



# Fish Passage Center

## Weekly Report #13 - 03

April 5, 2013

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### Summary of Events:

**Water Supply:** Precipitation throughout the Columbia Basin has varied between 55% and 157% of average at individual sub-basins over March. Precipitation above The Dalles has been 99% of average over March. Over the 2013 water year, precipitation has ranged between 82% and 120% of average.

**Table 1. Summary of March precipitation and cumulative October through March 25, 2013 precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.**

Location	Water Year 2013 March 1-25, 2013		Water Year 2013 October 1, 2012 to March 25, 2013	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	1.87	129	15.93
SNAKE RIVER ABOVE ICE HARBOR	0.89	67	9.49	95
Columbia Above The Dalles	1.53	99	14.23	102
Kootenai	2.25	157	17.16	120
Clark Fork	0.81	84	9.37	107
Flathead	1.10	84	13.61	115
Pend Oreille/Spokane	2.34	105	20.07	102
Central Washington	0.50	75	5.62	98
SNAKE RIVER PLAIN	0.50	55	4.82	82
Salmon/Boise/Payette	0.91	58	11.11	90
Clearwater	2.35	104	18.13	100
SW Washington Cascades/Cowlitz	4.39	77	50.58	97
Willamette Valley	3.29	64	44.82	102

Snowpack within the Columbia Basin has generally been slightly below average to below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 89% of average, for Snake River Basins the average snowpack is 72% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 77% of average.

Table 2 displays the March 7<sup>th</sup> (official forecast) and April 3<sup>rd</sup> ESP runoff volume forecasts for multiple reservoirs. The April 3<sup>rd</sup> forecast at The Dalles between January and July is 90,972 Kaf (90% of average).

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

Location	March 7, 2013 ESP		April 3, 2013 ESP	
	% Average (1971- 2000)	Runoff Volume (Kaf)	% Average (1971- 2000)	Runoff Volume (Kaf)
The Dalles (Jan-July)	88	89675	90	90972
Grand Coulee (Jan-July)	91	54403	98	58166
Libby Res. Inflow, MT (Apr-Aug)	97	5727 *6315	93	5490
Hungry Horse Res. Inflow, MT (Jan-July)	92	1937	96	2013
Lower Granite Res. Inflow (Apr- July)	84	16612	79	15712
Brownlee Res. Inflow (Apr-July)	70	3834	63	3471
Dworshak Res. Inflow (Apr-July)	93	2239 *2128	88	2119

\* Denotes COE Forecast

Grand Coulee Reservoir is at 1279.9 feet (4-4-13) and drafted 1.8 feet over the last week. The current April 10th Shifted FC Elevation at Grand Coulee is 1279.9 feet. Outflows at Grand Coulee have ranged between 64.6 and 125.8 Kcfs over the last week.

The Libby Reservoir is currently at elevation 2395.1 feet (4-4-13) and has refilled 1.0 foot last week. The current April 10th FC Elevation at Libby is 2405.8 feet. Outflows at Libby Dam have been 4.0 Kcfs last week.

Hungry Horse is currently at an elevation of 3536.5 feet (4-4-13) and has refilled 0.1 feet last week. The current April 10th FC Elevation at Hungry Horse is 3535.9 feet. Outflows at Hungry Horse have ranged between 2.0 and 6.0 Kcfs last week.

Dworshak is currently at an elevation of 1561.7 feet (4-4-13) and has refilled 1.9 feet last week. The current April 10th Shifted (Local) Flood Control Elevation is 1571.2 feet. Outflows from Dworshak have increased to 9.9 Kcfs over past week due to increases in inflow and hatchery releases.

The Brownlee Reservoir was at an elevation of 2056.3 feet on April 4<sup>th</sup>, 2013 holding steady over the last week. The current April 10th FC Elevation at Brownlee is 2067.0 feet. Over the last week, inflows at Brownlee have ranged between 11.2 and 12.3 Kcfs.

The Biological Opinion flow period began on April 3<sup>rd</sup> in the lower Snake River (Lower Granite). The flow objective at Lower Granite will depend on the April Final Water Supply Forecast which will be released next week; however based on the April 3<sup>rd</sup> ESP forecast (April-July) the flow objective this spring will likely be 85 Kcfs at Lower Granite. Flows at Lower Granite Dam from April 3-4 have averaged 57.0 Kcfs.

**Spill:** Spill for fish passage began on April 3<sup>rd</sup> at the lower Snake River projects.

Project	Spill Level Day/Night
Lower Granite	20 Kcfs/20 Kcfs
Little Goose	30%/30%
Lower Monumental	Gas Cap/Gas Cap
Ice Harbor	45 Kcfs/Gas Cap

At Lower Granite Dam, spill to the Court Order began on April 3<sup>rd</sup> and has been approximately 20 Kcfs. At Little Goose Dam spill has been provided to the 30% of instantaneous flow level as specified in the Court Order. At Lower Monumental Dam the Court Order calls for spill to the gas cap. The COE has been spilling 27-28 Kcfs, which has resulted in total dissolved gas (TDG) levels less than the gas cap of 120% TDG in the tailrace. It should take a few days for this water to reach the forebay monitor at Ice Harbor Dam, and if TDG levels are below 115% we should expect to see the COE increase spill at Lower Monumental Dam. At

Ice Harbor Dam the Court Order calls for 45 Kcfs spill during the day and gas cap spill at night.

Spill for fish passage at the Lower Columbia projects is scheduled to begin on April 10<sup>th</sup>. However, spill has occurred at McNary Dam over the past week as a result of unit outages and flow in excess of hydraulic capacity. There have been no TDG measurements that exceed the waiver limits at the Snake River projects since spill began on April 3<sup>rd</sup>.

**Smolt Monitoring:** This week marked the beginning of Smolt Monitoring Program activities at John Day Dam (JDA), Lower Monumental Dam (LMN), Little Goose Dam (LGS), and Rock Island Dam (RIS). Monitoring activities at BON, LGR, and the SMP traps continued this week.

Subyearling Chinook fry continued to dominate the bypass samples at Bonneville Dam this week. The daily average passage index for subyearling Chinook was about 260 per day, which a slight decrease from last week's daily average passage index of about 280 per day. As with past weeks, the vast majority (~98%) of the subyearling Chinook sampled at BON this week were fry. Passage numbers for yearling Chinook at BON increased this week, when compared to last week. The daily average passage index for yearling Chinook this week was about 150 per day. Last week's daily average passage index was about 50 per day. Coho passage also increased this week. This week's daily average passage index for coho was 110 per day, compared to just over 20 per day last week. Last week, all of the coho in the sample were fry. However, the proportion of the coho sample that were fry decreased this week, particularly in the last two days. Samples of steelhead juveniles at BON remained low this week. The daily average passage index for steelhead juveniles at BON this week was about 30 per day. BON collected its first sockeye juveniles of the season on April 2<sup>nd</sup>. However, the passage index for sockeye so far remains relative low. Only pacific lamprey macrophthalmia were collected at BON this week. The daily average collection for pacific lamprey macrophthalmia this week was 34 per day, which is a slight decrease from last week's daily average collection of 50 per day.

John Day Dam (JDA) began sampling this week, with the first sample available on April 1<sup>st</sup>. Among salmonids, yearling Chinook and steelhead were the dominate species this week. In fact, over the four days of sampling, the daily average passage index

for both yearling Chinook and steelhead at JDA this week was nearly 100 per day. Only a few sockeye, coho, and subyearling Chinook fry were sampled this week at JDA. Both pacific lamprey ammocoetes and macrophthalmia were sampled at JDA this week. However, the majority of the lamprey that were sampled this week were macrophthalmia. In fact, over the four days of sampling, the daily average collection for pacific lamprey macrophthalmia was nearly 280 per day.

Yearling Chinook have dominated the bypass sample at LGR this week, with a daily average passage index of nearly 4,000 per day. Compared to last week, the passage of yearling Chinook has increased this week. Last week's daily average passage for yearling Chinook at LGR was about 860 per day. As with last week, approximately 75% of the yearling Chinook juveniles sampled this week were of known hatchery origin, which means that they either had fin clips or were unclipped but had coded-wire-tags. Steelhead passage has also increased this week, when compared to last week. This week's daily average passage index for steelhead was nearly 640 per day. Last week's daily average was only 40 fish per day. Passage of subyearling Chinook, coho, and sockeye/kokanee at LGR has been relatively low over the past week. So far, LGR has collected only pacific lamprey macrophthalmia so far this season and none were collected this week.

