

*Fish Passage Center*

# Weekly Report #02 - 1

March 15, 2002

2501 SW First Ave., Suite 230  
 Portland, OR 97201-4752  
 phone: 503/230-4582  
 fax: 503/230-7559

**PLEASE NOTE:**

The Fish Passage Center Weekly Report is available on Friday of each week by 4:00 p.m. on our internet homepage at [www.fpc.org](http://www.fpc.org). If you can get the information from the website, you will get your information sooner and help us utilize our resources more efficiently by saving postage and paper costs. We can also send you the report via email. Reduced use of paper also helps the environment. Please let us know if you want to be taken off the weekly report mailing list or if you would rather receive the report by email rather than traditional mail. You can email us at [fpcstaff@fpc.org](mailto:fpcstaff@fpc.org). Thanks!

**SUMMARY OF EVENTS:**

**Water Supply:** In contrast to 2001, Water Year 2002 appears to be average or better in terms of precipitation and runoff volumes within the Columbia and Snake River Basins. Precipitation was generally average to slightly above average, with respect to the years 1971 through 2000, throughout much of the Columbia region. Table 1 summarizes both early March precipitation and cumulative October through March precipitation at select locations.

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

Location	March 1-12, 2002		Cumulative October, 1 2001 to March, 12, 2002	
	Observed (inches)	% Average	Observed (inches)	% Average
Columbia Above Coulee	1.02	147	12.74	97
Snake River Above Ice Harbor	0.68	107	8.52	92
Columbia Above The Dalles	0.93	125	12.77	97
Kootenai	0.88	128	11.46	85
Clark Fork	0.78	169	9.16	111
Flathead	1.10	174	11.99	107
Pend Oreille/Spokane	1.60	149	21.51	116
Central Washington	0.13	40	4.76	88
Snake River Plain	0.38	88	4.05	75
Clearwater	1.61	149	19.03	113
SW Washington Cascades/Cowlitz	3.93	143	56.75	116
Willamette Valley	3.80	153	47.24	114

Throughout the beginning of water year 2002, the highest cumulative precipitation was observed at the SW Washington Cascades/Cowlitz and Pend Oreille/Spokane locations, both 116% of average. Additionally, the Clearwater and Willamette Valley locations recorded precipitation that was 113% and 114% of average, respectively. From Table 1, six of twelve locations had precipitation over the start of WY 2002 that were greater than average; only three locations contained precipitation that was less than 90% of average.

The first twelve days of March appear to be promising concerning precipitation and resulting water yields. The Flathead location recorded precipitation over the beginning of March that was 174% of average. From Table 1, seven of twelve locations produced precipitation over the beginning of March that were greater than 140% of average; only two locations contained precipitation that was less than average.

Average to slightly above average precipitation throughout the Columbia and Snake River Basins has led to vastly increased runoff volume forecasts relative to WY 2001. Table 2 displays the January, February, and March final runoff volume forecasts for multiple reservoirs. Generally, runoff forecasts have remained relatively consistent between the three months of forecast, between 70% and 100% of average. Currently, the January to July runoff volume forecast at The Dalles and Grand Coulee are 91% and 95% of average, respectively. The April to July runoff forecast at Dworshak was the highest forecast issued in March by the NWRFC, at 113% of average. For comparison, the 2001 March final runoff forecast at the Dalles, Grand Coulee, and Dworshak were 55%, 59%, and 57% of average. Clearly, the water supply outlook for the WY 2002 is much improved relative to WY 2001, and, more importantly, appears to be very close to average at most locations.

**Table 2.** January, February, and March 2002 Final Runoff Volume Forecasts for various reservoirs within the Columbia and Snake River Basins.

Site	January Final		February Final		March Final	
	Runoff Volume (KAF)	Percent of Average	Runoff Volume (KAF)	Percent of Average	Runoff Volume (KAF)	Percent of Average
Mica (April-Sept)	11800	93	11500	92	11300	90
Hungry Horse (April-Sept)	1790	82	1910	90	1910	90
Libby (April-Sept)	6440	95	6470	97	6290	95
Grand Coulee (Jan-July)	59300	94	60800	97	60000	95
The Dalles (Jan-July)	98700	93	101000	94	97300	91
Brownlee (April-July)	4530	78	4570	72	4090	65
Dworshak (April-July)	2700	100	3000	113	2950	112
Lower Granite (Jan-July)	27500	92	28200	94	25700	86
Heise (ID) (April-July)	2990	87	2960	83	2710	76
Weiser (ID) (April-July)	4180	76	4090	71	3630	63

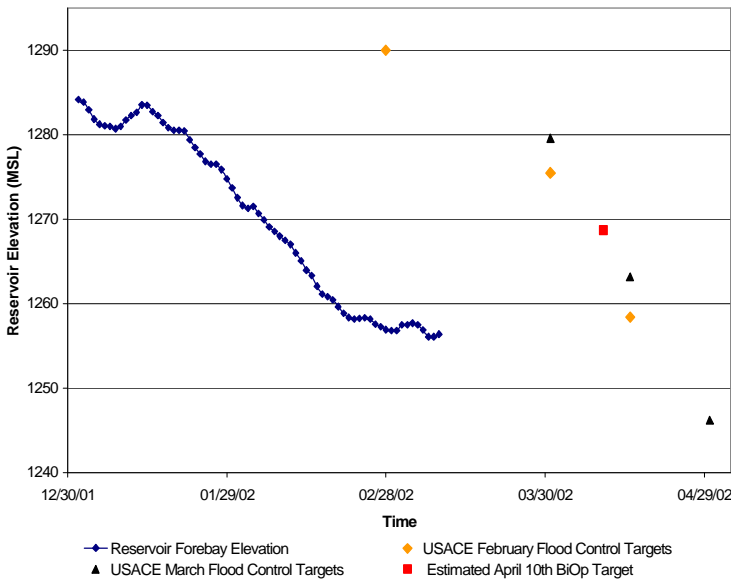
It should be pointed out that the "average" period for the January final forecast runoff volumes was 1961-1990. In contrast, the "average" period for the February and March final forecast runoff volumes was 1971-1990. For perspective, the January-July average runoff volume at The Dalles from 1961-1990 was 105900 KAF, where as, the 1971-2000 average was 107300 KA.F

