Fish Passage Center

Weekly Report #99 - 4

April 2, 1999

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SUMMARY OF EVENTS:

Water Supply: Precipitation continues to be low over most of the region. Temperatures are below normal and it is expected that light precipitation will continue during next week. The October-March total for the Columbia River above The Dalles is 116% and for the Snake River above Ice Harbor was 112%.

System Storage : The system continues to be operated for flood control with special operations for maintenance purposes. Hungry Horse continues to be drafted below the end of March flood control elevation for maintenance work. COE decided at the beginning of March to operate Libby at minimum outflow in order to refill the reservoir to an end of April elevation that will enable the refill of the pool by June 30, while meeting requirements for sturgeon spawning flows. It is uncertain whether the BiOp required refill target will be met after the reservoir was drafted to flood control elevations during the January through February period. This failure to refill the reservoir can result in shifting some of the spring runoff volume into summer operations.

Arrow reservoir was operated with a steady outflow of 20 kcfs to limit trout spawning areas during April-May period. This operation decreased inflows to Grand Coulee, which resulted in decreasing outflows to 126.6 kcfs on April 1, from 151.5 kcfs on March 29.

Dworshak reservoir increased outflow to 16 kcfs as of March 29, in order to draft the reservoir to required end of March flood control elevations. The inflow to Dworshak decreased from 17.4 kcfs on March 26 to 7 kcfs on April 1, and is expected to continue to decrease. Inflows in the mid-Snake reach are expected to decrease to 40 kcfs by April 4, after being in the range of 60-65 kcfs. Outflows at Hells Canyon Dam are in the range of 48-50kcfs, requiring spill. Brownlee reservoir was at the required flood control elevation at the end of March, and it will continue to draft to the April flood control elevation.

A summary of the current elevations on March 31 and end of March flood control elevations are given in the following Table:
Table:

Reservoir	Actual elev. as of March 31 [ft]	Max Reservoir pool [ft]	End of March Flood Control Elev. [ft]
Libby	2323.46	2459	2310.9
Hungry Horse	3485.84	3560	3507.1
Grand Coulee	1246.80	1290	1247.7
Brownlee	2006.3*	2077	2006.8
Dworshak	1456.21	1600	1445.0

*as of April 1

Upper Snake reservoirs:
Currently all reservoirs continue to be operated for flood control. As of April 1, BOR has refilled American Falls to 91% of full this week and drafted Palisades as required for flood control to 42% of full (from 59% of full on March 18). Flows at Milner decreased to 8 kcfs compared to 10.7 kcfs during the previous week.

Streamflow: Spring flow target based on the March Final Runoff Volume Forecast is: at Lower Granite 100 kcfs; and at McNary 260 kcfs. The COE's SSARR projections are showing that seasonal spring flow targets at both projects will be met during the spring season.

Flows at Priest Rapids were gradually increasing from 137.4 kcfs to 157.8 kcfs during March 26-30. Flows decreased to 152.4 kcfs as of March 31 and to 153 kcfs on April 1. Hourly flows at Priest Rapids did not have as large fluctuations as during the previous week. Daily hourly fluctuations are presented in the following table:

Date	Average Daily Flow at Priest Rapids [kcfs]	Hourly fluctuations [kcfs]
March 26	138.4	127.1-141.2
March 27	142.4	120.5-155.8
March 28	155.2	144.0-159.3
March 29	156.9	127.4-161.7
March 30	157.8	140.8-160.9
March 31	153.4	143.6-161.6
April 1	154.3	148.2-161.2

The average discharge for the major run-off projects for March 19 through April 1 are given in the following Table:

Project	Average Discharge [kcfs]	
	March 19-25	March 26-April 1
Priest Rapids	119.8	151.2
McNary	233.8	277.1
Lower Granite	104.4	109.4
Bonneville	245.6	304.4

The fishery agencies requirement to meet the minimum flow request at Bonneville Dam during the entire fall season has been met. Although hourly flows have been fluctuating below Bonneville at higher than requested levels, a few instance of stranded fall chinook, coho and chum juveniles have been noted. Preliminary observations indicate that hourly fluctuations when flows exceed 270 kcfs result in stranding. This area is undergoing extensive monitoring and study to determine the best operation regime to protect spawning and emergence. Flows are required for protection of fall chinook on Ives Island.