Lower Monumental (LMN) and Little Goose (LGS) dams began monitoring activities this week. However, sampling at LMN and LGS is limited. This limited sampling will be every three days at LMN and every five days at LGS and will run until the beginning of transportation from these sites. So far this year, LMN has taken two samples, one on April 1<sup>st</sup> and one on April 4<sup>th</sup>. Little Goose Dam has only conducted one sample so far this year, on April 3<sup>rd</sup>. At both sites, yearling Chinook dominated the samples. Only a few steelhead were sampled at LMN on April 1<sup>st</sup> and LGS had a few steelhead in their April 3<sup>rd</sup> sample. Finally, both LMN and LGS had pacific lamprey macrophthalmia in their samples this week.

Rock Island Dam (RIS) began sampling this week, with the first sample available on April 1<sup>st</sup>. Very few salmonids have been collected at RIS. For the four days of available data, the daily average passage index has been less than 10 fish per day for all species of salmonids. Two pacific lamprey macrophthalmia were sampled on April 2<sup>nd</sup>.

The Grande Ronde Trap continued to collect mostly yearling Chinook this week. However, compared to last week, the daily average collections for yearling Chinook at GRN decreased this week. The daily average collection for yearling Chinook for this week was about 680 per day. Last week's daily average collection for yearling Chinook was about 825 per day. Of the yearling Chinook that were collected at this trap this week, approximately 92% were of known hatchery origin, which means that they either had fin clips or were unclipped but had coded-wire-tags. In addition to yearling Chinook, the Grande Ronde Trap sampled only a few subyearling Chinook fry and steelhead juveniles this week.

The Salmon River Trap continued to collect mostly yearling Chinook this week. In fact, yearling Chinook collections increased this week, when compared to last week. The daily average collection for yearling Chinook this week was about 1,625 per day. Last week's daily average collection for yearling Chinook was nearly 360 per day. The only other species that was collected at the Salmon River trap this week was steelhead, although still in relatively small numbers.

The Snake River Trap continued to collect very few fish this week. However, yearling Chinook collections increased this week, when compared to last week. The daily average collection for yearling Chinook this week was 25 per day. Last week's daily average collection was only 4 per day. The only other species that were collected this week were steelhead and subyearling Chinook fry.

Currently, data from the Imnaha River Trap are only available through March 30<sup>th</sup>. Up to March 30<sup>th</sup>, collections of yearling Chinook seemed to be decreasing, whereas steelhead collections were increasing. Although data are not available yet, communications with the staff at the Imnaha Trap indicate that yearling Chinook collections increased substantially this week. The increasing collections this week were due to a recent release of hatchery yearling Chinook above the trap.

There is still one more SMP that is scheduled to begin sampling next week. This site is McNary Dam, which is scheduled to begin on April 6<sup>th</sup>. Sampling at MCN will be every-other-day until transportation begins this summer.

**Adult Fish Passage:**

Bonneville Dam uses video counts from January 1st 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 1st 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 Dam also uses video counts and reports adult counts year round.

Adult counts at Bonneville Dam have been updated through April 4th. Daily adult spring Chinook counts at Bonneville Dam ranged from 22 to 91 adult salmon per day. As of April 4th, a total of 563 spring Chinook have been counted at Bonneville Dam. In 2012, 49 adult spring Chinook were counted at Bonneville Dam for the same time period. The 2013 adult spring Chinook count at Bonneville Dam is about 11.5 times greater than the 2012 count, while being only about 19% of the 10 year average of 2,969. At Willamette Falls Dam 314 adult spring Chinook has been counted so far this year.

The 2013 Bonneville Dam adult steelhead count of 1,939 is about 61% of the 2012 count of 3,175 and 72.5% of the 10 year average count of 2,674. This year's Lower Granite steelhead count of 4,980 is about 89.7% of the 2012 count of 5,549 and 77.3% of the 10 year average count of 6,445. At Willamette Falls Dam, the 2013 count for steelhead was 4,803 as of April 4th. This year's steelhead count is about 92.6% of the 2012 count of 5,184 and about 90.4% of the 10 year average count of 5,309.

Based on video counts, the criteria (2 fish for 2 days) to open the Corner Collector at Bonneville Dam was met on March 20, 2013. The Corner Collector was opened early in the afternoon on March 22, 2013.

### Hatchery Releases Last Two Weeks

Hatchery Release Summary									
From:	3/22/2013		to		04/04/13				
Agency	Hatchery	Species	Race	MiqYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2013	1,086,132	03-28-13	04-05-13	Red River Acclim Pond Redhouse (SFk	S Fk Clearwater River
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	208,845	03-28-13	04-10-13	ClearH20 R)	S Fk Clearwater River
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2013	253,000	03-25-13	03-29-13	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2013	820,000	03-25-13	03-29-13	Knox Bridge	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2013	269,400	03-21-13	03-25-13	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2013	366,950	03-25-13	03-29-13	Pahsimeroi River	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2013	168,595	04-01-13	04-18-13	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2013	847,203	04-01-13	04-18-13	Pahsimeroi Hatchery	Pahsimeroi River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2013	2,500,000	03-11-13	04-26-13	Rapid River Hatchery	Little Salmon River
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SU	2013	1,014,000	04-01-13	04-15-13	Pahsimeroi River	Pahsimeroi River
<b>Idaho Dept. of Fish and Game Total</b>					<b>7,534,125</b>				
Nez Perce Tribe	Kooskia NFH	CH1	SP	2013	279,000	03-29-13	03-29-13	Kooskia Hatchery	Clearwater River M F
Nez Perce Tribe	Kooskia NFH	CO	UN	2013	323,000	04-01-13	04-07-13	Clear Creek	Clearwater River M F
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2013	135,000	03-21-13	04-01-13	Lostine Accim Pond	Wallowa River
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2013	150,000	04-01-13	04-01-13	Cpt John Acclim Pond	Snake River
Nez Perce Tribe	McCall Hatchery	CH1	SU	2013	130,000	04-01-13	04-05-13	Johnson Cr Idaho Nez Perce Tribal	South Fork Salmon River
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2013	205,000	04-01-13	04-13-13	Hatchery	Clearwater River M F
<b>Nez Perce Tribe Total</b>					<b>1,222,000</b>				
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2013	250,000	03-14-13	04-14-13	Lookingglass Creek	Grande Ronde River
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2013	420,000	03-30-13	04-14-13	Imnaha Acclim Pond	Imnaha River
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>670,000</b>				
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2013	1,380,000	04-01-13	04-02-13	Dworshak Hatchery Warm Springs	Clearwater River M F
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2013	772,000	04-02-13	04-11-13	Hatchery	Deschutes River
<b>U.S. Fish and Wildlife Service Total</b>					<b>2,152,000</b>				
Umatilla Tribe	Carson NFH	CH1	SP	2013	250,000	04-01-13	04-03-13	Walla Walla River Pendelton Acclim	Walla Walla River
Umatilla Tribe	Cascade Hatchery	CO	UN	2013	1,000,000	03-25-13	04-22-13	Pond Catherine Cr Acclim	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2013	134,514	03-21-13	04-14-13	Pond Grande Ronde Acclim	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2013	155,264	03-20-13	04-01-13	Pond	Grande Ronde River
<b>Umatilla Tribe Total</b>					<b>1,539,778</b>				
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2013	260,000	04-01-13	04-27-13	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2013	2,550,000	04-01-13	04-07-13	Klickitat River	Klickitat River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>2,810,000</b>				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	249,305	03-15-13	05-15-13	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	255,745	03-15-13	05-15-13	Clark Flat Acclim Pond Jack Creek Acclim	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	266,311	03-15-13	05-15-13	Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	322,100	04-01-13	07-01-13	Prosser Acclim Pond	Yakima River
<b>Yakama Tribe Total</b>					<b>1,093,461</b>				
<b>Grand Total</b>					<b>17,021,364</b>				

