



Fish Passage Center Weekly Report #07 - 1

March 9, 2007

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Summary of Events:

Water Supply: Precipitation throughout the Columbia Basin has varied between 93% and 148% of average at individual sub-basins over February. Precipitation above The Dalles has been 117% of average over February. Over the entire water year, precipitation has generally been near or above average.

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

Location	Water Year 2007 February 1-26		Water Year 2007 October 1, 2006 to February 26, 2007	
	Observed (inches)	% Average	Observed (inches)	% Average
	Columbia Above Coulee	2.43	131	13.71
Snake River Above Ice Harbor	1.75	117	8.21	96
Columbia Above The Dalles	2.29	117	13.47	110
Kootenai	2.51	140	14.44	114
Clark Fork	1.81	148	9.15	119
Flathead	2.29	140	11.58	111
Pend Oreille/Spokane	3.86	137	17.59	102
Central Washington	0.87	109	5.33	106
Snake River Plain	0.91	111	4.57	93
Salmon/Boise/Payette	2.35	123	10.45	98
Clearwater	3.55	133	17.98	115
SW Washington Cascades/Cowlitz	7.23	93	49.49	108
Willamette Valley	7.30	108	29.2	125

Snowpack within the Columbia Basin is below average. Average snowpack in the Columbia River for basins above the Snake River confluence is 94% of average, for Snake River Basins the average snowpack is 75% of average, and for lower Columbia Basins between McNary and Bonneville Dam average snowpack is 86% of average.

Table 2 displays the February Final and March Final runoff volume forecasts for multiple reservoirs. Water Supply Forecasts dropped slightly between the February Final and March Final forecasts in Columbia Basins; however, increased several percent in Snake Basins. The current forecast at The Dalles between January and July is 100000 Kaf (93% of average).

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

Location	February Final		March Final	
	% Average (1971- 2000)	Probable Runoff Volume (Kaf)	% Average (1971- 2000)	Probable Runoff Volume (Kaf)
The Dalles (Jan-July)	94	101000	93	100000
Grand Coulee (Jan-July)	102	63900	100	63000
Libby Res. Inflow, MT (Jan-July)	102	6420	100	6320
Hungry Horse Res. Inflow, MT (Jan-July)	93	2060	91	2030
Lower Granite Res. Inflow (Apr- July)	78	16800	80	17300
Brownlee Res. Inflow (Apr-July)	58	3630	60	3760
Dworshak Res. Inflow (Apr-July)	93	2460	96	2530

Grand Coulee Reservoir is at 1278.5 feet (3-8-07) and has drafted 1.8 feet in the last week. Outflows at Grand Coulee have ranged between 71.3 and 121.3 Kcfs over the last week. The end of March FC elevation is 1275.6 feet at Grand Coulee (all Flood Control elevations are based on February Final forecast, the new elevations based on the March Final Forecast are not yet available) and the estimated April 10th (interpolated between the March 31st and April 15th Flood control elevations) elevation is 1264.3 feet at Grand Coulee.

The Libby Reservoir is currently at elevation 2388.4 feet (3-8-07) and drafted 0.4 feet last week. The end of March VarQ FC elevation at Libby is 2392.4 feet, the estimated April 10th elevation is 2392.4 feet at Libby. Outflows remain at the 4.0 Kcfs minimum.

Hungry Horse is currently at an elevation of 3530.5 feet (3-8-07) and has drafted 0.7 feet last week. Outflows at Hungry Horse have been 2.2-2.5 Kcfs last week; Hungry Horse has been operating to Columbia Falls Minimum outflows. Hungry Horse's end of March VarQ FC elevation is 3534.2 feet, the estimated April 10th elevation is 3532.5 feet at Hungry Horse.

Dworshak is currently at an elevation of 1540.6 feet (3-8-07) and refilled 1.8 feet last week; outflows at Dworshak remain at the 1.5 Kcfs minimum. The end of March system FC elevation is 1560.1 feet; the estimated April 10th system FC elevation is 1560.8 feet at Dworshak.

The Brownlee Reservoir was at an elevation of 2055.5 feet on March 8th, 2007, holding steady last week. The end of March FC elevation is 2059.5 feet, the estimated April 10th elevation is 2061.7 feet at Brownlee Dam. Outflows at Brownlee Dam have been 11.4 to 14.8 Kcfs over the last week.

Spill: In accordance with spill planning dates, no planned spill for fish passage has occurred in the system to-date. Spill has occurred in the Snake River at Little Goose Dam over the past week as part of a balloon tag study being conducted by Normandeau Associates. Spill at Bonneville Dam is occurring in association with the corner collector operation.

