.9	102.1	24	101.0	101.4	101.7	24	100.6	100.9	101.1	24	100.2	100.5	100.6	24
3/30	101.5	102.3	102.9	24	101.3	101.4	101.8	24	100.9	101.0	101.4	24	100.7	101.0	101.5	24	100.2	100.3	100.5	24
3/31	101.8	102.3	102.8	23	101.1	101.2	101.4	23	100.5	100.6	100.8	23	100.7	101.2	101.9	23	100.1	100.4	100.6	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>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>		<u>hr</u>			
3/18	99.7	99.8	100.0	24	99.3	99.6	99.9	24	---	---	---	0	100.9	101.2	101.5	24	---	---	---	0
3/19	100.1	100.3	100.5	24	99.7	100.0	100.2	24	---	---	---	0	100.7	101.0	101.3	24	---	---	---	0
3/20	101.0	101.1	101.4	24	100.6	100.7	100.9	24	---	---	---	0	101.1	101.4	101.7	24	---	---	---	0
3/21	101.6	101.9	102.1	24	101.0	101.3	101.4	24	102.0	102.1	102.3	14	101.4	101.8	102.1	24	---	---	---	0
3/22	101.1	101.5	101.9	24	100.5	100.9	101.2	24	101.2	101.6	102.0	24	100.9	101.2	101.4	24	---	---	---	0
3/23	100.0	100.3	100.5	24	99.6	99.8	100.1	24	100.3	100.6	100.9	24	100.7	101.8	103.6	24	---	---	---	0
3/24	100.5	100.6	100.8	24	100.2	100.3	100.6	24	100.6	100.8	100.9	24	101.2	102.0	103.6	24	---	---	---	0
3/25	100.8	101.1	101.5	24	100.6	100.9	101.2	24	100.4	100.5	100.5	24	100.4	100.5	100.7	24	---	---	---	0
3/26	101.4	101.8	102.0	24	101.1	101.6	101.8	24	100.7	101.0	101.4	24	100.7	101.2	101.3	24	---	---	---	0
3/27	102.1	102.1	102.2	24	101.8	101.9	102.1	24	101.5	101.6	101.7	24	101.4	101.5	101.7	24	---	---	---	0
3/28	101.8	101.8	102.0	24	101.3	101.4	101.6	24	101.2	101.2	101.3	24	101.1	101.3	101.8	24	---	---	---	0
3/29	101.9	102.0	102.2	24	101.5	101.8	102.0	24	101.5	101.7	101.8	24	101.5	101.8	102.1	24	---	---	---	0
3/30	101.6	101.7	101.9	24	101.2	101.4	101.8	24	101.5	101.7	101.8	24	101.6	101.8	102.1	24	---	---	---	0
3/31	101.2	101.3	101.4	23	101.1	101.2	101.5	23	101.8	102.0	102.1	23	101.9	102.2	102.5	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>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>				
3/18	---	---	---	0	102.5	103.0	103.5	24	101.0	101.3	101.5	24	100.7	101.0	101.1	24	100.6	100.7	100.8	24
3/19	---	---	---	0	103.8	104.0	104.1	24	101.5	101.8	102.1	24	101.2	101.6	101.9	24	101.1	101.4	101.6	24
3/20	---	---	---	0	104.3	104.5	104.7	24	102.2	102.3	102.4	24	102.1	102.4	102.7	24	101.9	102.0	102.1	24
3/21	---	---	---	0	104.5	105.0	105.3	24	102.6	102.9	103.1	24	102.6	102.9	103.2	24	102.0	102.3	102.5	24
3/22	103.4	103.6	103.8	15	103.8	104.2	104.5	24	102.2	102.4	102.8	24	102.1	102.4	102.8	24	101.4	101.7	102.0	24
3/23	102.2	102.4	102.7	24	103.8	105.5	114.3	24	101.6	101.9	102.2	24	101.6	102.0	102.5	24	101.3	101.6	102.0	24
3/24	102.1	102.3	102.5	24	102.1	102.3	102.6	24	102.3	102.4	102.5	24	102.3	102.4	102.5	24	101.8	101.9	102.2	24
3/25	102.1	102.4	102.8	24	102.1	102.4	102.7	24	102.3	102.5	102.5	24	102.1	102.2	102.4	24	101.9	102.1	102.4	24
3/26	102.9	103.3	103.7	24	102.9	103.4	103.6	24	102.9	103.5	103.9	24	102.7	103.4	103.8	24	102.5	103.0	103.2	24
3/27	103.4	103.7	104.0	24	103.3	103.5	103.7	24	103.2	103.5	103.9	24	102.8	103.1	103.6	24	102.6	103.0	103.3	24
3/28	102.6	102.7	102.9	24	102.8	103.1	103.4	24	102.4	102.5	102.6	24	102.1	102.2	102.2	24	101.9	102.0	102.1	24
3/29	102.7	103.1	103.3	24	102.8	103.1	103.3	24	102.6	103.0	103.3	24	102.4	102.8	103.0	24	102.2	102.5	102.8	24
3/30	103.0	103.7	104.5	24	102.8	103.2	103.5	24	102.8	103.0	103.3	24	102.6	102.9	103.2	24	102.4	102.5	102.6	24
3/31	103.6	103.9	104.5	23	105.3	106.9	108.0	23	103.3	103.5	104.0	23	102.9	103.1	103.4	23	102.6	102.8	103.0	23