### Hatchery Releases Next Two Weeks

Hatchery Release Summary										
From: 4/5/2013 to 4/18/2013										
Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver	
Colville Tribe	Wells Hatchery	ST	SU	2013	9,189	04-13-13	04-27-13	Omak Creek	Okanogan River	
<b>Colville Tribe Total</b>					<b>9,189</b>					
Idaho Dept. of Fish and Game	Clearwater Hatchery	CH1	SP	2013	1,086,132	03-28-13	04-05-13	Red River Acclim Pond	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	72,367	04-09-13	04-09-13	Meadow Creek - CLES	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	121,863	04-12-13	04-12-13	Newsome Creek	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	143,982	04-11-13	04-11-13	Meadow Creek - CLES	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	153,360	04-10-13	04-11-13	Meadow Creek - CLES	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	208,845	03-28-13	04-10-13	Redhouse (SFk ClearH20 R)	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Clearwater Hatchery	ST	SU	2013	258,399	04-09-13	04-10-13	Meadow Creek - CLES	S Fk Clearwater River	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2013	93,439	04-10-13	04-11-13	Salmon River (ID)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2013	93,731	04-09-13	04-10-13	Salmon River (ID)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2013	94,200	04-11-13	04-12-13	Salmon River (ID)	Salmon River (ID)	
Idaho Dept. of Fish and Game	Magic Valley Hatchery	ST	SU	2013	218,909	04-16-13	04-19-13	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Niagara Springs Hatchery	ST	SU	2013	460,000	04-11-13	04-24-13	Little Salmon River	Salmon River (ID)	
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2013	168,595	04-01-13	04-18-13	Pahsimeroi Hatchery	Pahsimeroi River	
Idaho Dept. of Fish and Game	Pahsimeroi Hatchery	CH1	SU	2013	847,203	04-01-13	04-18-13	Pahsimeroi Hatchery	Pahsimeroi River	
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2013	2,500,000	03-11-13	04-26-13	Rapid River Hatchery	Little Salmon River	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2013	134,200	04-05-13	04-05-13	Sawtooth Hatchery	Salmon River (ID)	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SP	2013	653,300	04-05-13	04-05-13	Sawtooth Hatchery	Salmon River (ID)	
Idaho Dept. of Fish and Game	Sawtooth Hatchery	CH1	SU	2013	1,014,000	04-01-13	04-15-13	Pahsimeroi River	Pahsimeroi River	
<b>Idaho Dept. of Fish and Game Total</b>					<b>8,322,525</b>					
Nez Perce Tribe	Dworshak NFH	ST	SU	2013	65,770	04-16-13	04-16-13	Lolo Creek	Clearwater River M F	
Nez Perce Tribe	Dworshak NFH	ST	SU	2013	140,000	04-16-13	04-16-13	Meadow Creek - CLES	S Fk Clearwater River	
Nez Perce Tribe	Kooskia NFH	CO	UN	2013	323,000	04-01-13	04-07-13	Clear Creek	Clearwater River M F	
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2013	130,500	04-12-13	04-22-13	Lostine Accim Pond	Wallowa River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2013	150,000	04-12-13	04-12-13	Pittsburg Landing Acclim Pond	Snake River	
Nez Perce Tribe	Lyons Ferry Hatchery	CH1	FA	2013	150,000	04-14-13	04-14-13	Big Canyon (Clearwater River)	Clearwater River M F	
Nez Perce Tribe	McCall Hatchery	CH1	SU	2013	130,000	04-01-13	04-05-13	Johnson Cr Idaho	South Fork Salmon River	
Nez Perce Tribe	Nez Perce Tribal Hatchery	CH1	SP	2013	205,000	04-01-13	04-13-13	Nez Perce Tribal Hatchery	Clearwater River M F	
<b>Nez Perce Tribe Total</b>					<b>1,294,270</b>					
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2013	320,000	04-11-13	05-08-13	Big Canyon Acclim.Pd (Grande Ronde)	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Irrigon Hatchery Complex	ST	SU	2013	360,000	04-10-13	04-10-13	Wallowa Acclim Pond	Wallowa River	
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2013	250,000	03-14-13	04-14-13	Lookingglass Creek	Grande Ronde River	
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2013	420,000	03-30-13	04-14-13	Imnaha Acclim Pond	Imnaha River	
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2013	5,500	04-15-13	04-15-13	Wychus Creek	Deschutes River	
Oregon Dept. of Fish and Wildlife	Opal Springs Hatchery	ST	SU	2013	8,000	04-15-13	04-15-13	Crooked River (OR)	Deschutes River	
Oregon Dept. of Fish and Wildlife	Round Butte Hatchery	ST	SU	2013	162,000	04-08-13	04-08-13	Deschutes River	Deschutes River	
<b>Oregon Dept. of Fish and Wildlife Total</b>					<b>1,525,500</b>					
U.S. Fish and Wildlife Service	Carson NFH	CH1	SP	2013	1,170,000	04-17-13	04-17-13	Carson Hatchery	Wind River	
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2013	307,902	04-08-13	04-17-13	Clear Creek	Clearwater River M F	
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2013	400,400	04-08-13	04-17-13	Redhouse (SFk ClearH20 R)	S Fk Clearwater River	
U.S. Fish and Wildlife Service	Dworshak NFH	ST	SU	2013	1,248,146	04-15-13	04-19-13	Dworshak Hatchery	Clearwater River M F	
U.S. Fish and Wildlife Service	Entiat Hatchery	CH1	SU	2013	356,500	04-17-13	04-17-13	Entiat Hatchery	Entiat River	
U.S. Fish and Wildlife Service	Hagerman NFH	ST	SU	2013	843,890	04-11-13	04-25-13	S Fk Salmon River	Salmon River (ID)	
U.S. Fish and Wildlife Service	Little White Salmon NFH	CH0	FA	2013	1,700,000	04-09-13	04-09-13	Little White Salmon Hatchery	Little White Salmon River	