Operations have varied at the major reservoirs within the Columbia and Snake River Basins. The Hungry Horse, Grand Coulee, and Brownlee reservoirs have been primarily operated for power generation and are currently well below the end of March flood control targets determined by USACE (Table1). These reservoirs will require between 10 and 20 feet of fill water to reach the end of March flood targets and the April 10th, 2002 Biological Opinion Upper Rule CurveTargets. Figure 1 dis-

plays reservoir operations at Grand Coulee; included are reservoir elevations over 2002, February and March flood control targets, and the April 10th Biological Opinion Target elevation estimated using the end of March and Mid-April flood control targets issued by USACE in March.

**Table 3.** USACE determined flood control targets issued in March of 2002 along with actual reservoir elevations for Libby, Hungry Horse, Grand Coulee, Brownlee, and Dworshak.

<i>Reservoir</i>	<i>Actual Elevation March 13, 2002 (ft. Above MSL)</i>	<i>USACE Determined March 31<sup>st</sup>, 2002 Flood Control Target (ft. Above MSL)</i>	<i>USACE Determined April 15<sup>th</sup>, 2002 Flood Control Target (ft. Above MSL)</i>
Libby	2372.3	2375.0	na
Hungry Horse	3511.8	3531.6	3528.5
Grand Coulee	1255.6	1279.6	1263.2
Brownlee	2041.2	2052.8	2056.3
Dworshak	1512.4	1505.7	1489.7



**Figure 1.** Grand Coulee reservoir operations over 2002; current reservoir forebay elevations, February and March flood control targets issued by USACE, and the April 10th BiOp Target estimated using the flood control targets for Grand Coulee issued in March

The Libby reservoir is currently within only a few feet of its end of March flood control target as determined by USACE (Table 1). Also, the Dworshak reservoir is currently above its end of March flood control target.

It is important to note that a flood control shift between the Dworshak and Grand Coulee reservoirs is planned by USACE during WY 2002. Essentially, USACE may potentially shift an amount of water at Dworshak equivalent to the difference in local and system flood control. Table 4 displays the local and system flood control targets at Dworshak for March 31st and April 15th along with the useable storage volumes at each elevation.

**Table 4.** Local and system flood control targets at Dworshak for March 31st and April 15th along with the useable storage volumes at each elevation.

	Local Flood Control Elevation (MSL)	System Flood Control Elevation (MSL)	Local Flood Control Useable Storage (KAF)	System Flood Control Useable Storage (KAF)	Difference Between Local And System Flood Control Useable Storage (KAF)
March 31st, 2002	1522.6	1505.7	820.1	608.0	212.1
April 15 <sup>th</sup> , 2002	1530.7	1489.7	928.2	428.8	499.4

The Dworshak reservoir must be at or below 1522.6 feet above MSL on March 31st, 2002 to meet local flood control requirements. Because the system flood control elevation is below the local flood control requirement, it is allowable to draft Dworshak down to the system requirement of 1505.7 feet above MSL. From Table 4, the possible amount of shifted water, or the difference between the useable storage volumes at each respective March 31st, 2002 elevation, is 212.1 KAF. Recent conversations with USACE personnel have indicated that only a partial shift will likely occur due to the magnitude of potentially shifted water, projected streamflows, and TDG requirements.

**Spill:** A total of 7.8 million tule fall chinook were released from Spring Creek Hatchery on March 11, 2002. A System Operational Request was submitted by the state, federal and tribal fishery managers to provide spill levels starting at 80 Kcfs increasing to 100 Kcfs, at a flow equal to 170 Kcfs. The operation was requested for a five to ten day period following the release, with a check in after five days (similar to past years). The increase in flow is requested to provide sufficient depth for total dissolved gas compensation over listed chum redds below the Bonneville project.

After significant discussion at the Technical Management Team and the Implementation Team, the Action Agencies did not agree that the SOR was implementable and implemented an alternative operation for slightly less than a three-day period. They agreed to implement an operation that had associated with it the potential risk of drafting 200 KAF from Grand Coulee Reservoir. However, natural flows increased during the implementation of the alternative operation and Grand Coulee did not draft 200 KAF. Flows were increased and spill commenced beginning at 0900 hours on March 12 and continued until 0600 hours on March 15, 2002. The Action Agencies accounted for the augmentation at Bonneville Dam as the volume above 125 Kcfs; however, the notes from the IT meeting reflect that agreement with this accounting method was not reached.

A request by Oregon Department of Fish and Wildlife and the U.S. Fish and Wildlife Service to extend the operation past the morning of March 15th, based on the fish passage and the fact that most of the water for the flow augmentation over the three day period came from local inflow, was denied.

The Oregon Department of Environmental Quality Commission approved a total dissolved gas waiver request for both the Spring Creek release and the Biological Opinion spill period at their March 8th meeting. The total dissolved gas levels below Bonneville Dam were well below the tailrace waiver limit of 120% during the three-day spill period. In addition, the water depths during the operation were sufficient to allow for gas compensation over the redds.

**Smolt Monitoring:** Sampling began at White Bird, Lewiston, and Imnaha traps on March 11. The Grande Ronde Trap was scheduled to begin sampling on March 12 but flows had been too low to place the trap in the river, so that the start date has been delayed to March 18 at the earliest. On March 11 sampling began at Bonneville Dam, Powerhouse 2. Sampling is scheduled to begin March 18 at John Day Dam.