System Operational Request #2007-2 requested 75 Kcfs spill and operation of the corner collector for four days following either the September 5 or September 9 release, and operation of the corner collector alone for the other release. The request made by the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and the Shoshone-Bannock Tribes was based on the results of a study conducted by the US Fish and Wildlife Service in 2004 that suggests statistically significant benefits to adult survival for fish that passed via spill. The SOR was cognizant of the fact that limited data was available, but the differences relative to passage route were compelling. Spill during 2007 would have enabled the collection of additional data to further investigate the relation between route of passage at Bonneville Dam and survival to adult.

The Technical Management Team did not reach agreement regarding the SOR and elevated the issue to the Implementation Team. The COE and BPA objected to the request at the Implementation Team citing recent juvenile direct survival studies conducted using radio tagged juvenile spring chinook yearlings and summer migrating fall chinook subyearlings (not survival to adult of Spring Creek hatchery fish as had been analyzed by USFWS) as justification. The SOR for spill for Spring Creek hatchery fish, which are subyearling fall chinook migrating in March, was not implemented.

Smolt Monitoring: Sampling began at Bonneville Dam on March 1, in anticipation of arrival of subyearling Chinook salmon released from Spring Creek Hatchery. Approximately 6.5 million subyearlings were released on March 5. Based on the sampling data the fish began arriving on March 6, with the peak number passing on March 8, when the passage index reaching 429,000. The numbers declined quickly on March 9, to 300,000. Smolt Monitoring personnel at the site reported unusually high mortality in the Spring Creek smolts collected at Bonneville Dam. They reported 4.5% mortality on March 8, and 8% mortality on the 9th. Typically the mortality rate is 1 to 1.5%. No immediate cause of the mortality was apparent. The COE has examined gatewells at the project and found no blocked orifices or other likely cause for mortality. Dead fish were examined at the USFWS health lab at Spring Creek and showed no obvious signs of disease or trauma. So the cause of the mortality is unknown at this point.

An SOR was submitted to the COE on March 9, 2007 requesting spill operations to begin immediately and to continue until the issues with the Bonneville Dam bypass system are eliminated as a source of the increased mortality rates observed.

Smolt Monitoring traps began sampling this past week, with small numbers of juvenile salmonids captured at the Grande Ronde Trap. The Imnaha Trap, located at river mile seven on the Imnaha River, operated by the Nez Perce Tribe, began sampling March 5 for SMP. The Grande Ronde Trap, operated by the Oregon Department of Fish and Wildlife, located at river mile two in the Grande Ronde River, began sampling March 5, as did the Lewiston and Salmon River traps. The Salmon River Trap, operated by Idaho Department of Fish and Game, is located at river mile 103 on the Salmon River near White Bird. While the Lewiston Trap, also operated by IDFG, is located on the Snake River, at the head of Lower Granite Reservoir, at river mile 225.

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. So far, no releases have been made into this zone for this year. An estimated 4.5 million spring Chinook yearlings are scheduled to be released into this zone in the next two weeks. Also scheduled for release into this zone in the next two weeks are: 1) 1.1 million summer Chinook yearlings, 2) 550,000 Coho, and 3) 525,000 summer steelhead. These are all approximations, as final numbers are not available until after the releases are made.

Mid-Columbia Zone: The Mid-Columbia Zone encompasses the area of the Columbia River and its tributaries from McNary Dam to Chief Joseph Dam. There have been no hatchery releases into the Mid-Columbia Zone thus far. However, 863,318 yearling spring Chinook are scheduled for release into this zone in mid-March from Cle Elem Hatchery acclimation facilities. No other releases are scheduled for the next two weeks for this zone.

Lower Columbia Zone: The Lower Columbia Zone is defined as the Columbia River and its tributaries from Bonneville Dam to McNary Dam. An emergency release of approximately 165,000 spring Chinook yearlings was made on January 15, 2007 into the Umatilla River from the Imeques Acclimation Facility, a satellite of the Umatilla Hatchery. This release was originally planned as a volitional release and was scheduled for mid-March 2007. Approximately 606,000 yearling spring Chinook were released into the Klickitat River on March 5-6, 2007. The first of four scheduled releases of Tule sub-yearling fall Chinook from the Spring Creek National Fish Hatchery took place on March 5, with approximately 6.6 million fish being released. These fish were first seen at Bonneville Dam at approximately 1:15pm on Tuesday, March 6. The second release of Tule sub-yearling fall Chinook from Spring Creek NFH is scheduled for today, March 9, with 1.16 million fish estimated for release.