### Hatchery Releases Next Two Weeks, continued

U.S. Fish and Wildlife Service	Little White Salmon NFH	CH1	SP	2013	750,000	04-18-13	04-18-13	Little White Salmon Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2013	6,000,000	04-11-13	04-11-13	Spring Creek Hatchery	L. Col R (D/s McN Dam)
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2013	772,000	04-02-13	04-11-13	Warm Springs Hatchery	Deschutes River
U.S. Fish and Wildlife Service	Willard Hatchery	CH1	SP	2013	296,000	04-18-13	04-18-13	Willard Hatchery	Little White Salmon River
U.S. Fish and Wildlife Service	Winthrop NFH	CH1	SP	2013	375,800	04-15-13	04-26-13	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2013	55,500	04-15-13	05-24-13	Winthrop Hatchery	Methow River
U.S. Fish and Wildlife Service	Winthrop NFH	ST	SU	2013	59,300	04-15-13	05-24-13	Winthrop Hatchery	Methow River
<b>U.S. Fish and Wildlife Service Total</b>					<b>14,335,438</b>				
Umatilla Tribe	Cascade Hatchery	CO	UN	2013	1,000,000	03-25-13	04-22-13	Pendelton Acclim Pond	Umatilla River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2013	100,000	04-06-13	04-15-13	Grande Ronde Acclim Pond	Grande Ronde River
Umatilla Tribe	Lookingglass Hatchery	CH1	SP	2013	134,514	03-21-13	04-14-13	Catherine Cr Acclim Pond	Grande Ronde River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2013	178,400	04-08-13	04-15-13	Imeques Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2013	195,500	04-08-13	04-15-13	Thornhollow Acclim Pond	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2013	225,000	04-08-13	04-15-13	Imeques Acclim Pond	Umatilla River
<b>Umatilla Tribe Total</b>					<b>1,833,414</b>				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2013	75,000	04-09-13	04-24-13	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	2013	645,000	04-15-13	04-15-13	Chelan Falls Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Chiwawa Hatchery	CH1	SP	2013	275,000	04-15-13	05-01-13	Chiwawa Hatchery	Wenatchee River
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	CH1	SU	2013	600,000	04-15-13	05-10-13	Similkameen Acclim Pd	Okanogan River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	CH1	FA	2013	489,000	04-10-13	04-15-13	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2013	84,000	04-10-13	04-20-13	Dayton Acclim Pond	Touchet River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2013	100,000	04-15-13	04-20-13	Walla Walla River	Walla Walla River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2013	145,000	04-15-13	05-20-13	Lyons Ferry Hatchery	Snake River
Washington Dept. of Fish and Wildlife	Lyons Ferry Hatchery	ST	SU	2013	206,000	04-10-13	04-30-13	Cottonwood Acclim Pond	Grande Ronde River
Washington Dept. of Fish and Wildlife	Ringold Springs Hatchery	ST	SU	2013	186,153	04-10-13	04-20-13	Ringold Springs Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	CH1	SP	2013	260,000	04-01-13	04-27-13	Curl Lake Acclim Pond	Tucannon River
Washington Dept. of Fish and Wildlife	Tucannon Hatchery	ST	SU	2013	58,000	04-15-13	04-20-13	Tucannon River	Tucannon River
Washington Dept. of Fish and Wildlife	Washougal Hatchery	CO	NO	2013	2,550,000	04-01-13	04-07-13	Klickitat River	Klickitat River
Washington Dept. of Fish and Wildlife	Wells Hatchery	CH1	SU	2013	290,000	04-15-13	04-25-13	Wells Hatchery	Mid-Columbia River
Washington Dept. of Fish and Wildlife	Wells Hatchery	ST	SU	2013	9,500	04-15-13	04-15-13	Omak Creek	Okanogan River
<b>Washington Dept. of Fish and Wildlife Total</b>					<b>5,897,653</b>				
Yakama Tribe	Cascade Hatchery	CO	UN	2013	130,867	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Cascade Hatchery	CO	UN	2013	306,946	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	249,305	03-15-13	05-15-13	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	255,745	03-15-13	05-15-13	Clark Flat Acclim Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2013	266,311	03-15-13	05-15-13	Jack Creek Acclim Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	102,975	04-15-13	07-01-13	Stiles Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	104,059	04-15-13	07-01-13	Holmes Pond	Yakima River
Yakama Tribe	Eagle Creek NFH	CO	UN	2013	237,043	04-15-13	07-01-13	Easton Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CH1	FA	2013	25,000	04-12-13	04-12-13	Prosser Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	124,425	04-15-13	07-01-13	Lost Creek Acclim Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	131,858	04-15-13	07-01-13	Stiles Pond	Yakima River
Yakama Tribe	Prosser Acclim. Pond	CO	UN	2013	322,100	04-01-13	07-01-13	Prosser Acclim Pond	Yakima River
Yakama Tribe	Willard Hatchery	CO	UN	2013	30,343	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Willard Hatchery	CO	UN	2013	73,036	04-15-13	06-15-13	Icicle Creek	Wenatchee River
Yakama Tribe	Winthrop NFH	CO	UN	2013	253,485	04-15-13	06-15-13	Winthrop Hatchery	Methow River
<b>Yakama Tribe Total</b>					<b>2,613,498</b>				
<b>Grand Total</b>					<b>35,906,487</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
03/22/2013	63.8	0.0	62.0	0.0	69.9	0.0	71.2	0.0	76.6	0.0	81.4	0.0	76.1	0.0
03/23/2013	56.9	0.0	60.1	0.0	61.6	0.0	59.8	0.0	66.6	0.0	78.2	0.0	75.9	0.0
03/24/2013	45.7	0.0	45.0	0.0	49.4	0.0	48.3	0.0	53.1	0.0	70.2	0.0	72.4	0.0
03/25/2013	67.7	0.0	69.7	0.0	72.4	0.0	74.2	0.0	77.2	0.0	74.8	0.0	71.4	0.0
03/26/2013	86.9	0.0	91.6	0.0	89.5	0.0	88.8	0.0	92.0	0.0	85.3	0.0	78.0	0.0
03/27/2013	102.3	0.0	100.5	0.0	98.4	0.0	95.5	0.0	99.6	0.0	97.5	0.0	91.3	0.0
03/28/2013	108.5	0.0	109.4	0.0	112.3	7.3	111.7	1.3	115.5	0.0	121.4	2.5	112.2	2.1
03/29/2013	97.6	0.0	96.6	0.0	102.0	0.0	103.3	0.0	107.7	0.0	119.3	0.4	117.3	0.3
03/30/2013	67.5	0.0	66.1	0.0	79.3	0.0	88.2	0.0	95.9	0.0	104.6	0.0	100.7	0.0
03/31/2013	64.6	0.0	69.9	0.0	71.7	0.0	68.9	0.0	73.2	0.0	90.9	0.0	98.0	0.0
04/01/2013	84.4	0.0	86.0	0.0	86.9	0.0	86.8	0.0	92.0	0.0	93.7	0.0	91.9	0.0
04/02/2013	95.3	0.0	87.8	0.0	---	---	83.0	0.0	89.5	0.0	95.0	0.0	95.2	0.2
04/03/2013	125.8	0.0	124.0	0.0	123.7	0.0	121.0	0.0	126.2	0.0	119.0	2.1	100.3	0.0
04/04/2013	123.5	0.0	123.0	0.0	127.8	4.6	129.3	3.7	136.4	0.6	141.9	4.4	132.8	4.0

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

Date	Dworshak		Hells Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/22/2013	1.6	0.0	---	---	39.7	0.0	37.7	0.0	38.6	0.0	35.9	0.0
03/23/2013	1.6	0.0	---	---	35.3	0.0	35.4	0.0	40.0	0.0	41.1	0.0
03/24/2013	1.6	0.0	---	---	34.8	0.0	32.1	0.0	33.0	0.0	34.3	0.0
03/25/2013	1.6	0.0	---	---	34.0	0.0	30.9	0.0	36.2	0.0	35.1	0.0
03/26/2013	1.6	0.0	---	---	34.0	0.0	30.9	0.0	30.9	0.0	27.7	0.0
03/27/2013	1.6	0.0	---	---	32.8	0.0	23.8	0.8	28.7	0.0	29.5	0.0
03/28/2013	1.6	0.0	---	---	26.8	0.0	25.9	0.0	25.3	0.0	26.0	0.0
03/29/2013	1.6	0.0	---	---	37.7	0.0	35.8	0.0	39.0	0.0	38.8	0.0
03/30/2013	1.6	0.0	---	---	36.8	0.0	36.1	0.0	37.2	0.0	38.7	0.0
03/31/2013	3.2	0.0	---	---	42.9	0.0	46.1	0.0	48.8	0.0	48.2	0.0
04/01/2013	8.4	0.0	---	---	45.7	0.0	50.8	0.0	54.2	0.0	55.8	0.0
04/02/2013	9.9	0.0	---	---	57.0	0.0	54.6	0.0	59.5	0.0	61.7	0.2
04/03/2013	9.9	0.0	---	---	57.5	20.1	55.9	16.9	58.7	27.8	57.8	47.3
04/04/2013	9.9	0.0	---	---	56.5	20.3	58.2	17.4	60.9	28.0	61.3	50.8

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

Date	McNary		John Day		The Dalles		Bonneville			
	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
03/22/2013	107.7	0.0	125.0	0.0	126.2	0.0	138.2	1.3	40.3	86.7
03/23/2013	122.8	0.0	120.8	0.0	121.2	0.0	142.0	1.3	43.0	85.4
03/24/2013	111.0	0.0	123.1	0.0	120.8	0.0	141.6	1.3	42.4	85.5
03/25/2013	109.5	0.0	130.9	0.0	129.4	0.0	139.6	1.3	41.7	84.3
03/26/2013	105.4	0.4	119.7	0.0	117.0	0.0	140.7	1.2	44.7	82.3
03/27/2013	123.9	0.0	138.7	0.0	140.9	0.0	135.9	1.2	41.8	80.4
03/28/2013	118.5	0.0	125.1	0.0	120.6	0.0	138.1	1.2	34.5	89.9
03/29/2013	148.3	0.0	128.1	0.0	122.2	0.0	137.8	1.2	29.5	94.6
03/30/2013	148.7	0.0	157.1	0.0	156.2	0.0	179.1	1.1	65.8	99.8
03/31/2013	148.5	0.0	165.3	0.0	162.5	0.0	177.1	1.2	64.3	99.2
04/01/2013	139.2	11.8	157.7	0.0	158.0	0.0	182.5	1.2	65.5	103.3
04/02/2013	168.4	38.8	162.8	0.0	158.3	0.0	169.1	1.2	52.5	102.9
04/03/2013	169.8	38.8	174.6	0.0	169.4	0.0	171.2	1.4	52.3	105.1
04/04/2013	171.2	46.0	185.9	0.0	182.7	0.0	196.6	1.5	74.9	107.8



## Gas Bubble Trauma Monitoring Results from Representative Sites on the Snake River and Columbia River

Site	Date	Species	Number of Fish	Number w GBT signs	Number w Fin Signs	% Fin GBT	% Severe Fin GBT	Number of Fish with Fin GBT Listed by Highest Rank			
								Rank 1	Rank 2	Rank 3	Rank 4
<b>Lower Granite Dam</b>											
<b>Little Goose Dam</b>											
<b>Lower Monumental Dam</b>											
	04/04/13	Chinook + Steelhead	4	0	0	0.00%	0.00%	0	0	0	0
<b>McNary Dam</b>											
<b>Bonneville Dam</b>											
<b>Rock Island Dam</b>											