Spring Creek releases of subyearling chinook salmon began showing up in Bonneville samples in the sample ending at 0700 hours on March 12 with the passage index of 847 fish. The index numbers of subyearlings increased to 18,000 on the 13th, 380,000 on the 14th and declined to 194,000 on the 15th. If the passage in 2002 is similar to the pattern of passage observed in 2000, when the passage index reflected 21% of the total hatchery release, we estimate that about 37% of the Spring Creek release has passed Bonneville Dam by 0700 hours on the 15th. Since spill ended at 0600 hours on the 15th, it is possible that the majority of the Spring Creek release will pass during non-spill operations.

**Adult Fish Passage:** Adult fish passage facilities should be operating at or near full criteria at each mainstem project with annual maintenance completed on equipment such as fish pumps, fish turbines, and other associated passage equipment during the winter season. Changes to the fish ladders will include new or additional adult PIT tag detection equipment (134 kHz) installed at Bonneville, McNary, and Wells dams with Lower Granite having both 134 kHz and 400 kHz PIT tag detectors. Fish counts will be starting April 1 at most COE projects with exception of Bonneville Dam (March 15) and Lower Granite Dam (March 1). The PUD projects on the Mid-Columbia River will begin on or near April 15 at Priest Rapids, Rock Island and Rocky Reach dams with Wells Dam initiating fish counting near May 1. The FPC Weekly Report will list in a Table; the adult fish counts for the week with the previous year (2001) and the 10-year average through the same ending date so the reader can compare passage throughout the year for the individual species.

Numbers of adult spring chinook returning to

the Columbia River (mouth) are projected to near 418,500 with about 333,700 expected to be upriver fish (above Bonneville Dam). Adult spring chinook counts at Bonneville Dam from March 1-10 totaled 88. These were 8-h video counts. So far these counts appear strong for this early in the season.

Upstream at Lower Granite Dam, steelhead passage was also showing good numbers with counts ranging from 23-300 fish per day and averaging 68 per day for the month. Note: steelhead normally migrate upstream in the late summer and fall/winter. A portion of these steelhead might halt their migration and over winter in the pools or tributaries of the Columbia or Snake rivers as water temperatures reduce during the winter (Dec/Jan). These fish then continue their upstream migration to spawning sites or hatcheries as water temperatures start to rise and the fish

**Hatchery Releases:** The 2002 Proposed release schedules from State, Federal and Tribal Hatcheries and Acclimation Ponds for this season's migration of yearling and subyearling fish can be found on the FPC Website. The Release Schedule will be updated throughout the 2002 fish migration season as they are received from the hatchery coordinators or directly from the hatcheries (above Bonneville Dam only). The Weekly Report will list the Releases made from hatcheries during the Previous 2-Weeks as well as for the upcoming 2-Weeks. The following table lists the proposed numbers received to date for the Snake, Mid-Columbia, and Lower Columbia River Zones. Note that the Lower Columbia is that river reach from Bonneville Dam to McNary Dam with the Mid-Columbia Zone upstream from McNary Dam to Chief Joseph Dam area. The Snake River Zone is basically from the mouth of the Snake River and upstream.

**2002 Migration Year – Hatchery Release Numbers through 3/12/02.**

	Spring Chinook	Summer Chinook	Fall Chinook
<b>Snake R</b>	10,108,956	1,671,844	3,847,000
<b>Mid-Columbia</b>	4,097,649	3,777,000	11,983,100
<b>Lower Columbia</b>	5,667,393		25,560,000

Steelhead	Coho	Sockeye	Totals
9,381,330	840,000	215,163	26,064,293
1,274,500	2,138,000	308,042	23,578,291
566,000	5,950,000		37,743,393

For the past two weeks, approximately 13.2 million chinook and coho salmon were released or volitional releases initiated from State, Federal or Tribal facilities in the Columbia River basin. During the next two weeks, many of the chinook hatcheries will begin releasing fish in Idaho and volitional releases of spring chinook into the Yakama River basin. The first release of coho salmon as well as Steelhead will be released in the Clearwater River basin and the Snake River, respectively. The Tribal releases of yearling fall and chinook will continue from the Acclimation Ponds in the Umatilla River.

**Snake River** - Overall, numbers of yearling spring chinook from hatcheries in NE Oregon, Idaho, and SE Washington are increased about 3.6 times greater than the preceding year, and the highest total in the last 10-years. Several million spring chinook were released in fall (2001) but will migrate from the basin this spring. The spring released hatchery fish are normally released between mid-March and mid-April. Snake River hatcheries release fish volitionally (normally acclimation ponds) or as forced or trucked releases. Summer chinook are released mainly into the S. Fk. Salmon River from McCall H with Pahsimeroi H releasing yearling summer chinook into the Pahsimeroi River. This year's release will be increased about 24% above the 2001 release. Fall chinook are mainly reared the Lyons Ferry Hatchery with yearling and subyearling fish released from upstream Acclimation Ponds as well as directly from Lyons Ferry. IDFG began releasing about 200,000 subyearling fall chinook in the Snake River below Hells Canyon Dam in 2001, and will likely be continued in future years. This year's release total of fall chinook is the second highest in the FPC database. Hatchery steelhead production for 2002 falls within numbers released over the past six years; 2002 total = 9.4 million estimated; past 6-years = 9.2-9.9 million. Approximately 215,000 juvenile sockeye will be released into the upper Salmon River lakes, (RedFish, Pettit, and Alturas) for the 2002 migration. Note that the majority of these fish were released last fall (2001), but should migrate from the lakes late spring, 2002. Yearling coho salmon production releases should be at a record high pace with 840,000 projected for the Clearwater River basin tributaries in 2002.