Approximately 240,000 yearling fall Chinook are scheduled for release into the Umatilla River in mid-March. In the next two weeks, an estimated

450,000 yearling spring Chinook will be released into the Umatilla River, along with an additional 32,000 being released into Hood River. Also scheduled for release into this zone in the next two weeks are: 1) 750,000 Coho into the Umatilla River, and 2) 30,000 summer steelhead into Hood River.

Adult Fish Passage: Traditional counts at Bonneville Dam do not begin until March 15th. Traditional counts allow the comparison of current year counts with historical data. The Dalles and John Day began video counts Feb 20th, while McNary, Ice Harbor, and Lower Granite began video counts on March 1st. Traditional counts for these dams begin April 1st with the exception of Lower Granite Dam which begins traditional counts on March 1st. Lower Granite Dam uses video counts from March 1st through March 31st. Video counts can cause a delay in posting the data to the web, because the COE staff at the projects have to review the tapes. The PUD dams in the Mid-Columbia River traditionally count adult fish beginning April 15 with Wells Dam starting on May 1st. Beginning in 2000, a few COE dams began counting fish during the winter months from January 1st through March 14th. The following paragraph describes these winter counts for 2007 and compares them with 2006 counts.

Many steelhead and a few Spring Chinook have been counted at Bonneville Dam this year. In the winter months steelhead begin to move through the hydro system to reach their tributaries and spawning sites. The majority of steelhead overwintered in pools and will complete their spawning trip in March through early May (FPC, 2006). At Bonneville Dam, the total steelhead count from Jan 1st through March 4th was 1,049. For the same date range, this was less than half of the 2006 steelhead count at Bonneville of 2,168 (includes hatchery and wild fish). However, the 2007 wild steelhead count of 323 was 40% percent difference from 2006 count of 193. Steelhead have also been counted at The Dalles and John Day since February 20th. At both dams the count increased in 2007 when compared with the 2006 count. At John Day Dam, the 2007 steelhead count was 912

(as of 03/06), an 83% percent difference between 2006 with a count of 151. The counts at Lower Granite Dam have not been reported yet.

In 2007, the first Spring Chinook was counted at Bonneville Dam on Jan 18th. However, no other spring Chinook adults were counted at Bonneville Dam until Feb 28th. As of March 4th, 4 Spring Chinook adults have been counted at Bonneville Dam. In 2006, as March 4th, only 1 Spring Chinook had crossed Bonneville dam.

Based on estimates made by the Technical Advisory Committee (TAC) for US v. Oregon this winter, the upriver Spring Chinook run for 2007 is expected to be 78,500. In 2006, the TAC forecasted 88,400 upriver Spring Chinook would return. On January 10, 2007 the TAC reported that 132,100 upriver Spring Chinook had actually returned (TAC, 2007). In the same report the TAC reported that 16,600 wild Winter Steelhead returned in 2006 and they predicted that the wild Winter Steelhead run size for 2007 would be 16,200 (TAC, 2007).

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
02/23/07	57.8	0.0	66.1	0.0	67.9	1.6	63.5	3.0	64.9	0.0	68.8	0.0	73.1	0.0
02/24/07	56.7	0.0	51.4	0.0	58.8	1.0	68.7	1.5	73.8	0.0	79.0	0.0	73.8	0.0
02/25/07	51.5	0.0	56.4	0.0	56.7	0.0	57.5	0.0	59.4	0.0	75.2	0.0	73.4	0.0
02/26/07	83.3	0.0	82.9	0.0	83.0	0.0	86.7	0.0	88.1	0.0	80.6	0.0	75.1	0.0
02/27/07	70.6	0.0	77.3	0.0	94.8	0.0	100.0	0.0	101.0	0.0	77.5	0.0	73.7	0.0
02/28/07	93.0	0.0	81.6	0.0	79.6	0.0	81.0	0.0	84.0	0.0	97.7	0.0	97.6	0.0
03/01/07	120.2	0.0	121.8	0.0	109.4	0.0	103.8	0.0	103.3	0.0	116.7	0.0	118.0	0.0
03/02/07	121.3	0.0	128.2	0.0	127.7	0.0	127.6	0.0	129.4	0.0	124.9	0.0	121.3	0.0
03/03/07	79.7	0.0	76.3	0.0	83.1	0.0	87.0	0.0	90.9	0.0	104.5	0.0	109.7	0.0
03/04/07	71.3	0.0	75.0	0.0	80.4	0.0	81.5	0.0	83.4	0.0	80.7	0.0	77.7	0.0
03/05/07	96.1	0.0	99.1	0.0	94.5	0.0	95.1	0.0	95.8	0.0	97.9	0.0	96.2	0.0
03/06/07	90.1	0.0	86.5	0.0	92.0	0.0	93.6	0.0	98.7	0.5	108.9	0.0	105.3	0.0
03/07/07	104.9	0.0	111.2	0.0	103.0	2.3	97.9	0.4	95.8	0.6	89.6	1.5	88.3	0.0
03/08/07	104.7	0.0	102.7	0.0	105.1	0.2	107.8	0.0	110.5	0.0	119.6	1.2	115.1	0.0