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

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

Date	Hungry H. Dnst			Boundary			Grand Coulee			Grand C. Tlwr			Chief Joseph							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
3/22	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/25	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102.8	102.8	103.0	12
3/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102.8	103.1	103.3	24
3/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	103.3	103.5	103.7	24
3/28	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	103.5	103.7	103.8	24
3/29	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102.2	102.3	102.7	22
3/30	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	101.8	102.2	102.4	24
3/31	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102.7	103.1	103.2	24
4/1	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	102.7	102.8	103.1	15
4/2	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
4/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	104.1	104.3	104.7	19
4/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	103.8	104.0	104.3	23

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

Date	Chief J. Dnst			Wells			Wells Dwnstrm			Rocky Reach			Rocky R. Tlwr							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
3/22	---	---	---	0	---	---	---	0	---	---	---	0	102.3	102.5	102.7	22	102.1	102.3	102.4	22
3/23	---	---	---	0	---	---	---	0	---	---	---	0	101.7	101.9	102.0	23	101.5	101.7	101.9	23
3/24	---	---	---	0	---	---	---	0	---	---	---	0	102.0	102.3	102.8	22	101.8	102.0	102.1	22
3/25	103.9	104.0	107.6	13	---	---	---	0	---	---	---	0	102.8	103.2	103.5	22	102.6	102.9	103.2	21
3/26	103.4	104.1	105.3	24	---	---	---	0	---	---	---	0	103.8	104.3	104.6	24	103.5	104.0	104.2	24
3/27	103.6	104.2	104.9	24	---	---	---	0	---	---	---	0	104.5	104.6	104.7	24	104.1	104.3	104.3	24
3/28	101.9	103.9	104.4	24	---	---	---	0	---	---	---	0	104.1	104.3	104.4	24	104.4	104.8	109.1	24
3/29	99.7	100.9	103.6	22	---	---	---	0	---	---	---	0	104.0	104.2	104.3	24	104.0	104.4	107.0	24
3/30	99.1	100.0	103.9	24	---	---	---	0	---	---	---	0	105.1	106.4	107.0	24	104.8	105.9	106.6	24
3/31	99.4	100.0	100.7	24	103.8	103.8	103.8	1	103.9	103.9	103.9	1	106.5	106.7	106.9	24	106.0	106.3	106.5	24
4/1	100.4	100.6	101.3	15	104.1	104.5	104.9	23	104.4	105.0	105.4	23	106.1	106.3	106.6	24	105.7	105.9	106.1	24
4/2	---	---	---	0	104.0	104.4	104.7	23	104.3	104.8	105.3	23	105.5	105.7	105.8	24	105.2	105.3	105.5	24
4/3	104.0	104.4	104.8	18	103.6	104.0	104.3	22	103.9	104.3	104.7	22	105.3	105.4	105.5	24	105.0	105.2	105.4	24
4/4	103.9	104.3	104.5	23	104.6	104.9	105.3	20	105.2	106.0	109.2	20	105.6	105.7	105.9	23	105.8	106.5	110.6	23

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

Date	Rock Island			Rock I. Tlwr			Wanapum			Wanapum Tlwr			Priest Rapids							
	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#					
	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High	Avg	Avg	High					
3/22	101.7	101.8	102.1	22	101.9	102.1	102.3	22	102.3	102.6	102.9	24	102.2	102.7	103.2	24	102.0	102.3	102.8	24
3/23	101.2	101.3	101.5	23	101.5	101.6	101.9	23	101.6	101.7	101.9	24	101.5	102.0	102.6	24	101.8	102.2	102.6	24
3/24	101.4	101.7	102.0	23	101.8	102.1	102.4	22	101.9	102.3	102.5	24	101.9	102.5	102.8	24	102.2	102.7	103.0	24
3/25	102.0	102.5	102.7	22	102.3	102.7	102.9	21	103.0	103.7	104.1	24	102.8	103.4	103.9	24	103.0	103.4	103.6	24
3/26	102.8	103.1	103.6	24	103.1	103.4	103.9	24	103.8	104.3	104.7	24	103.3	103.8	104.1	24	103.9	104.3	104.5	24
3/27	103.6	103.7	103.8	24	103.8	103.9	104.0	24	104.0	104.1	104.5	24	103.7	103.9	104.4	24	104.4	104.7	105.0	24
3/28	103.4	103.6	103.7	24	103.6	103.8	103.9	24	103.5	103.7	103.9	24	103.9	104.5	108.6	24	104.1	104.2	104.4	24
3/29	103.3	103.7	103.9	24	103.5	103.9	104.3	24	103.2	103.4	103.5	24	103.6	103.9	104.5	24	104.1	104.6	105.9	24
3/30	103.4	104.0	105.1	24	103.8	104.2	105.5	24	103.8	104.6	105.1	24	103.8	104.3	104.6	24	104.3	104.6	104.9	24
3/31	106.2	106.7	107.1	24	106.5	107.0	107.2	24	105.1	105.7	106.0	24	104.8	105.4	105.9	24	105.2	105.8	106.0	24
4/1	105.8	106.1	106.4	24	106.0	106.3	106.6	24	105.9	106.3	106.7	24	105.4	105.8	106.0	24	105.7	105.9	106.0	24
4/2	105.0	105.2	105.4	24	105.2	105.3	105.5	24	105.1	105.3	105.7	24	105.0	105.4	105.9	24	105.2	105.5	105.7	24
4/3	104.7	105.0	105.2	24	104.9	105.2	105.4	24	105.0	105.4	105.8	24	105.5	106.5	110.6	24	105.1	105.5	105.7	24
4/4	104.8	105.0	105.2	23	105.0	105.2	105.4	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	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
3/22	101.6	101.8	102.1	24	---	---	---	0	103.2	103.9	105.1	24	97.7	98.5	100.1	24	---	---	---	0			
3/23	101.0	101.2	101.3	24	---	---	---	0	100.6	101.7	102.2	24	98.4	99.4	101.6	24	---	---	---	0			
3/24	101.2	101.6	101.8	24	---	---	---	0	99.2	100.3	101.8	24	97.0	98.1	99.4	24	---	---	---	0			
3/25	102.1	102.5	102.7	24	---	---	---	0	102.4	104.8	106.2	24	95.1	95.7	97.0	24	---	---	---	0			
3/26	102.8	103.0	103.1	24	---	---	---	0	104.2	105.5	108.5	24	95.0	96.8	100.9	23	---	---	---	0			
3/27	103.1	103.3	103.4	24	---	---	---	0	104.7	106.4	111.3	24	92.0	92.0	95.6	10	103.6	103.6	104.7	12			
3/28	103.1	103.2	103.2	24	---	---	---	0	103.9	105.0	106.1	24	---	---	---	0	102.7	103.6	104.6	24			
3/29	103.5	103.8	104.6	24	---	---	---	0	103.7	104.7	105.6	24	---	---	---	0	102.6	103.5	104.7	24			
3/30	103.4	103.7	103.8	24	---	---	---	0	103.6	104.9	106.4	24	---	---	---	0	102.6	103.8	105.1	24			
3/31	104.2	104.7	104.9	24	---	---	---	0	104.5	105.8	106.7	24	92.2	93.2	96.0	20	102.8	103.9	105.2	24			
4/1	104.8	105.0	105.3	24	---	---	---	0	98.5	101.2	104.8	24	93.2	93.2	95.6	8	102.3	103.2	104.5	23			
4/2	104.5	104.6	104.8	24	---	---	---	0	95.4	95.8	96.2	24	---	---	---	0	102.2	103.2	104.4	24			
4/3	104.2	104.4	104.5	24	---	---	---	0	95.5	95.8	95.9	24	99.9	99.9	100.6	10	102.2	103.1	104.2	24			
4/4	---	---	---	0	---	---	---	0	95.9	96.2	96.3	23	98.5	98.7	99.2	22	101.9	102.2	102.6	23			