**Mid-Columbia [above McNary Dam]** - Spring chinook production in the Mid-Columbia will be increased above the previous two years. Most hatcheries will be releasing their yearling spring chinook in mid-late April as direct stream plants or volitionally from acclimation ponds or hatchery ponds. Summer chinook production will be comprised of both yearling and subyearling releases. The yearling fish are normally released in April with the subyearling fish released in early June through early July. The projected total is about 3.8 million for the year. As in the previous 6-years, about 12 million fall chinook, all subyearling fish will be released from the Priest Rapids and Ringold hatcheries as well as from selected sites in the Yakama River. These subyearling fish will be released from late May through late June. Steelhead will primarily be released into the Okanogan, Methow, Entiat, Wenatchee, and Walla Walla rivers and from a direct release from Ringold Hatchery. The total will again be similar to previous years with 1.3 million projected for the season. As in 2001, this season's coho releases in the Mid-Columbia Reach will be at the record high total of 2.1 million. The majority of these yearling coho will be released in the Yakama, Wenatchee and Methow River basins. Sockeye are released into Lake Wenatchee and Lake Osoyoos during the previous fall with this season's total at 308,000.

**Lower Columbia [Bonneville Dam to McNary Dam]** - The projected number of 5.7 million spring chinook in this Reach will be nearly equal the previous 3-years. Yearling spring chinook will be released in the Umatilla, Klickitat, White Salmon, Little White Salmon, Wind, Deschutes, and Hood rivers. The majority of spring chinook are released in April; however, spring chinook from the Klickitat and Umatilla rivers have already been released in March. Fall chinook should total near 25.6 million release from hatcheries with that total being closer to normal than the 2001 production. The bulk of the fish are tule fall chinook that are released from Spring Creek NFH in December as fry, and in March (7.8 million), April and May. Yearling fall chinook have been released in the Umatilla River this March with subyearling fish projected for the

Umatilla and Klickitat rivers in late May and June. As for steelhead in this Reach, about 566,000 are currently projected for release. They are generally released in the Umatilla, Klickitat, Deschutes, Hood and White Salmon rivers in April/May time frame. The current listing of coho salmon is for about 6.0 million to be released in 2002. This total at present appears below normal, and release numbers will be revised as they become available.

**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
03/01/02	84.5	0.0	87.1	0.0	88.0	0.0	89.3	0.0	91.5	0.0	88.8	0.0	88.1	0.0
03/02/02	66.8	0.0	71.3	0.0	72.2	0.0	76.3	0.0	81.9	0.0	92.7	0.0	94.1	0.0
03/03/02	46.8	0.0	52.1	0.0	52.2	0.0	53.2	0.0	56.7	0.0	71.3	0.0	75.8	0.0
03/04/02	79.0	0.0	75.2	0.0	73.7	0.0	74.2	0.0	76.6	0.0	68.0	0.0	65.8	0.0
03/05/02	56.7	0.0	58.6	0.0	60.2	0.0	68.1	0.0	70.9	0.0	76.2	0.0	79.3	0.0
03/06/02	86.1	0.0	87.8	0.0	87.2	0.0	84.9	0.0	87.6	0.0	84.7	0.0	84.9	0.0
03/07/02	94.5	0.0	96.3	0.0	94.5	0.0	94.4	0.0	97.4	0.0	90.8	0.0	93.1	0.0
03/08/02	91.0	0.0	93.8	0.0	93.2	0.0	100.5	0.0	105.5	0.0	112.9	0.0	117.0	0.0
03/09/02	64.0	0.0	65.7	0.0	65.4	0.0	64.6	0.0	66.2	0.0	69.5	0.0	77.0	0.0
03/10/02	51.3	0.0	53.7	0.0	55.5	0.0	57.8	0.0	60.4	0.0	73.3	0.0	75.7	0.0
03/11/02	91.4	0.0	91.6	0.0	88.2	0.0	90.2	0.0	92.3	0.0	72.6	0.0	74.7	0.0
03/12/02	84.9	0.0	86.0	0.0	84.3	0.0	85.4	0.0	89.8	0.0	96.0	0.0	99.4	0.0
03/13/02	65.0	0.0	68.4	0.0	70.6	0.0	75.5	0.0	79.2	0.0	90.2	0.0	94.3	0.0
03/14/02	67.0	0.0	68.3	0.0	70.2	0.0	72.5	0.0	74.4	0.0	75.0	0.0	77.0	0.0

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

Date	Dworshak		Hells Brownlee Canyon		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/01/02	2.5	0.0	13.5	13.5	25.4	0.0	25.9	0.0	26.9	0.0	22.8	0.0
03/02/02	2.5	0.0	11.1	11.1	23.8	0.0	21.5	0.0	21.9	0.0	25.0	0.0
03/03/02	2.5	0.0	10.4	10.4	22.4	0.0	23.9	0.0	26.0	0.0	26.3	0.0
03/04/02	5.2	0.0	11.5	15.1	23.3	0.0	24.1	0.0	26.5	0.0	25.7	0.0
03/05/02	6.0	0.0	10.6	10.9	26.9	0.0	27.5	0.0	29.5	0.0	28.4	0.0
03/06/02	5.9	0.0	11.4	9.4	26.0	0.0	27.5	0.0	28.2	0.0	29.3	0.0
03/07/02	5.9	0.0	12.7	10.3	26.4	0.0	27.9	0.0	28.8	0.0	28.9	0.0
03/08/02	2.5	0.0	13.1	13.3	26.6	0.0	28.6	0.0	30.9	0.0	31.7	0.0
03/09/02	2.5	0.0	12.3	9.5	22.9	0.0	22.2	0.0	23.0	0.0	22.0	0.0
03/10/02	2.5	0.0	13.9	11.0	20.1	0.0	20.2	0.0	20.1	0.0	18.7	0.0
03/11/02	5.2	0.0	13.8	17.2	24.2	0.0	25.1	0.0	28.3	0.0	29.3	0.0
03/12/02	6.0	0.0	14.0	16.9	48.5	0.0	48.8	0.0	50.9	0.0	51.5	0.0
03/13/02	6.0	0.0	16.7	15.6	40.7	0.0	40.3	0.0	47.1	0.0	47.5	0.0
03/14/02	5.9	0.0	---	---	39.9	0.0	40.7	0.4	47.2	0.0	45.7	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		
03/01/02	125.0	0.0	134.7	0.0	135.9	0.0	151.6	0.0	70.7	75.8
03/02/02	116.5	0.0	124.6	0.0	129.1	0.0	134.3	0.0	63.9	65.3
03/03/02	96.1	0.0	103.3	0.0	101.4	0.0	123.6	0.0	31.3	87.2
03/04/02	110.3	0.0	121.1	0.0	122.8	0.0	121.3	0.0	42.9	73.1
03/05/02	96.0	0.0	114.7	0.0	114.3	0.0	120.7	0.0	18.2	97.5
03/06/02	113.7	0.0	116.4	0.0	118.3	0.0	119.5	0.0	17.5	97.3
03/07/02	116.6	0.0	126.5	0.0	127.8	0.0	128.1	0.0	25.8	97.5
03/08/02	128.2	0.0	108.6	0.0	110.1	0.0	117.8	0.0	17.7	94.6
03/09/02	109.3	0.0	123.7	0.0	123.6	0.0	121.8	0.0	20.0	95.5
03/10/02	86.0	0.0	83.3	0.0	86.0	0.0	117.2	0.0	9.0	101.9
03/11/02	99.1	0.0	108.8	0.0	110.2	0.0	110.4	0.0	7.5	96.6
03/12/02	132.7	0.0	125.8	0.0	127.5	0.0	141.0	36.5	1.6	96.7
03/13/02	152.6	0.0	167.2	0.0	164.8	0.0	191.7	87.2	4.3	93.9
03/14/02	128.7	0.0	138.5	0.0	137.9	0.0	161.0	76.7	0.0	77.8