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
02/23/07	1.5	0.0	13.6	18.2	37.9	0.0	37.0	0.0	40.7	0.0	39.0	0.0
02/24/07	1.5	0.0	14.2	16.6	33.6	0.0	34.8	0.0	39.5	0.0	39.1	0.0
02/25/07	1.5	0.0	13.9	14.4	29.9	0.0	29.9	0.0	32.4	0.0	31.4	0.0
02/26/07	1.5	0.0	14.6	14.2	32.5	0.0	32.9	0.0	37.2	0.0	36.0	0.0
02/27/07	1.5	0.0	13.5	14.2	33.7	0.0	36.5	0.0	40.7	0.0	40.9	0.0
02/28/07	1.5	0.0	13.5	13.5	24.6	0.0	25.7	0.0	28.4	0.0	28.5	0.0
03/01/07	1.5	0.0	13.1	16.2	29.6	0.0	26.5	0.0	29.9	0.0	29.2	0.0
03/02/07	1.5	0.0	13.6	15.3	26.2	0.0	29.9	0.5	32.0	0.0	31.5	0.0
03/03/07	1.5	0.0	12.8	14.4	29.2	0.0	29.8	1.8	33.9	0.0	32.9	0.0
03/04/07	1.5	0.0	12.9	10.9	24.0	0.0	20.2	2.0	26.4	0.0	24.7	0.0
03/05/07	1.5	0.0	13.0	14.6	27.5	0.0	22.1	2.1	20.1	0.6	25.3	0.0
03/06/07	1.5	0.0	13.6	13.8	22.4	0.0	23.7	2.0	28.6	0.0	23.1	0.0
03/07/07	1.5	0.0	14.5	14.1	25.6	0.0	27.8	2.0	28.3	0.0	29.4	0.0
03/08/07	1.5	0.0	14.6	14.9	28.6	0.0	27.2	1.5	28.2	0.0	27.7	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		
02/23/07	110.7	0.0	112.9	0.0	113.5	0.0	133.8	0.6	42.6	85.3
02/24/07	119.9	0.0	125.2	0.0	130.2	0.0	141.2	0.6	44.0	90.8
02/25/07	107.0	0.0	118.1	0.0	120.8	0.0	136.2	0.7	43.1	87.1
02/26/07	112.5	0.0	116.8	0.0	121.0	0.0	135.8	0.6	44.6	85.2
02/27/07	127.8	0.0	134.9	0.0	138.4	0.0	150.4	0.6	53.1	91.4
02/28/07	117.1	0.0	116.7	0.0	118.3	0.0	133.1	0.6	46.8	80.3
03/01/07	142.3	0.0	155.6	0.0	157.7	0.0	185.5	0.6	72.7	104.6
03/02/07	156.7	0.0	160.1	0.0	161.5	0.0	172.8	0.7	63.6	98.3
03/03/07	146.9	0.0	154.9	0.0	155.1	0.0	162.4	0.7	63.4	88.0
03/04/07	113.1	0.0	124.0	0.0	127.4	0.0	143.4	0.7	48.3	84.1
03/05/07	127.0	0.0	129.0	0.0	125.0	0.0	138.4	0.7	43.2	84.3
03/06/07	125.9	0.0	130.1	0.0	135.0	0.0	144.5	0.7	49.7	83.8
03/07/07	124.1	0.0	132.0	0.0	132.6	0.0	147.3	0.7	51.9	84.4
03/08/07	132.1	0.4	146.5	0.0	149.2	0.0	164.3	0.7	58.3	95.0

HATCHERY RELEASE LAST TWO WEEKS

Hatchery Release Summary

From: **2/23/2007** to **03/08/07**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2007	6,593,606	03-05-07	03-05-07	White Salmon River	White Salmon River
U.S. Fish and Wildlife Service Total					6,593,606				
Yakama Tribe	Klickitat Hatchery	CH1	SP	2007	606,000	03-05-07	03-06-07	Klickitat Hatchery	Klickitat River
Yakama Tribe Total					606,000				
Grand Total					7,199,606				