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

Date	Clrwrtr-Lewiston			#	Lower Granite			#	L. Granite Tlwr			#	Little Goose			#	L. Goose Tlwr			#			
	24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
3/22	84.1	84.5	85.0	24	100.5	100.7	100.9	24	99.8	100.0	100.2	24	101.2	101.3	101.5	24	101.0	101.2	101.4	24			
3/23	83.8	84.1	84.7	24	100.1	100.2	100.5	24	99.3	99.5	100.0	24	100.7	101.0	101.4	24	100.5	100.7	101.2	24			
3/24	84.3	84.9	85.2	23	100.9	101.3	101.7	24	99.9	100.4	100.6	24	100.8	100.9	101.0	24	100.6	101.1	101.4	24			
3/25	---	---	---	0	101.9	102.1	102.2	24	100.9	101.2	101.6	24	101.3	101.8	102.1	24	101.6	102.1	102.4	24			
3/26	---	---	---	0	101.8	101.8	101.9	24	101.1	101.2	101.5	24	101.9	102.2	102.7	24	102.0	102.5	103.1	24			
3/27	---	---	---	0	101.5	101.7	101.8	24	100.9	101.2	101.6	24	102.7	103.0	103.4	24	103.8	106.2	114.2	24			
3/28	---	---	---	0	101.9	102.0	102.3	24	101.4	101.6	101.9	24	102.6	102.9	103.1	24	102.6	103.7	107.2	24			
3/29	---	---	---	0	102.5	102.8	103.0	24	101.9	102.3	102.6	24	102.3	102.6	103.0	24	100.7	100.9	101.2	24			
3/30	---	---	---	0	104.1	105.1	105.7	24	103.2	103.9	104.5	24	102.0	102.5	102.8	24	101.0	101.8	102.4	24			
3/31	---	---	---	0	105.8	106.1	106.8	24	104.8	105.0	105.1	24	104.3	104.9	105.7	24	102.3	102.7	102.9	24			
4/1	---	---	---	0	104.9	105.2	105.9	24	104.4	104.6	104.8	24	104.1	104.6	105.2	24	102.8	103.4	105.1	24			
4/2	---	---	---	0	104.2	104.4	104.6	24	103.6	103.8	104.0	24	103.6	103.9	104.0	24	102.2	102.9	103.2	24			
4/3	102.0	102.0	103.4	12	104.3	104.5	104.9	24	110.4	111.2	111.6	24	104.0	104.5	104.7	24	109.0	110.3	110.6	24			
4/4	100.2	100.6	101.0	23	104.7	104.9	105.1	23	111.2	111.4	112.3	22	105.3	105.7	106.1	22	110.3	110.5	110.8	22			

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

Date	Lower Mon.			#	L. Mon. Tlwr			#	Ice Harbor			#	Ice Harbor Tlwr			#	McNary-Oregon			#			
	24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h			24 h	12 h	
	Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High		Avg	Avg	High
3/22	102.0	102.2	102.4	24	101.4	101.6	102.2	24	102.7	102.9	103.0	24	102.7	102.9	103.1	24	---	---	---	0			
3/23	101.3	101.4	101.7	24	100.8	101.0	101.4	24	102.1	102.3	102.5	24	102.3	102.7	103.2	24	---	---	---	0			
3/24	101.4	101.7	101.9	24	100.7	101.1	101.7	24	102.1	102.3	102.5	24	102.2	102.6	103.1	24	---	---	---	0			
3/25	101.8	101.9	102.4	24	101.3	101.7	101.9	24	102.7	103.0	103.2	24	102.9	103.6	104.3	24	---	---	---	0			
3/26	102.0	102.2	102.5	24	101.7	102.0	102.5	24	103.3	103.5	103.8	24	103.6	104.2	105.1	24	---	---	---	0			
3/27	101.9	102.1	102.5	24	101.8	102.2	102.8	24	103.8	104.0	104.3	24	104.2	104.8	106.0	24	---	---	---	0			
3/28	101.9	102.1	102.3	24	102.1	102.7	103.6	24	103.5	103.7	104.1	24	104.1	104.6	105.2	24	---	---	---	0			
3/29	102.0	102.4	102.7	24	101.7	102.0	102.5	24	103.4	103.7	104.0	24	103.7	104.2	104.9	24	---	---	---	0			
3/30	102.5	102.9	103.6	24	101.9	102.4	102.7	24	103.9	104.1	104.2	24	103.8	104.3	104.6	24	---	---	---	0			
3/31	103.8	104.1	104.3	24	103.2	103.8	104.1	24	104.6	104.9	105.1	24	104.7	105.3	105.8	24	---	---	---	0			
4/1	104.0	104.2	104.5	24	103.4	103.7	104.1	24	105.1	105.3	105.6	24	104.9	105.1	105.4	24	---	---	---	0			
4/2	102.8	103.0	103.1	24	102.3	102.6	103.2	24	104.7	104.8	105.0	24	104.4	104.8	105.4	24	---	---	---	0			
4/3	103.4	103.5	103.7	24	116.2	117.0	117.2	24	104.7	104.8	105.0	24	113.6	115.2	115.9	24	---	---	---	0			
4/4	104.2	104.4	104.6	22	117.3	117.5	117.8	23	105.0	105.1	105.5	22	115.1	115.6	115.9	22	---	---	---	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>							
	24 h	12 h	#	24 h	12 h	#	24h	12h	#	24h	12h	#	24h	12h	AVG	High	#			
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr
3/22	---	---	---	0	101.1	101.5	101.9	24	102.2	102.3	102.5	24	102.2	102.6	103.0	24	101.6	101.9	102.4	24
3/23	---	---	---	0	100.7	101.1	101.4	24	101.8	102.0	102.2	24	101.6	101.9	102.4	24	101.6	102.1	102.4	24
3/24	---	---	---	0	101.0	101.2	101.6	24	102.3	102.8	103.0	24	102.1	102.4	102.9	24	102.3	102.9	103.2	24
3/25	---	---	---	0	101.8	102.1	103.1	24	103.6	104.2	104.9	24	103.3	103.7	104.0	24	103.1	103.7	104.1	24
3/26	104.4	104.7	105.5	16	103.0	103.4	104.1	24	104.0	104.2	104.5	24	103.8	104.1	104.4	24	103.7	104.1	104.4	24
3/27	105.4	105.8	106.5	24	104.3	104.6	105.2	24	104.3	104.6	105.3	24	103.9	104.3	104.8	24	103.9	104.3	104.8	24
3/28	105.2	105.9	106.8	24	104.7	104.9	105.1	24	103.9	104.0	104.5	24	103.4	103.6	104.1	24	104.1	104.4	104.6	24
3/29	105.4	105.8	106.2	24	104.7	104.9	105.4	24	103.8	104.0	104.2	24	103.4	103.7	104.2	24	103.9	104.2	104.6	24
3/30	105.8	106.3	106.6	24	105.0	105.3	106.0	24	105.4	106.6	107.9	24	104.6	105.5	106.2	24	104.3	104.8	105.3	24
3/31	106.5	106.9	107.8	24	105.7	105.9	106.4	24	107.5	108.1	110.1	24	106.3	107.0	107.7	24	105.6	106.1	106.4	24
4/1	106.4	106.5	106.7	24	106.7	107.5	110.7	24	107.8	108.4	108.8	24	106.8	107.0	107.3	24	106.2	106.4	106.6	24
4/2	106.3	106.3	106.5	24	110.0	111.3	111.7	24	106.6	106.8	107.2	24	106.0	106.2	106.5	24	105.7	105.9	106.2	24
4/3	106.4	106.7	107.8	24	111.1	111.4	111.7	24	106.9	107.4	107.8	24	106.1	106.5	106.6	24	106.5	107.0	107.3	24
4/4	107.2	107.3	107.6	22	110.7	111.2	111.5	23	108.5	108.7	109.0	23	107.4	107.6	108.0	23	107.7	108.0	108.3	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>							
	24 h	12 h	#	24 h	12 h	#	24h	12h	#	24h	12h	#	24h	12h	High	#				
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
3/22	102.0	102.3	102.5	24	101.5	101.7	101.8	24	103.4	104.2	104.9	24	102.3	103.0	103.5	24	105.6	106.1	107.3	24
3/23	102.0	102.5	102.9	24	102.1	102.5	102.9	24	105.8	106.6	107.4	24	104.0	105.7	106.5	24	106.9	107.7	108.6	24
3/24	102.6	103.2	103.5	24	102.7	102.9	103.1	24	106.1	106.4	106.8	24	104.6	105.0	105.6	24	108.0	108.3	108.4	24
3/25	103.4	103.9	104.4	24	103.5	103.9	104.2	24	106.6	107.5	108.0	24	104.5	105.3	105.8	24	108.5	108.8	109.1	24
3/26	103.9	104.3	104.6	24	104.4	104.7	105.1	24	107.3	107.7	108.1	24	106.1	107.2	107.9	24	108.6	108.9	109.3	24
3/27	104.1	104.4	104.8	24	105.1	105.3	105.5	24	108.2	108.8	109.5	24	107.6	108.6	109.1	24	108.6	109.1	109.7	24
3/28	104.2	104.7	105.0	24	105.0	105.3	105.5	24	108.2	108.6	108.8	24	108.1	108.9	109.4	24	108.6	109.1	109.6	24
3/29	104.1	104.5	105.0	24	105.2	105.5	105.6	24	108.7	108.9	109.3	24	108.3	109.7	110.8	24	108.8	109.3	109.7	24
3/30	104.3	104.9	105.4	24	105.6	106.1	106.4	24	107.7	108.8	109.4	24	108.1	109.1	109.9	24	109.9	110.4	111.3	24
3/31	105.4	106.1	106.5	24	106.2	106.5	106.9	24	107.3	107.9	108.6	24	107.0	108.6	109.9	24	112.6	112.9	113.8	24
4/1	106.1	106.4	106.7	24	105.8	106.0	106.3	24	106.4	106.5	106.8	24	106.8	107.3	107.7	24	110.9	111.4	111.7	24
4/2	105.5	105.8	106.0	24	105.2	105.5	105.9	24	106.6	106.8	106.9	24	106.8	108.2	109.3	24	111.8	112.3	113.2	24
4/3	106.2	106.9	107.1	24	106.1	106.8	107.1	24	107.8	108.3	108.8	24	107.3	108.7	110.0	24	112.4	112.8	113.2	24
4/4	107.4	107.7	107.8	23	107.3	107.3	107.6	23	108.0	108.3	108.6	23	107.5	107.8	108.3	23	113.1	113.6	114.1	23