Spill: A. request was made by the fishery agencies and tribes to initiate Biological Opinion spill at Lower Granite Dam on March 31, 1999. The request was based on the increasing numbers of juvenile migrants that were previously detected at the traps and were now showing up at Lower Granite. The request asked for spill to be phased in at one-day intervals at the successive downstream projects. The request was modified by the Bonneville Power Administration to begin on April 2, 1999 based on pre-scheduled power commitments.

Spill is presently occurring at Dworshak Dam as that project continues at an increased outflow in order to achieve its flood control elevation. Spill is also occurring at the Hells Canyon complex for the same reason. Intermittent spill occurred at Chief Joseph, Rocky Reach, Wanapum and Priest Rapids dams in the Mid Columbia River this past week. Excess capacity spill occurred at Lower Granite, Little Goose and Lower Monumental Dams at the higher flows during the beginning of the week, but decreased through the week as flows receded. Consistent spill in excess of hydraulic capacity occurred at Ice Harbor Dam in the lower Snake River and in the Lower Columbia at McNary Dam and Bonneville dams. Spill also occurred at John Day and The Dalles when flows exceeded hydraulic capacity or power needs.

Total dissolved gas levels have exceeded the 110% standard at all the Snake River projects and in some cases the 120% was also exceeded. In the lower Columbia the 110% standard was exceeded below all projects and the 120% was approached below McNary Dam.

Smolt Monitoring. In the Snake River basin, wild chinook dominated the collections at Lower Granite Dam this week. PIT tagged wild chinook from each of the four major tributaries above Lower Granite Dam were detected at the dam this week. Compared to the past two years, more wild chinook are showing up at Lower Granite Dam this year during the first week of monitoring. By week's end the daily passage index of wild chinook had rose to over 4,400 fish. Based on PIT tag detections, most hatchery chinook passing Lower Granite Dam this week appear to be from Lookingglass Hatchery, with smaller numbers of fish from Imnaha and Rapid River hatcheries also present. Wild and hatchery steelhead were also passing Lower Granite Dam during the first week of monitoring. During the latter half of this week, daily passage indices of hatchery chinook, wild steelhead, and hatchery steelhead have ranged in the 1,000's. In the last five days of monitoring at Lower Granite Dam, wild sockeye/kokanee passage indices have remained in the vicinity of 200 fish per day. At this time of the season these fish are most likely kokanee washed out of Dworshak Reservoir.

In the Columbia River basin, the first day of sampling at Rock Island Dam produced a handful of salmonids. At McNary Dam, the first three days of monitoring saw hatchery steelhead dominate the collections, followed by yearling and subyearling chinook. PIT tag detections at McNary Dam show hatchery chinook from Lookingglass Hatchery and hold-over hatchery fall chinook from Clearwater and Snake River acclimation ponds, as well as hold-over wild fall chinook from the Clearwater and Tucannon rivers. Throughout this week, yearling chinook dominated the collections at Bonneville Dam. By week's end, increasing numbers of coho, wild steelhead, and hatchery steelhead were also present at Bonneville Dam.

Adult Fish Passage: On April 1 all Corps of Engineer dams began fish counting for the season on a 16-h per day basis. Adult fish passage facilities have been operating at full criteria with the exception of John Day Dam. The project has been working on the North Shore water supply system; the work was completed on March 31 at 6:30 p.m. The Snake River projects have been operating their fishways at full criteria. All Mid-Columbia projects should now be operating adult fish passage facilities at full capability. The Mid-Columbia projects will begin counting fish in mid-April.