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

HATCHERY RELEASE NEXT TWO WEEKS

Hatchery Release Summary

From: **3/9/2007** to **3/22/2007**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
Idaho Dept. of Fish and Game	McCall Hatchery	CH1	SU	2007	1,086,600	03-19-07	03-19-07	S Fk Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Niagara Springs	ST	SU	2007	525,000	03-19-07	03-29-07	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2007	200,000	03-20-07	04-01-07	Pine Bar/Salmon River	Salmon River (ID)
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2007	300,000	03-20-07	04-01-07	Hells Canyon Dam	Snake River
Idaho Dept. of Fish and Game	Rapid River Hatchery	CH1	SP	2007	2,485,000	03-20-07	04-01-07	Rapid River	Little Salmon River
Idaho Dept. of Fish and Game					4,596,600				
Nez Perce Tribe	Eagle Creek NFH	CO	UN	2007	275,000	03-12-07	03-12-07	Lapwai Creek	Clearwater River M F
Nez Perce Tribe	Eagle Creek NFH	CO	UN	2007	275,000	03-14-07	03-14-07	Clear Creek	Clearwater River M F
Nez Perce Tribe	Lookingglass Hatchery	CH1	SP	2007	108,000	03-10-07	03-26-07	Lostine Accim Pond	Wallowa River South Fork Salmon River
Nez Perce Tribe	McCall Hatchery	CH1	SP	2007	120,000	03-12-07	03-12-07	Johnson Cr Idaho	River
Nez Perce Tribe Total					778,000				
Oregon Dept. of Fish and Wildlife	Lookingglass Hatchery	CH1	SP	2007	360,000	03-21-07	03-21-07	Imnaha Acclim Pond	Imnaha River
Oregon Dept. of Fish and Wildlife	Oak Springs Hatchery	ST	SU	2007	30,000	03-16-07	03-16-07	Hood River	Hood River
Oregon Dept. of Fish and Wildlife Total					390,000				
U.S. Fish and Wildlife Service	Dworshak NFH	CH1	SP	2007	950,000	03-21-07	04-09-07	Dworshak Hatchery	Clearwater River M F
U.S. Fish and Wildlife Service	Spring Creek NFH	CH0	FA	2007	1,160,000	03-09-07	03-09-07	White Salmon River	White Salmon River
U.S. Fish and Wildlife Service Total					2,110,000				
Umatilla Tribe	Bonneville Hatchery	CH1	FA	2007	240,000	03-15-07	03-15-07	Thornhollow Acclim Pond	Umatilla River
Umatilla Tribe	Cascade Hatchery	CO	UN	2007	250,000	03-15-07	03-15-07	Umatilla River	Umatilla River
Umatilla Tribe	Oxbow-Oregon	CO	UN	2007	500,000	03-15-07	03-15-07	Umatilla River	Umatilla River
Umatilla Tribe	Umatilla Hatchery	CH1	SP	2007	450,000	03-16-07	03-16-07	Imeques Acclim Pond	Umatilla River
Umatilla Tribe Total					1,440,000				
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2007	16,000	03-20-07	05-04-07	Parkdale Acclim Pond	Hood River
Warm Springs Tribe	Round Butte Hatchery	CH1	SP	2007	16,000	03-20-07	05-04-07	Parkdale Acclim Pond	Hood River
Warm Springs Tribe Total					32,000				
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2007	282,001	03-15-07	05-15-07	Easton Pond	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2007	288,384	03-15-07	05-15-07	Clark Flat Acclim Pond Jack Creek Acclim	Yakima River
Yakama Tribe	Cle Elem Hatchery	CH1	SP	2007	292,933	03-15-07	05-15-07	Pond	Yakima River
Yakama Tribe Total					863,318				
Grand Total					10,209,918				