## Two-Week Summary of Passage Indices

Source: Fish Passage Center

Updated: 4/5/2013 10:03

### Two-Week Summary of Passage Indices

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

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

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

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

<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)
03/22/2013	278	46	395	1	---	---	---	---	---	---	56
03/23/2013 *	248	41	3,416	1	---	---	---	---	---	---	75
03/24/2013 *	729	58	738	2	---	---	---	---	---	---	25
03/25/2013 *	182	55	569	12	---	---	---	---	---	---	31
03/26/2013 *	182	22	307	11	340	---	---	---	---	---	32
03/27/2013 *	315	5	156	0	700	---	---	---	---	---	71
03/28/2013	571	16	188	0	1,550	---	---	---	---	---	50
03/29/2013 *	769	26	201	5	1,310	---	---	---	---	---	28
03/30/2013	1,733	45	656	6	3,530	---	---	---	---	---	11
03/31/2013	1,192	---	1,284	9	4,380	---	---	---	---	---	117
04/01/2013 *	1,222	---	570	15	4,260	---	49	1	---	124	144
04/02/2013 *	1,520	---	440	108	5,580	---	---	4	---	60	149
04/03/2013 *	2,500	---	592	6	4,286	219	---	14	---	72	183
04/04/2013 *	2,447	---	1,030	23	4,622	---	16	14	---	136	414
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>13,888</b>	<b>314</b>	<b>10,542</b>	<b>199</b>	<b>30,558</b>	<b>219</b>	<b>65</b>	<b>33</b>	<b>0</b>	<b>392</b>	<b>1,386</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>992</b>	<b>35</b>	<b>753</b>	<b>14</b>	<b>3,056</b>	<b>219</b>	<b>33</b>	<b>8</b>	<b>0</b>	<b>98</b>	<b>99</b>
<b>YTD</b>	<b>21,096</b>	<b>1,282</b>	<b>11,730</b>	<b>203</b>	<b>30,558</b>	<b>219</b>	<b>65</b>	<b>33</b>	<b>0</b>	<b>392</b>	<b>7,476</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)
03/22/2013	0	0	2	0	---	---	---	---	---	---	298
03/23/2013 *	0	0	0	0	---	---	---	---	---	---	412
03/24/2013 *	0	0	1	0	---	---	---	---	---	---	234
03/25/2013 *	0	0	1	2	---	---	---	---	---	---	251
03/26/2013 *	0	0	0	1	10	---	---	---	---	---	310
03/27/2013 *	0	3	0	1	0	---	---	---	---	---	277
03/28/2013	0	0	0	0	0	---	---	---	---	---	208
03/29/2013 *	0	0	1	1	0	---	---	---	---	---	169
03/30/2013	0	0	0	3	0	---	---	---	---	---	216
03/31/2013	0	---	1	2	0	---	---	---	---	---	380
04/01/2013 *	0	---	1	5	0	---	0	4	---	0	282
04/02/2013 *	0	---	1	3	0	---	---	16	---	0	265
04/03/2013 *	0	---	0	3	22	0	---	0	---	0	238
04/04/2013 *	0	---	0	0	31	---	0	0	---	4	261
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>3</b>	<b>8</b>	<b>21</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>4</b>	<b>3,801</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>272</b>
<b>YTD</b>	<b>2</b>	<b>5</b>	<b>16</b>	<b>34</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>4</b>	<b>6,878</b>

Two-Week Summary of Passage Indices

COMBINED COHO											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/22/2013	0	0	0	0	---	---	---	---	---	---	17
03/23/2013 *	0	0	0	0	---	---	---	---	---	---	0
03/24/2013 *	0	0	0	0	---	---	---	---	---	---	32
03/25/2013 *	0	0	0	0	---	---	---	---	---	---	38
03/26/2013 *	0	0	0	0	0	---	---	---	---	---	32
03/27/2013 *	0	0	0	0	0	---	---	---	---	---	19
03/28/2013	0	0	0	0	10	---	---	---	---	---	6
03/29/2013 *	0	0	0	0	0	---	---	---	---	---	11
03/30/2013	0	0	0	0	0	---	---	---	---	---	22
03/31/2013	0	---	0	0	0	---	---	---	---	---	124
04/01/2013 *	0	---	0	0	10	---	0	1	---	0	62
04/02/2013 *	0	---	0	0	20	---	---	4	---	0	97
04/03/2013 *	0	---	0	0	0	0	---	0	---	0	189
04/04/2013 *	0	---	0	0	0	---	0	3	---	4	267
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>916</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>65</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>1,160</b>

COMBINED STEELHEAD											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/22/2013	0	3	0	0	---	---	---	---	---	---	6
03/23/2013 *	0	4	1	0	---	---	---	---	---	---	12
03/24/2013 *	0	2	1	0	---	---	---	---	---	---	6
03/25/2013 *	0	1	1	6	---	---	---	---	---	---	6
03/26/2013 *	0	1	0	6	50	---	---	---	---	---	0
03/27/2013 *	0	1	0	3	70	---	---	---	---	---	6
03/28/2013	0	16	1	8	30	---	---	---	---	---	0
03/29/2013 *	0	536	0	3	100	---	---	---	---	---	17
03/30/2013	0	686	2	3	110	---	---	---	---	---	6
03/31/2013	2	---	0	5	230	---	---	---	---	---	15
04/01/2013 *	1	---	2	8	390	---	7	1	---	112	7
04/02/2013 *	1	---	3	4	480	---	---	0	---	92	39
04/03/2013 *	5	---	3	4	1,362	37	---	1	---	64	43
04/04/2013 *	28	---	0	9	1,799	---	0	3	---	124	67
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>37</b>	<b>1,250</b>	<b>14</b>	<b>59</b>	<b>4,621</b>	<b>37</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>392</b>	<b>230</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>3</b>	<b>139</b>	<b>1</b>	<b>4</b>	<b>462</b>	<b>37</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>98</b>	<b>16</b>
<b>YTD</b>	<b>40</b>	<b>1,320</b>	<b>25</b>	<b>60</b>	<b>4,621</b>	<b>37</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>392</b>	<b>255</b>