## 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>24 h</u>	<u>12 h</u>	<u>#</u>		
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
3/1	97	97	98	24	100	100	100	24	99	99	100	24	98	98	99	24	---	---	---	0
3/2	96	96	97	24	99	99	99	24	99	99	99	24	98	98	99	23	---	---	---	0
3/3	95	96	96	21	99	100	100	24	99	99	100	24	98	99	100	23	---	---	---	0
3/4	96	97	97	24	100	101	101	24	100	101	101	24	99	100	100	23	---	---	---	0
3/5	96	97	97	24	100	100	101	24	101	101	101	24	100	101	103	23	---	---	---	0
3/6	95	96	96	24	100	100	100	24	101	101	102	24	100	100	102	23	---	---	---	0
3/7	95	96	96	22	100	100	100	24	101	101	101	24	100	100	102	23	---	---	---	0
3/8	95	95	96	10	99	99	100	24	100	100	101	24	99	99	100	23	---	---	---	0
3/9	95	95	95	10	99	99	100	24	100	101	101	24	99	100	100	23	---	---	---	0
3/10	95	96	96	24	99	100	100	24	101	101	101	24	100	101	102	23	---	---	---	0
3/11	96	96	97	21	101	101	101	24	101	102	102	24	100	101	102	23	---	---	---	0
3/12	96	97	97	13	100	101	101	24	101	102	102	24	100	100	100	23	---	---	---	0
3/13	97	97	98	6	100	100	101	24	101	101	102	24	100	101	102	23	---	---	---	0
3/14	96	97	97	14	100	100	101	24	101	101	101	24	100	100	101	23	---	---	---	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>24 h</u>	<u>12 h</u>	<u>#</u>		
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
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
3/9	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/10	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/11	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/12	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/13	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/14	---	---	---	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>24 h</u>	<u>12 h</u>	<u>#</u>		
	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
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
3/9	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/10	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/11	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/12	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/13	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/14	---	---	---	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	<u>Priest R. Dnst</u>			#	<u>Pasco</u>			#	<u>Dworshak</u>			#	<u>Clrwtr-Peck</u>			#	<u>Anatone</u>			#			
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
3/1	---	---	---	0	101	102	102	24	96	96	101	7	---	---	---	0	---	---	---	0			
3/2	---	---	---	0	100	101	102	24	95	95	95	2	---	---	---	0	---	---	---	0			
3/3	---	---	---	0	101	102	103	24	95	95	96	12	---	---	---	0	---	---	---	0			
3/4	---	---	---	0	103	103	104	24	95	95	96	8	---	---	---	0	---	---	---	0			
3/5	---	---	---	0	102	102	103	24	96	96	96	18	---	---	---	0	---	---	---	0			
3/6	---	---	---	0	102	102	103	24	96	97	97	24	---	---	---	0	---	---	---	0			
3/7	---	---	---	0	102	103	103	24	96	96	96	24	---	---	---	0	---	---	---	0			
3/8	---	---	---	0	101	101	102	24	97	97	102	24	---	---	---	0	---	---	---	0			
3/9	---	---	---	0	102	103	103	24	96	97	97	24	---	---	---	0	---	---	---	0			
3/10	---	---	---	0	102	103	103	24	97	97	98	24	---	---	---	0	---	---	---	0			
3/11	---	---	---	0	103	103	104	24	96	96	97	24	---	---	---	0	---	---	---	0			
3/12	---	---	---	0	102	103	103	24	96	96	96	23	---	---	---	0	---	---	---	0			
3/13	---	---	---	0	102	102	103	24	95	95	96	23	---	---	---	0	---	---	---	0			
3/14	---	---	---	0	102	102	103	24	95	95	95	12	---	---	---	0	---	---	---	0			