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

Total Dissolved Gas Saturation Data at Upper Columbia River Sites

Date	<u>Hungry H. Dnst</u>			<u>Boundary</u>			<u>Grand Coulee</u>			<u>Grand C. Tlwr</u>			<u>Chief Joseph</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
2/23	---	---	---	0	102	103	104	24	102	103	103	24	101	101	101	24	---	---	---	0
2/24	---	---	---	0	102	102	103	24	102	103	103	24	101	102	103	24	---	---	---	0
2/25	---	---	---	0	102	102	103	24	103	103	104	24	103	103	104	24	---	---	---	0
2/26	---	---	---	0	101	102	102	24	103	103	103	24	103	103	104	24	---	---	---	0
2/27	---	---	---	0	101	102	102	24	103	103	103	24	103	103	105	24	---	---	---	0
2/28	---	---	---	0	101	101	101	24	103	103	104	24	103	103	104	24	---	---	---	0
3/1	---	---	---	0	100	100	101	24	102	102	103	24	102	102	104	24	---	---	---	0
3/2	---	---	---	0	99	99	100	24	101	101	101	24	101	101	102	24	---	---	---	0
3/3	---	---	---	0	99	99	100	24	100	101	101	24	101	101	102	24	---	---	---	0
3/4	---	---	---	0	100	100	101	24	101	101	101	24	101	102	102	24	---	---	---	0
3/5	---	---	---	0	100	101	101	24	102	102	102	24	102	102	105	24	---	---	---	0
3/6	---	---	---	0	101	102	103	24	102	102	102	24	102	102	103	24	---	---	---	0
3/7	---	---	---	0	102	103	104	23	103	103	103	24	103	103	105	23	---	---	---	0
3/8	---	---	---	0	102	103	103	24	102	103	103	24	102	103	104	24	---	---	---	0

Total Dissolved Gas Saturation Data at Mid Columbia River Sites

Date	<u>Chief J. Dnst</u>			<u>Wells</u>			<u>Wells Dwnstrm</u>			<u>Rocky Reach</u>			<u>Rocky R. Tlwr</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
2/23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
2/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
2/25	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
2/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
2/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
2/28	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/1	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/2	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/3	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/4	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/5	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/6	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/7	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/8	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia River Sites

Date	<u>Rock Island</u>			<u>Rock I. Tlwr</u>			<u>Wanapum</u>			<u>Wanapum Tlwr</u>			<u>Priest Rapids</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>					
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>				
2/23	---	---	---	0	---	---	---	0	100	100	100	24	101	101	102	24	101	101	101	24
2/24	---	---	---	0	---	---	---	0	100	100	101	24	101	101	102	24	101	101	102	24
2/25	---	---	---	0	---	---	---	0	101	101	101	24	102	102	102	24	102	102	102	24
2/26	---	---	---	0	---	---	---	0	100	101	101	24	102	102	102	24	102	102	102	24
2/27	---	---	---	0	---	---	---	0	101	101	101	24	102	102	102	24	102	102	103	24
2/28	---	---	---	0	---	---	---	0	101	101	101	24	102	102	103	24	101	102	102	24
3/1	---	---	---	0	---	---	---	0	100	100	101	24	101	101	101	24	101	101	101	24
3/2	---	---	---	0	---	---	---	0	98	99	99	24	100	100	100	24	99	100	100	24
3/3	---	---	---	0	---	---	---	0	98	98	98	24	99	99	100	24	99	99	99	24
3/4	---	---	---	0	---	---	---	0	98	98	99	24	100	100	100	24	100	101	101	24
3/5	---	---	---	0	---	---	---	0	99	99	100	24	101	101	101	24	100	101	101	24
3/6	---	---	---	0	---	---	---	0	100	100	101	24	101	102	102	24	101	101	102	24
3/7	---	---	---	0	---	---	---	0	102	102	102	24	103	104	106	24	102	103	103	24
3/8	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0

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

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

Date	Priest R. Dnst			Pasco			Dworshak			Clrwtr-Peck			Anatone			#				
	24 h	12 h	High	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h		#			
	Avg	Avg			Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg			Avg		
2/23	101	101	101	24	---	---	---	0	101	102	102	24	---	---	---	0	---	---	---	0
2/24	101	101	101	24	---	---	---	0	101	102	103	24	---	---	---	0	---	---	---	0
2/25	102	102	102	24	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0
2/26	101	102	102	24	---	---	---	0	102	103	103	24	---	---	---	0	---	---	---	0
2/27	102	102	102	24	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0
2/28	101	102	102	24	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0
3/1	100	101	101	24	---	---	---	0	101	102	103	24	---	---	---	0	---	---	---	0
3/2	99	100	100	24	---	---	---	0	101	101	102	24	---	---	---	0	---	---	---	0
3/3	99	99	100	24	---	---	---	0	101	101	102	24	---	---	---	0	---	---	---	0
3/4	100	101	101	24	---	---	---	0	101	102	103	24	---	---	---	0	---	---	---	0
3/5	101	101	101	24	---	---	---	0	102	102	103	24	---	---	---	0	---	---	---	0
3/6	101	102	102	24	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0
3/7	103	103	104	24	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0
3/8	---	---	---	0	---	---	---	0	102	103	104	24	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation Data at Snake River Sites