At Bonneville Dam, spring chinook passage remained well below the 1998 and 10-year average to date. 110 adult spring chinook and 1 jack have been counted through March 30, compared to 261 in 1998 and 422 for the 10-year average. Passage of adult steelhead at Bonneville is also well below the 1998 total and the 10-year average through March 30. Of the 295 steelhead counted, only 7 wild steelhead have been tallied at the project. At both The Dalles and John Day, only 1 adult chinook salmon was counted at each project.

At Lower Granite Dam, steelhead passage generally was between 40-50 fish per day for the week, with a season total through March 30 of 1,906. Of that total, 114 were recorded as being "wild" steelhead (about 6% of the run). So far, total passage of adult steelhead at Lower Granite was less than the 1998 and 10-year average. No adult chinook salmon have been counted at any Snake River projects yet.

Hatchery Releases: The Hatchery Release Tables show the number of fish released from the Columbia River basin hatcheries during the past two weeks and for the upcoming two weeks. The schedules will be changed as they are received from the coordinators or hatcheries. During the past two weeks, approximately 11.5 million anadromous salmon were released or were part of volitional releases. For the upcoming two weeks, about 14.1 million salmon are slated for release from hatcheries into the rivers and tributaries above Bonneville Dam.

Lower Columbia River (above Bonneville Dam to McNary Dam) – To date, yearling spring chinook from Klickitat Hatchery, Umatilla River acclimation ponds, and from Warm Springs NFH have been released. Large numbers of coho salmon were released in the Umatilla and Klickitat rivers during the past week. Also, yearling fall chinook from Thornhollow Acclimation Pond have been released.

Mid-Columbia River – Volitional release of the remaining 800,000 yearling spring chinook from Ringold Hatchery began on April 1 and will continue through April 4. Entiat Hatchery also released their spring chinook this week. Other hatcheries in the Mid-Columbia are mainly scheduling releases for mid-April through early May.

Snake River – A number of hatcheries released spring chinook in summer and fall 1998, with other production releases from Snake River hatcheries scheduled for late March and early April. Most spring and summer chinook will be planted in the rivers by early to mid-April. As noted in the Tables, large numbers of steelhead, coho, and chinook were released from hatcheries, acclimation ponds during the week.

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

	Grand Coulee		Chief Joseph		Wells		Rocky Reach		Rock Island		Wanapum		Priest Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/19/99	114.5	0.0	117.5	0.0	120.4	0.0	127.6	0.0	127.7	0.0	120.0	3.0	121.4	0.0
03/20/99	96.4	0.0	98.6	0.0	102.8	0.0	110.0	0.0	111.9	0.0	111.2	0.0	117.8	0.0
03/21/99	85.5	0.0	86.0	0.0	88.8	0.0	91.9	0.0	90.7	0.0	98.3	0.0	96.3	0.0
03/22/99	106.9	0.0	114.4	0.0	117.3	0.0	120.8	3.7	118.4	0.0	115.2	0.0	120.0	0.0
03/23/99	113.9	0.0	118.4	0.0	121.6	0.0	127.2	0.0	129.1	0.0	126.8	0.0	123.4	0.0
03/24/99	118.2	0.0	122.5	0.0	122.5	0.0	123.9	0.8	121.8	0.0	126.5	0.0	127.9	0.0
03/25/99	125.3	0.0	122.9	0.0	128.2	0.0	133.3	0.1	134.4	0.0	130.8	0.0	131.8	0.0
03/26/99	125.9	0.0	133.6	0.0	134.9	0.0	134.0	2.5	132.3	0.0	135.5	0.0	138.4	0.0
03/27/99	141.4	0.0	132.9	2.0	135.9	0.0	143.1	6.2	144.0	0.0	142.9	1.4	142.4	1.8
03/28/99	126.7	0.0	137.0	0.7	144.1	0.0	152.6	0.2	152.4	0.0	153.1	0.3	155.2	0.0
03/29/99	151.5	0.0	148.4	0.4	147.1	0.0	149.1	4.4	147.8	0.0	153.8	0.0	156.9	0.0
03/30/99	136.7	0.0	142.8	0.2	146.6	0.0	151.2	0.1	153.0	0.0	154.7	0.0	157.8	0.0
03/31/99	129.5	0.0	139.6	0.0	141.3	0.0	148.6	0.0	148.5	0.0	153.3	0.0	153.4	0.0
04/01/99	126.6	0.0	129.8	0.0	134.0	0.0	144.7	0.0	144.5	0.0	152.1	0.0	154.3	0.0