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/22/2013	0	0	0	0	---	---	---	---	---	---	0
03/23/2013 *	0	0	0	0	---	---	---	---	---	---	0
03/24/2013 *	0	0	0	0	---	---	---	---	---	---	0
03/25/2013 *	0	0	0	0	---	---	---	---	---	---	0
03/26/2013 *	0	0	0	0	0	---	---	---	---	---	0
03/27/2013 *	0	0	0	0	10	---	---	---	---	---	0
03/28/2013	0	0	0	0	0	---	---	---	---	---	6
03/29/2013 *	0	0	0	0	0	---	---	---	---	---	0
03/30/2013	0	0	0	0	0	---	---	---	---	---	0
03/31/2013	0	---	0	0	0	---	---	---	---	---	0
04/01/2013 *	0	---	0	0	0	---	0	0	---	0	0
04/02/2013 *	0	---	0	0	20	---	---	0	---	0	6
04/03/2013 *	0	---	0	0	0	0	---	1	---	4	24
04/04/2013 *	0	---	0	0	0	---	0	0	---	4	13
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>49</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>49</b>

COMBINED LAMPREY JUVENILES											
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR <sup>†</sup> (Coll)	LGS (Coll)	LMN (Coll)	RIS (Coll)	MCN (Coll)	JDA (Coll)	BO2 (Coll)
03/22/2013	0	0	0	0	---	---	---	---	---	---	44
03/23/2013 *	0	0	0	0	---	---	---	---	---	---	60
03/24/2013 *	0	0	0	0	---	---	---	---	---	---	60
03/25/2013 *	0	0	0	0	---	---	---	---	---	---	64
03/26/2013 *	0	0	0	0	0	---	---	---	---	---	76
03/27/2013 *	0	0	0	0	10	---	---	---	---	---	40
03/28/2013	0	0	0	0	0	---	---	---	---	---	16
03/29/2013 *	0	0	0	0	0	---	---	---	---	---	20
03/30/2013	0	0	0	0	0	---	---	---	---	---	8
03/31/2013	0	---	0	0	0	---	---	---	---	---	32
04/01/2013 *	0	---	0	0	0	---	1	0	---	428	56
04/02/2013 *	0	---	0	0	0	---	---	2	---	252	36
04/03/2013 *	0	---	0	0	0	33	---	0	---	164	52
04/04/2013 *	0	---	0	0	0	---	1	0	---	272	36
04/05/2013	---	---	---	---	---	---	---	---	---	---	---
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>33</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1,116</b>	<b>600</b>
<b># Days:</b>	<b>14</b>	<b>9</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>14</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>33</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>279</b>	<b>43</b>
<b>YTD</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>33</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1,116</b>	<b>1,088</b>

## Two-Week Summary of Passage Indices

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

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

Two classes of fish counts are shown in these tables:

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.

† Caution should be used with interpreting lamprey juvenile collection counts at LGR because of the possibility that lamprey may escape the sample tank before being sampled

### 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:

4/5/13 8:35 AM

03/22/13 TO 04/05/13

		Species						
Site	Data	CH0	CH1	CO	ST	SO	Grand Total	
<b>LGR</b>	Sum of NumberCollected	50	28,470		40	3,840	30	32,430
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	50	28,446		40	3,839	30	32,405
	Sum of Numbertrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	24		0	1	0	25
	Sum of FacilityMorts	0	0		0	0	0	0
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	24		0	1	0	25
<b>LGS</b>	Sum of NumberCollected		201			34		235
	Sum of NumberBarged		0			0		0
	Sum of NumberBypassed		199			34		233
	Sum of Numbertrucked		0			0		0
	Sum of SampleMorts		1			0		1
	Sum of FacilityMorts		1			0		1
	Sum of ResearchMorts		0			0		0
	Sum of TotalProjectMorts		2			0		2
<b>LMN</b>	Sum of NumberCollected		57			7		64
	Sum of NumberBarged		0			0		0
	Sum of NumberBypassed		57			7		64
	Sum of Numbertrucked		0			0		0
	Sum of SampleMorts		0			0		0
	Sum of FacilityMorts		0			0		0
	Sum of ResearchMorts		0			0		0
	Sum of TotalProjectMorts		0			0		0
Total Sum of NumberCollected		50	28,728		40	3,881	30	32,729
Total Sum of NumberBarged		0	0		0	0	0	0
Total Sum of NumberBypassed		50	28,702		40	3,880	30	32,702
Total Sum of Numbertrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	25		0	1	0	26
Total Sum of FacilityMorts		0	1		0	0	0	1
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	26		0	1	0	27

### YTD Transportation Summary

Source: Fish Passage Center

Updated:

4/5/13 8:35 AM

TO: 04/05/13

		Species						
Site	Data	CH0	CH1	CO	SO	ST	Grand Total	
<b>LGR</b>	Sum of NumberCollected	50	28,470		40	30	3,840	32,430
	Sum of NumberBarged	0	0		0	0	0	0
	Sum of NumberBypassed	50	28,446		40	30	3,839	32,405
	Sum of NumberTrucked	0	0		0	0	0	0
	Sum of SampleMorts	0	24		0	0	1	25
	Sum of FacilityMorts	0	0		0	0	0	0
	Sum of ResearchMorts	0	0		0	0	0	0
	Sum of TotalProjectMorts	0	24		0	0	1	25
<b>LGS</b>	Sum of NumberCollected		201				34	235
	Sum of NumberBarged		0				0	0
	Sum of NumberBypassed		199				34	233
	Sum of NumberTrucked		0				0	0
	Sum of SampleMorts		1				0	1
	Sum of FacilityMorts		1				0	1
	Sum of ResearchMorts		0				0	0
	Sum of TotalProjectMorts		2				0	2
<b>LMN</b>	Sum of NumberCollected		57				7	64
	Sum of NumberBarged		0				0	0
	Sum of NumberBypassed		57				7	64
	Sum of NumberTrucked		0				0	0
	Sum of SampleMorts		0				0	0
	Sum of FacilityMorts		0				0	0
	Sum of ResearchMorts		0				0	0
	Sum of TotalProjectMorts		0				0	0
Total Sum of NumberCollected		50	28,728		40	30	3,881	32,729
Total Sum of NumberBarged		0	0		0	0	0	0
Total Sum of NumberBypassed		50	28,702		40	30	3,880	32,702
Total Sum of NumberTrucked		0	0		0	0	0	0
Total Sum of SampleMorts		0	25		0	0	1	26
Total Sum of FacilityMorts		0	1		0	0	0	1
Total Sum of ResearchMorts		0	0		0	0	0	0
Total Sum of TotalProjectMorts		0	26		0	0	1	27

Cumulative Adult Passage at Mainstem Dams Through: 04/05

DAM	ENDDATE	Spring Chinook						Summer Chinook						Fall Chinook					
		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.		2013		2012		10-Yr Avg.	
		Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	04/04	563	7	49	1	2969	6	0	0	0	0	0	0	0	0	0	0	0	0
TDA	04/04	109	2	19	2	2116	1	0	0	0	0	0	0	0	0	0	0	0	0
JDA	04/04	61	2	0	0	1231	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	04/04	18	0	1	0	341	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR	04/04	13	4	3	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	04/04	6	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0
LGS	04/04	5	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
LGR	04/04	2	0	0	0	1	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	04/04	314	1	2	0	180	0	0	0	0	0	0	0	0	0	0	0	0	0

DAM	ENDDATE	Coho						Sockeye			Steelhead						Lamprey		
		2013		2012		10-Yr Avg.		2013	2012	10-Yr Avg.	2013	2012	10-Yr Avg.	Wild 2013	Wild 2012	10-Yr Avg.	2013	2012	10-Yr Avg.
		Adult	Jack	Adult	Jack	Adult	Jack												
BON	04/04	0	0	0	0	0	0	0	0	0	1939	3175	2674	585	1022	617	-1	0	0
TDA	04/04	0	0	0	0	0	0	0	0	0	200	1151	1731	98	660	493	0	0	0
JDA	04/04	0	0	0	0	0	0	0	0	0	201	297	4617	104	185	1084	0	0	0
MCN	04/04	1	0	-1	0	0	0	0	0	0	477	3292	4737	204	1366	1349	0	0	0
IHR	04/04	0	0	0	0	0	0	0	0	0	1930	221	3351	621	81	767	2	0	0
LMN	04/04	0	0	0	0	0	0	0	0	0	421	442	7307	232	129	1787	0	1	0
LGS	04/04	0	0	0	0	0	0	0	0	0	294	585	6981	148	312	1801	0	0	0
LGR	04/04	0	0	0	0	0	0	0	0	0	4980	5549	6445	1902	1977	1591	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	04/04	2	0	0	0	0	0	0	0	0	4803	5184	5309	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.