Date	Clrwtr-Lewiston			Lower Granite			L. Granite Tlwr			Little Goose			L. Goose Tlwr			#				
	24 h	12 h	High	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h		#			
	Avg	Avg			Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg			Avg		
2/23	---	---	---	0	---	---	---	0	101	102	102	24	---	---	---	0	101	101	102	24
2/24	---	---	---	0	---	---	---	0	100	101	101	24	---	---	---	0	100	101	101	24
2/25	---	---	---	0	---	---	---	0	101	101	101	24	---	---	---	0	101	102	102	24
2/26	---	---	---	0	---	---	---	0	101	101	101	24	---	---	---	0	101	102	102	24
2/27	---	---	---	0	---	---	---	0	101	101	101	24	---	---	---	0	102	102	102	24
2/28	---	---	---	0	---	---	---	0	101	101	102	24	---	---	---	0	101	101	102	24
3/1	---	---	---	0	---	---	---	0	100	101	102	24	---	---	---	0	100	101	101	24
3/2	---	---	---	0	---	---	---	0	99	100	100	24	---	---	---	0	100	101	106	24
3/3	---	---	---	0	---	---	---	0	99	99	99	24	---	---	---	0	102	106	115	24
3/4	---	---	---	0	---	---	---	0	99	100	100	24	---	---	---	0	104	110	117	24
3/5	---	---	---	0	---	---	---	0	100	100	100	24	---	---	---	0	105	111	116	24
3/6	---	---	---	0	---	---	---	0	101	102	103	24	---	---	---	0	106	113	124	24
3/7	---	---	---	0	---	---	---	0	102	102	103	24	---	---	---	0	104	107	110	24
3/8	---	---	---	0	---	---	---	0	101	102	104	24	---	---	---	0	104	108	115	24

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

Date	Lower Mon.			L. Mon. Tlwr			Ice Harbor			Ice Harbor Tlwr			McNary-Oregon			#				
	24 h	12 h	High	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h	#	24 h	12 h		#			
	Avg	Avg			Avg	Avg		Avg	Avg		Avg	Avg		Avg	Avg			Avg		
2/23	---	---	---	0	101	102	103	24	---	---	---	0	100	100	100	24	---	---	---	0
2/24	---	---	---	0	101	102	102	24	---	---	---	0	101	102	102	24	---	---	---	0
2/25	---	---	---	0	102	102	103	24	---	---	---	0	102	103	103	24	---	---	---	0
2/26	---	---	---	0	102	102	102	24	---	---	---	0	102	102	103	24	---	---	---	0
2/27	---	---	---	0	102	102	103	24	---	---	---	0	102	102	103	24	---	---	---	0
2/28	---	---	---	0	101	101	102	24	---	---	---	0	102	102	102	24	---	---	---	0
3/1	---	---	---	0	100	100	101	24	---	---	---	0	101	101	102	24	---	---	---	0
3/2	---	---	---	0	99	99	99	24	---	---	---	0	100	100	100	24	---	---	---	0
3/3	---	---	---	0	98	99	99	24	---	---	---	0	99	99	100	24	---	---	---	0
3/4	---	---	---	0	99	99	101	24	---	---	---	0	100	100	102	24	---	---	---	0
3/5	---	---	---	0	103	107	127	24	---	---	---	0	100	101	101	24	---	---	---	0
3/6	---	---	---	0	101	101	107	24	---	---	---	0	101	101	102	24	---	---	---	0
3/7	---	---	---	0	101	101	104	24	---	---	---	0	102	102	103	24	---	---	---	0
3/8	---	---	---	0	101	102	102	24	---	---	---	0	101	102	102	24	---	---	---	0