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

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>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>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>				
3/18	100.0	100.1	100.3	24	101.6	101.8	102.0	24	102.4	102.6	102.7	24	101.7	102.1	102.6	24	106.1	106.8	107.3	24
3/19	100.3	100.7	100.8	24	102.0	102.4	102.8	24	102.7	103.2	103.4	24	102.4	103.2	103.8	24	106.4	107.2	107.6	24
3/20	101.2	101.4	101.5	24	102.5	102.6	102.6	24	103.5	103.7	104.0	24	103.0	103.3	103.6	24	107.3	107.7	107.8	24
3/21	101.2	101.4	101.8	24	102.7	102.8	102.9	24	103.6	103.8	104.0	24	103.2	103.4	103.7	24	107.1	107.8	107.9	24
3/22	100.7	100.8	101.0	24	101.6	102.0	102.6	24	102.5	102.8	103.3	24	102.3	102.7	102.9	24	106.3	106.8	107.1	24
3/23	100.6	100.9	101.1	24	101.2	101.6	102.1	24	102.2	102.6	103.1	24	102.0	102.5	102.9	24	106.0	106.8	107.3	24
3/24	101.0	101.1	101.2	24	101.7	101.8	102.0	24	102.4	102.6	102.9	24	102.2	102.4	102.7	24	106.2	106.8	107.2	24
3/25	101.0	101.2	101.5	24	101.7	102.0	102.4	24	102.9	103.3	103.8	24	102.9	103.6	104.4	24	106.5	107.1	107.4	24
3/26	101.7	102.1	102.3	24	102.9	103.3	103.6	24	103.5	103.9	104.1	24	103.4	104.1	104.6	24	107.2	108.1	108.6	24
3/27	101.9	102.1	102.3	24	102.8	103.1	103.4	24	103.5	103.7	104.1	24	103.4	103.7	103.9	24	106.9	107.3	107.5	24
3/28	101.2	101.3	101.3	24	102.3	102.5	102.6	24	103.1	103.4	103.7	24	103.1	103.6	104.0	24	106.7	107.2	107.6	24
3/29	101.5	101.8	102.1	24	102.9	103.3	103.7	24	103.7	104.2	104.7	24	103.8	105.1	106.0	24	107.1	108.0	108.6	24
3/30	101.8	102.1	102.3	24	103.2	103.6	103.9	24	104.1	104.6	105.0	24	104.4	105.5	106.4	24	107.5	108.1	108.7	24
3/31	102.1	102.5	103.0	23	103.5	103.9	104.2	23	104.5	104.8	105.2	23	104.9	106.0	107.1	23	107.7	108.2	108.5	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 4/1/2016 8:35