Total Dissolved Gas Saturation Data at Snake River Sites

Date	<u>Clrwtr-Lewiston</u>			#	<u>Lower Granite</u>			#	<u>L. Granite Tlwr</u>			#	<u>Little Goose</u>			#	<u>L. Goose Tlwr</u>			#			
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
3/1	---	---	---	0	99	99	100	16	99	99	100	24	---	---	---	0	---	---	---	0			
3/2	---	---	---	0	99	99	99	14	98	98	99	24	---	---	---	0	---	---	---	0			
3/3	---	---	---	0	99	100	100	15	99	99	100	24	---	---	---	0	---	---	---	0			
3/4	---	---	---	0	101	101	101	11	100	101	101	24	---	---	---	0	---	---	---	0			
3/5	---	---	---	0	102	102	102	13	101	102	102	24	---	---	---	0	---	---	---	0			
3/6	---	---	---	0	103	103	103	15	102	103	103	24	---	---	---	0	---	---	---	0			
3/7	---	---	---	0	102	102	103	22	102	102	102	24	---	---	---	0	---	---	---	0			
3/8	---	---	---	0	101	101	102	18	101	101	102	24	---	---	---	0	---	---	---	0			
3/9	---	---	---	0	102	102	102	7	101	102	102	24	---	---	---	0	---	---	---	0			
3/10	---	---	---	0	102	102	103	11	102	103	103	24	---	---	---	0	---	---	---	0			
3/11	---	---	---	0	103	103	104	12	103	103	104	24	---	---	---	0	---	---	---	0			
3/12	---	---	---	0	102	102	103	3	103	103	103	24	---	---	---	0	---	---	---	0			
3/13	---	---	---	0	101	101	102	12	102	102	102	24	---	---	---	0	---	---	---	0			
3/14	---	---	---	0	101	101	102	10	101	101	102	24	---	---	---	0	---	---	---	0			

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

Date	<u>Lower Mon.</u>			#	<u>L. Mon. Tlwr</u>			#	<u>Ice Harbor</u>			#	<u>Ice Harbor Tlwr</u>			#	<u>McNary-Oregon</u>			#			
	<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High		<u>24 h</u>	<u>12 h</u>	High
	Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg			Avg	Avg	
3/1	---	---	---	0	---	---	---	0	101	102	102	24	101	101	101	24	100	101	101	24			
3/2	---	---	---	0	---	---	---	0	100	101	101	24	100	100	101	24	100	101	101	24			
3/3	---	---	---	0	---	---	---	0	101	102	102	24	100	101	101	24	101	102	103	24			
3/4	---	---	---	0	---	---	---	0	102	102	102	24	101	102	102	24	102	103	103	24			
3/5	---	---	---	0	---	---	---	0	102	102	102	24	101	102	102	24	102	103	103	24			
3/6	---	---	---	0	---	---	---	0	103	103	103	24	102	102	102	24	103	103	103	24			
3/7	---	---	---	0	---	---	---	0	102	102	103	24	102	102	103	24	102	102	103	24			
3/8	---	---	---	0	---	---	---	0	101	102	102	24	101	101	101	24	101	101	102	24			
3/9	---	---	---	0	---	---	---	0	101	102	102	24	101	101	102	24	100	101	101	24			
3/10	---	---	---	0	---	---	---	0	102	102	102	24	101	101	102	24	101	101	102	24			
3/11	---	---	---	0	---	---	---	0	102	102	103	24	102	102	103	24	101	101	101	24			
3/12	---	---	---	0	---	---	---	0	102	102	102	24	102	102	102	24	101	101	101	24			
3/13	---	---	---	0	---	---	---	0	102	102	103	24	102	102	102	24	101	102	102	24			
3/14	---	---	---	0	---	---	---	0	102	102	103	24	101	102	102	24	101	102	102	24			

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

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

Date	<u>McNary-Wash</u>				<u>McNary Tlwr</u>				<u>John Day</u>				<u>John Day Tlwr</u>				<u>The Dalles</u>			
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>AVG</u>	<u>High</u>	<u>hr</u>
3/1	100	101	101	24	100	100	100	24	---	---	---	0	---	---	---	0	---	---	---	0
3/2	100	101	101	24	100	100	100	24	---	---	---	0	---	---	---	0	---	---	---	0
3/3	101	101	102	24	100	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/4	102	103	103	24	102	102	102	24	---	---	---	0	---	---	---	0	---	---	---	0
3/5	103	103	103	24	102	102	103	24	---	---	---	0	---	---	---	0	---	---	---	0
3/6	103	103	103	24	102	102	102	24	---	---	---	0	---	---	---	0	---	---	---	0
3/7	102	103	103	24	102	102	102	24	---	---	---	0	---	---	---	0	---	---	---	0
3/8	101	102	102	24	100	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/9	101	102	102	24	100	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/10	101	101	101	24	100	100	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/11	101	101	102	24	101	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0
3/12	102	102	102	24	101	101	102	24	---	---	---	0	---	---	---	0	---	---	---	0
3/13	102	102	102	24	101	101	102	24	---	---	---	0	---	---	---	0	---	---	---	0
3/14	102	102	102	24	101	101	101	24	---	---	---	0	---	---	---	0	---	---	---	0

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

Date	<u>The Dalles Dnst</u>				<u>Bonneville</u>				<u>Warrendale</u>				<u>Skamania</u>				<u>CamasWashugal</u>			
	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>
3/1	---	---	---	0	102	102	102	24	102	102	103	24	101	102	104	24	102	103	104	24
3/2	---	---	---	0	102	102	102	24	102	102	103	24	101	102	103	24	101	102	103	23
3/3	---	---	---	0	102	102	103	24	102	102	103	24	101	102	104	24	102	102	103	23
3/4	---	---	---	0	103	104	104	24	103	104	104	24	103	104	105	24	103	104	105	23
3/5	---	---	---	0	104	104	104	24	103	104	104	24	103	103	103	24	104	104	104	23
3/6	---	---	---	0	104	104	104	24	104	104	104	24	103	103	103	24	103	103	104	23
3/7	---	---	---	0	103	103	104	24	103	103	104	24	102	103	104	24	102	103	103	23
3/8	---	---	---	0	102	102	103	24	102	102	103	24	101	102	102	24	102	102	103	23
3/9	---	---	---	0	102	102	102	24	102	103	103	24	101	102	103	24	101	102	102	23
3/10	---	---	---	0	102	102	103	24	102	103	103	24	101	101	102	24	101	102	102	23
3/11	---	---	---	0	103	103	103	24	103	103	103	24	101	102	102	24	102	103	103	23
3/12	---	---	---	0	103	103	103	24	104	106	107	24	102	103	104	24	102	103	103	23
3/13	---	---	---	0	102	103	103	24	110	111	112	24	103	104	105	24	103	104	105	23
3/14	---	---	---	0	102	102	103	24	110	112	112	24	104	105	107	24	105	107	108	23