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

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>McNary-Wash</u>			<u>McNary Tlwr</u>			<u>John Day</u>			<u>John Day Tlwr</u>			<u>The Dalles</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	AVG	High	hr				
2/23	---	---	---	0	101	101	101	24	---	---	---	0	102	102	102	24	---	---	---	0
2/24	---	---	---	0	101	101	102	24	---	---	---	0	102	103	103	24	---	---	---	0
2/25	---	---	---	0	102	102	102	24	---	---	---	0	103	103	103	24	---	---	---	0
2/26	---	---	---	0	101	102	102	24	---	---	---	0	103	103	103	24	---	---	---	0
2/27	---	---	---	0	102	102	102	24	---	---	---	0	103	103	104	24	---	---	---	0
2/28	---	---	---	0	101	101	102	24	---	---	---	0	102	103	103	24	---	---	---	0
3/1	---	---	---	0	100	100	101	24	---	---	---	0	101	102	102	24	---	---	---	0
3/2	---	---	---	0	99	100	100	24	---	---	---	0	100	100	101	24	---	---	---	0
3/3	---	---	---	0	99	99	99	24	---	---	---	0	100	100	100	24	---	---	---	0
3/4	---	---	---	0	100	100	100	24	---	---	---	0	100	100	100	24	---	---	---	0
3/5	---	---	---	0	101	101	102	24	---	---	---	0	101	101	101	24	---	---	---	0
3/6	---	---	---	0	102	102	103	24	---	---	---	0	101	101	102	24	---	---	---	0
3/7	---	---	---	0	103	103	103	24	---	---	---	0	102	102	102	24	---	---	---	0
3/8	---	---	---	0	103	103	104	24	---	---	---	0	101	102	102	24	---	---	---	0

Total Dissolved Gas Saturation Data at Lower Columbia River Sites

Date	<u>The Dalles Dnst</u>			<u>Bonneville</u>			<u>Warrendale</u>			<u>Camas\Washougal</u>			<u>Cascade Island</u>							
	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24 h</u>	<u>12 h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>	<u>24h</u>	<u>12h</u>	<u>#</u>					
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr				
2/23	101	101	102	24	102	103	103	24	103	103	104	24	103	103	104	24	106	107	108	24
2/24	102	102	103	24	102	103	103	24	103	103	104	24	103	103	103	24	105	105	105	17
2/25	102	103	103	24	103	103	103	24	104	104	104	24	103	103	104	24	106	106	107	17
2/26	102	102	103	24	103	103	103	24	103	104	104	24	103	104	105	24	106	106	107	17
2/27	102	103	103	24	103	103	104	24	104	104	104	24	103	103	104	24	105	105	105	17
2/28	101	102	102	24	102	102	102	24	103	103	103	24	102	103	103	24	108	109	109	17
3/1	101	101	101	24	101	101	101	24	101	102	102	24	101	102	102	24	107	107	108	17
3/2	100	100	100	24	100	100	101	24	102	102	103	24	101	101	101	24	107	107	107	24
3/3	100	100	100	24	100	101	101	24	102	103	103	24	102	103	104	24	108	109	109	24
3/4	100	100	101	24	101	102	102	24	104	105	105	24	103	103	104	24	110	110	111	14
3/5	100	100	101	24	102	102	102	24	105	105	106	24	104	105	105	24	111	111	113	17
3/6	100	101	101	24	102	103	103	24	105	105	105	24	104	105	106	24	110	110	111	17
3/7	101	101	102	24	102	103	103	24	105	106	106	24	105	105	106	24	109	110	110	17
3/8	101	101	101	24	102	102	102	24	104	104	105	24	104	105	105	24	109	109	109	11

Two-Week Summary of Passage Indices

COMBINED SOCKEYE											
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
02/23/2007	---	---	---	---	---	---	---	---	---	---	---
02/24/2007	---	---	---	---	---	---	---	---	---	---	---
02/25/2007	---	---	---	---	---	---	---	---	---	---	---
02/26/2007	---	---	---	---	---	---	---	---	---	---	---
02/27/2007	---	---	---	---	---	---	---	---	---	---	---
02/28/2007	---	---	---	---	---	---	---	---	---	---	---
03/01/2007	---	---	---	---	---	---	---	---	---	---	---
03/02/2007	---	---	---	---	---	---	---	---	---	---	0
03/03/2007	---	---	---	---	---	---	---	---	---	---	0
03/04/2007	---	---	---	---	---	---	---	---	---	---	0
03/05/2007	0	---	0	0	---	---	---	---	---	---	0
03/06/2007	0	---	0	0	---	---	---	---	---	---	0
03/07/2007	0	---	0	0	---	---	---	---	---	---	0
03/08/2007	0	---	0	0	---	---	---	---	---	---	0
03/09/2007	---	---	---	---	---	---	---	---	---	---	0
<hr/>											
Total:	0	0	0	0	0	0	0	0	0	0	0
# Days:	4	0	4	4	0	0	0	0	0	0	8
Average:	0	0	0	0	0	0	0	0	0	0	0
YTD	0	0	0	0	0	0	0	0	0	0	0

* 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, and sockeye. Two classes of fish counts are shown in these tables: collection counts, which account for sample rates but are not adjusted for flow; and passage indices, 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.

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/Washington Dept. of Fish and Wildlife.
 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.