\* 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)
03/18/2016	*	1,250	89	17	24	---	---	---	---	---	628
03/19/2016	*	---	121	13	27	---	---	---	---	---	549
03/20/2016	*	---	56	14	24	---	---	---	---	---	393
03/21/2016	*	1,975	33	8	2	---	---	---	---	---	453
03/22/2016	*	1,214	35	16	6	---	---	---	---	---	576
03/23/2016	*	1,844	96	201	5	---	---	---	---	---	513
03/24/2016	*	653	80	253	6	---	---	---	---	---	310
03/25/2016	*	539	114	227	3	---	---	---	---	---	256
03/26/2016	*	---	128	678	11	5,100	---	---	---	---	449
03/27/2016	*	---	65	196	1	7,550	---	---	---	---	375
03/28/2016	*	459	75	83	5	15,500	---	---	---	---	348
03/29/2016	*	216	91	375	3	19,350	---	---	---	---	356
03/30/2016	*	230	71	220	5	11,956	---	---	---	---	317
03/31/2016	*	1,511	---	54	2	10,650	---	---	---	---	268
04/01/2016	*	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>9,891</b>	<b>1,054</b>	<b>2,355</b>	<b>124</b>	<b>70,106</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5,791</b>
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Average:</b>		<b>989</b>	<b>81</b>	<b>168</b>	<b>9</b>	<b>11,684</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>414</b>
<b>YTD</b>		<b>14,257</b>	<b>1,680</b>	<b>2,482</b>	<b>128</b>	<b>70,106</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,518</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)
03/18/2016	*	0	0	3	6	---	---	---	---	---	942
03/19/2016	*	---	0	0	3	---	---	---	---	---	1,105
03/20/2016	*	---	0	2	1	---	---	---	---	---	919
03/21/2016	*	0	0	0	1	---	---	---	---	---	1,083
03/22/2016	*	0	0	1	1	---	---	---	---	---	685
03/23/2016	*	0	0	0	0	---	---	---	---	---	431
03/24/2016	*	0	0	0	3	---	---	---	---	---	133
03/25/2016	*	0	0	0	4	---	---	---	---	---	341
03/26/2016	*	---	0	0	0	440	---	---	---	---	432
03/27/2016	*	---	0	0	0	1,050	---	---	---	---	419
03/28/2016	*	0	0	0	3	0	---	---	---	---	373
03/29/2016	*	0	0	0	6	900	---	---	---	---	468
03/30/2016	*	0	0	0	8	50	---	---	---	---	541
03/31/2016	*	0	---	0	1	100	---	---	---	---	503
04/01/2016	*	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>6</b>	<b>37</b>	<b>2,540</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,375</b>
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>423</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>598</b>
<b>YTD</b>		<b>0</b>	<b>3</b>	<b>12</b>	<b>66</b>	<b>2,540</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26,923</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)	
03/18/2016	*	0	0	0	0	---	---	---	---	---	16	
03/19/2016	*	---	0	0	0	---	---	---	---	---	25	
03/20/2016	*	---	0	0	0	---	---	---	---	---	18	
03/21/2016	*	0	0	0	0	---	---	---	---	---	19	
03/22/2016	*	0	0	0	0	---	---	---	---	---	9	
03/23/2016	*	0	0	0	1	---	---	---	---	---	9	
03/24/2016	*	0	0	0	0	---	---	---	---	---	0	
03/25/2016	*	0	0	0	0	---	---	---	---	---	9	
03/26/2016	*	---	0	0	0	20	---	---	---	---	17	
03/27/2016	*	---	0	0	0	50	---	---	---	---	0	
03/28/2016	*	0	0	0	0	0	---	---	---	---	42	
03/29/2016	*	0	0	0	0	0	---	---	---	---	17	
03/30/2016	*	0	0	0	0	0	---	---	---	---	17	
03/31/2016	*	0	---	0	0	150	---	---	---	---	42	
04/01/2016	*	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>220</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>240</b>	
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>220</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>382</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)	
03/18/2016	*	1	32	0	0	---	---	---	---	---	48	
03/19/2016	*	---	36	0	0	---	---	---	---	---	16	
03/20/2016	*	---	19	0	1	---	---	---	---	---	0	
03/21/2016	*	0	13	0	0	---	---	---	---	---	19	
03/22/2016	*	0	8	0	0	---	---	---	---	---	27	
03/23/2016	*	0	32	0	0	---	---	---	---	---	46	
03/24/2016	*	0	14	0	0	---	---	---	---	---	27	
03/25/2016	*	0	16	0	3	---	---	---	---	---	43	
03/26/2016	*	---	13	0	13	460	---	---	---	---	78	
03/27/2016	*	---	8	0	1	650	---	---	---	---	61	
03/28/2016	*	0	11	0	18	500	---	---	---	---	51	