## HATCHERY RELEASE SUMMARY LAST TWO WEEKS

### Hatchery Release Summary

From: **3/1/02** to **3/14/02**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
IDFG	Rapid River	CH1	SP	2002	300,000	03-14-02	03-15-02	Hazard Cr/Little Salmon R	Little Salmon River
IDFG	Rapid River	CH1	SP	2002	500,000	03-11-02	03-13-02	Hells Canyon Dam	Snake River
IDFG	Rapid River	CH1	SP	2002	2,600,000	03-11-02	04-22-02	Rapid River H	Little Salmon River
<b>IDFG Total</b>					3,400,000				
Umatilla Tribe	Bonneville	CH1	FA	2002	40,000	03-12-02	03-19-02	Umatilla R	Umatilla River
Umatilla Tribe	Bonneville	CH1	FA	2002	260,000	03-11-02	03-22-02	Thornhollow Acclim Pd	Umatilla River
Umatilla Tribe	Lower Herman C	CO	UN	2002	792,159	03-02-02	03-07-02	Pendelton Acclim Pd	Umatilla River
Umatilla Tribe	Umatilla	CH1	SP	2002	401,000	03-04-02	03-18-02	Imeques Acclim Pd	Umatilla River
<b>Umatilla Tribe Total</b>					1,493,159				
USFWS	Spring Creek	CH0	FA	2002	7,700,000	03-11-02	03-11-02	Spring Creek H	L Col R (D/s McN Dam)
<b>USFWS Total</b>					7,700,000				
WDFW	Klickitat	CH1	SP	2002	610,000	03-08-02	03-12-02	Klickitat H	Klickitat River
<b>WDFW Total</b>					610,000				
<b>Grand Total</b>					13,203,159				

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

## HATCHERY RELEASE SUMMARY NEXT TWO WEEKS

### Hatchery Release Summary

From: **3/15/02** to **3/28/02**

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
IDFG	Clearwater	CH1	SP	2002	350,100	03-25-02	03-25-02	Powell Acclim Pd	Lochsa River
IDFG	Clearwater	CH1	SP	2002	350,500	03-28-02	03-28-02	Red River Acclim Pd	S Fk Clearwater River
IDFG	McCall	CH1	SU	2002	41,700	03-25-02	03-29-02	Knox Bridge	Salmon River
IDFG	McCall	CH1	SU	2002	1,023,000	03-25-02	03-29-02	Knox Bridge	Salmon River
IDFG	Niagara Springs	ST	SU	2002	525,000	03-25-02	04-05-02	Hells Canyon Dam	Snake River
IDFG	Pahsimeroi	CH1	SU	2002	89,944	03-15-02	03-22-02	Pahsimeroi H	Pahsimeroi River
IDFG	Pahsimeroi	CH1	SU	2002	418,500	03-15-02	03-22-02	Pahsimeroi H	Pahsimeroi River
IDFG	Rapid River	CH1	SP	2002	300,000	03-14-02	03-15-02	Hazard Cr/Little Salmon R	Little Salmon River
IDFG	Rapid River	CH1	SP	2002	2,600,000	03-11-02	04-22-02	Rapid River H	Little Salmon River
<b>IDFG Total</b>					<b>5,698,744</b>				
Nez Perce Tribe	McCall	CH1	SU	2002	57,000	03-18-02	03-22-02	Johnson Cr Idaho	South Fork Salmon River
Nez Perce Tribe	Willard	CO	UN	2002	280,000	03-15-02	03-29-02	Lapwai Cr	Clearwater Rvr M F
Nez Perce Tribe	Willard	CO	UN	2002	280,000	03-15-02	03-29-02	Potlatch R	Clearwater Rvr M F
<b>Nez Perce Tribe Total</b>					<b>617,000</b>				
ODFW	Lookingglass	CH1	SP	2002	304,000	03-22-02	04-15-02	Imnaha Acclim Pd	Imnaha River
<b>ODFW Total</b>					<b>304,000</b>				
Umatilla Tribe	Bonneville	CH1	FA	2002	40,000	03-12-02	03-19-02	Umatilla R	Umatilla River
Umatilla Tribe	Bonneville	CH1	FA	2002	260,000	03-11-02	03-22-02	Thornhollow Acclim Pd	Umatilla River
Umatilla Tribe	Umatilla	CH1	SP	2002	401,000	03-04-02	03-18-02	Imeques Acclim Pd	Umatilla River
<b>Umatilla Tribe Total</b>					<b>701,000</b>				
USFWS	Dworshak	CH1	SP	2002	500,000	03-25-02	04-05-02	Kooskia H	Clearwater Rvr M F
USFWS	Dworshak	CH1	SP	2002	1,000,000	03-25-02	04-05-02	Dworshak H	Clearwater Rvr M F
USFWS	Kooskia	CH1	SP	2002	50,000	03-25-02	04-05-02	Clear Cr	Clearwater Rvr M F
USFWS	Warm Springs	CH1	SP	2002	582,800	03-26-02	04-18-02	Warm Springs H	Deschutes River
<b>USFWS Total</b>					<b>2,132,800</b>				
Yakima Tribe	Cle Elum	CH1	SP	2002	265,500	03-18-02	06-07-02	Easton Pd	Yakama River
Yakima Tribe	Cle Elum	CH1	SP	2002	288,000	03-18-02	06-07-02	Clark Flat Acclim Pd	Yakama River
Yakima Tribe	Cle Elum	CH1	SP	2002	288,000	03-18-02	06-07-02	Jack Creek Acclim Pd	Yakama River
<b>Yakima Tribe Total</b>					<b>841,500</b>				
<b>Grand Total</b>					<b>10,295,044</b>				