03/29/2016	*	0	8	0	10	1,850	---	---	---	---	113	
03/30/2016	*	0	9	0	5	1,851	---	---	---	---	26	
03/31/2016	*	0	---	0	9	950	---	---	---	---	34	
04/01/2016	*	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>1</b>	<b>219</b>	<b>0</b>	<b>60</b>	<b>6,261</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>589</b>	
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	
<b>Average:</b>		<b>0</b>	<b>17</b>	<b>0</b>	<b>4</b>	<b>1,044</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>42</b>	
<b>YTD</b>		<b>9</b>	<b>379</b>	<b>4</b>	<b>67</b>	<b>6,261</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>705</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)	
03/18/2016	*	0	0	0	0	---	---	---	---	---	16	
03/19/2016	*	---	0	0	0	---	---	---	---	---	0	
03/20/2016	*	---	0	0	0	---	---	---	---	---	0	
03/21/2016	*	0	0	0	0	---	---	---	---	---	9	
03/22/2016	*	0	0	0	0	---	---	---	---	---	9	
03/23/2016	*	0	0	0	0	---	---	---	---	---	0	
03/24/2016	*	0	0	0	0	---	---	---	---	---	0	
03/25/2016	*	0	0	0	0	---	---	---	---	---	0	
03/26/2016	*	---	0	0	0	---	---	---	---	---	17	
03/27/2016	*	---	0	0	0	---	---	---	---	---	44	
03/28/2016	*	0	0	0	0	---	---	---	---	---	8	
03/29/2016	*	0	0	0	0	---	---	---	---	---	17	
03/30/2016	*	0	0	0	0	---	---	---	---	---	34	
03/31/2016	*	0	---	0	0	---	---	---	---	---	8	
04/01/2016	*	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>162</b>	
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	
<b>YTD</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>207</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)	
03/18/2016	*	0	1	0	0	---	---	---	---	---	170	
03/19/2016	*	---	0	0	0	---	---	---	---	---	320	
03/20/2016	*	---	0	0	0	---	---	---	---	---	210	
03/21/2016	*	0	0	0	0	---	---	---	---	---	160	
03/22/2016	*	0	0	0	0	---	---	---	---	---	130	
03/23/2016	*	0	0	0	0	---	---	---	---	---	185	
03/24/2016	*	0	0	0	0	---	---	---	---	---	120	
03/25/2016	*	0	0	0	0	---	---	---	---	---	130	
03/26/2016	*	---	0	0	0	10	---	---	---	---	150	
03/27/2016	*	---	0	0	0	0	---	---	---	---	105	
03/28/2016	*	0	0	0	0	0	---	---	---	---	85	
03/29/2016	*	0	1	0	0	0	---	---	---	---	100	
03/30/2016	*	0	0	0	0	0	---	---	---	---	95	
03/31/2016	*	0	---	0	0	0	---	---	---	---	60	
04/01/2016	*	---	---	---	---	---	---	---	---	---	---	
<b>Total:</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,020</b>	
<b># Days:</b>		<b>10</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	
<b>Average:</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>144</b>	
<b>YTD</b>		<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,775</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:

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.

Cumulative Adult Passage at Mainstem Dams Through: 03/31

DAM	END DATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.		2016		2015		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	03/29	166	5	1259	4	258	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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	03/29	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	03/28	2	0	5	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	03/30	31	0	159	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0

DAM	END DATE	Coho						Sockeye			Steelhead						Lamprey		
		2016		2015		10-Yr Avg.		2016	2015	10-Yr Avg.	10-Yr		Wild 2016	Wild 2015	10-Yr Avg.	2016	2015	10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack				2016	2015							2016
BON	03/29	0	0	0	0	0	0	1	1	0	2678	3126	2261	1176	1675	722	-1	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		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	03/29	0	0	0	0	0	0	0	0	0	1955	0	0	1002	0	0	0	0	0
LGR	03/28	0	0	0	0	0	0	0	0	0	3644	6591	4481	1823	2752	1309	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	03/30	0	0	1	0	0	0	0	0	0	4363	3307	3914	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.