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

## Two-Week Summary of Passage Indices

### COMBINED YEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/01/2002	---	---	---	---	---	---	---	---	---	---	---
03/02/2002	---	---	---	---	---	---	---	---	---	---	---
03/03/2002	---	0	---	---	---	---	---	---	---	---	---
03/04/2002	---	3	---	---	---	---	---	---	---	---	---
03/05/2002	---	1	---	---	---	---	---	---	---	---	---
03/06/2002	---	1	---	---	---	---	---	---	---	---	---
03/07/2002	---	0	---	---	---	---	---	---	---	---	---
03/08/2002	---	4	---	---	---	---	---	---	---	---	---
03/09/2002	---	8	---	---	---	---	---	---	---	---	---
03/10/2002	---	---	---	---	---	---	---	---	---	---	---
03/11/2002	0	8	---	0	---	---	---	---	---	---	---
03/12/2002	1	3	---	0	---	---	---	---	---	---	106
03/13/2002	1	1	---	0	---	---	---	---	---	---	0
03/14/2002	151	---	---	0	---	---	---	---	---	---	976
03/15/2002	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>	<b>153</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,082</b>
<b># Days:</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Average:</b>	<b>38</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>271</b>
<b>YTD</b>	<b>153</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,082</b>

### COMBINED SUBYEARLING CHINOOK

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO2 (INDEX)
03/01/2002	---	---	---	---	---	---	---	---	---	---	---
03/02/2002	---	---	---	---	---	---	---	---	---	---	---
03/03/2002	---	0	---	---	---	---	---	---	---	---	---
03/04/2002	---	0	---	---	---	---	---	---	---	---	---
03/05/2002	---	0	---	---	---	---	---	---	---	---	---
03/06/2002	---	0	---	---	---	---	---	---	---	---	---
03/07/2002	---	0	---	---	---	---	---	---	---	---	---
03/08/2002	---	0	---	---	---	---	---	---	---	---	---
03/09/2002	---	1	---	---	---	---	---	---	---	---	---
03/10/2002	---	---	---	---	---	---	---	---	---	---	---
03/11/2002	0	0	---	0	---	---	---	---	---	---	---
03/12/2002	0	0	---	1	---	---	---	---	---	---	847
03/13/2002	0	0	---	0	---	---	---	---	---	---	18,242
03/14/2002	0	---	---	0	---	---	---	---	---	---	385,935
03/15/2002	---	---	---	---	---	---	---	---	---	---	197,382
<b>Total:</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>602,406</b>
<b># Days:</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>150,602</b>
<b>YTD</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>602,406</b>

\*The total, #days and average do not include the current day's data. \*See sampling comments. <http://www.fpc.org/current/daily/smpcomments.htm>. This means that one or more of the sites on this date had an incomplete or biased sample.

These data are preliminary and have been derived from various sources. For verification and/or origin of these data, contact the operators of the Fish Passage Data System at (503) 230-4099.

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.



## Two-Week Summary of Passage Indices

### COMBINED SOCKEYE

Date	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
03/01/2002	---	---	---	---	---	---	---	---	---	---	---
03/02/2002	---	---	---	---	---	---	---	---	---	---	---
03/03/2002	---	0	---	---	---	---	---	---	---	---	---
03/04/2002	---	0	---	---	---	---	---	---	---	---	---
03/05/2002	---	0	---	---	---	---	---	---	---	---	---
03/06/2002	---	0	---	---	---	---	---	---	---	---	---
03/07/2002	---	0	---	---	---	---	---	---	---	---	---
03/08/2002	---	0	---	---	---	---	---	---	---	---	---
03/09/2002	---	0	---	---	---	---	---	---	---	---	---
03/10/2002	---	---	---	---	---	---	---	---	---	---	---
03/11/2002	0	0	---	0	---	---	---	---	---	---	---
03/12/2002	0	0	---	0	---	---	---	---	---	---	0
03/13/2002	0	0	---	0	---	---	---	---	---	---	0
03/14/2002	0	---	---	0	---	---	---	---	---	---	0
03/15/2002	---	---	---	---	---	---	---	---	---	---	0
<b>Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b># Days:</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>Average:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>YTD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

#### 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)}

BO1 (Index) = Bonneville Dam First Powerhouse Bypass Collection System : Passage Index Counts

Passage Index = Collection Counts / {Powerhouse 1 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.

**Cumulative Adult Passage at Mainstem Dams Through: 03/12**

DAM	Spring Chinook						Summer Chinook						Fall Chinook					
	2002		2001		10-Yr Avg.		2002		2001		10-Yr Avg.		2002		2001		10-Yr Avg.	
	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	---	---					---	---					---	---				
TDA	---	---					---	---					---	---				
JDA	---	---					---	---					---	---				
MCN	---	---					---	---					---	---				
IHR	---	---					---	---					---	---				
LMN	---	---					---	---					---	---				
LGS	---	---					---	---					---	---				
LWG	0	0					0	0					0	0				
PRD	---	---					---	---					---	---				
RIS	---	---					---	---					---	---				
RRH	---	---					---	---					---	---				
WEL	---	---					---	---					---	---				

DAM	Coho						Sockeye			Steelhead			
	2002		2001		10-Yr Avg.				10-Yr	10-Yr		Wild	
	Adult	Jack	Adult	Jack	Adult	Jack	2002	2001	Avg.	2002	2001	Avg.	2002
BON	---	---					---			---			---
TDA	---	---					---			---			---
JDA	---	---					---			---			---
MCN	---	---					---			---			---
IHR	---	---					---			---			---
LMN	---	---					---			---			---
LGS	---	---					---			---			---
LWG	0	0					0			816	544	672	21
PRD	---	---					---			---			**
RIS	---	---					---			---			---
RRH	---	---					---			---			---
WEL	---	---					---			---			---

Our Bonneville Counts will begin March 15

\*\*PRD is not reporting Wild Steelhead numbers.

These numbers were collected from the COE's Running Sums text files.

Wild steelhead numbers are included in the total.

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.