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

	Dworshak		Brownlee		Lower Granite		Little Goose		Lower Monumental		Ice Harbor	
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill
03/19/99	14.0	3.6	---	---	85.8	0.0	85.3	0.8	92.3	0.0	100.6	29.7
03/20/99	14.0	3.6	---	---	86.5	0.0	87.3	3.3	88.9	0.0	84.9	15.6
03/21/99	14.0	3.6	---	---	103.8	1.6	105.6	21.1	115.8	0.0	118.8	48.0
03/22/99	14.0	3.6	---	---	113.0	25.3	111.2	32.2	115.8	0.0	115.2	42.6
03/23/99	14.0	3.6	---	---	118.3	27.1	123.5	53.0	130.8	19.2	130.7	54.5
03/24/99	14.0	3.6	---	---	111.9	4.0	111.2	40.0	116.2	16.4	120.3	43.2
03/25/99	14.0	3.6	---	---	111.7	17.0	116.0	46.9	123.7	1.1	122.9	37.7
03/26/99	14.0	3.6	---	---	123.4	17.4	121.3	51.6	128.4	5.0	129.4	39.5
03/27/99	14.0	3.6	---	---	127.9	41.1	124.7	40.0	133.2	10.5	136.5	46.4
03/28/99	15.3	4.9	---	---	121.3	34.0	122.6	37.3	131.5	9.2	134.8	44.9
03/29/99	15.9	5.6	---	---	112.9	1.6	114.0	35.0	121.7	0.9	122.3	36.9
03/30/99	16.0	5.7	---	---	99.4	0.7	106.6	41.3	113.6	0.4	113.8	28.9
03/31/99	16.0	5.6	---	---	95.5	0.0	103.6	23.7	112.3	0.0	122.5	31.5
04/01/99	16.0	5.6	---	---	85.2	0.0	85.1	0.0	92.6	0.0	88.5	0.4

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

	McNary		John Day		The Dalles		Bonneville			
Date	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	PH1	PH2
03/19/99	237.8	71.2	243.0	0.0	246.3	0.0	251.2	161.6	66.3	14.1
03/20/99	215.4	43.4	226.5	0.0	220.3	0.0	247.2	161.0	71.7	5.3
03/21/99	215.5	38.6	221.0	0.0	226.7	0.0	240.2	149.1	76.7	5.2
03/22/99	223.5	55.6	234.6	0.0	235.8	7.0	244.7	143.0	81.8	10.7
03/23/99	250.0	78.4	250.4	41.3	252.1	0.0	248.1	140.5	78.3	20.1
03/24/99	255.1	85.9	270.1	54.3	270.1	0.0	274.5	151.0	76.3	38.1
03/25/99	239.6	66.1	251.9	0.0	259.0	10.0	276.4	150.2	78.7	38.2
03/26/99	264.4	88.9	268.4	0.0	274.7	25.0	292.4	108.5	83.1	91.6
03/27/99	285.8	108.7	297.2	13.7	285.8	31.0	299.5	110.3	82.0	98.0
03/28/99	290.0	113.5	326.0	41.0	327.4	25.0	330.1	110.3	86.6	124.0
03/29/99	292.4	120.7	291.0	19.1	296.0	35.0	309.7	81.7	78.6	140.2
03/30/99	277.2	105.8	293.8	31.0	285.7	14.0	298.3	80.0	77.4	131.7
03/31/99	290.9	114.2	297.9	38.5	295.7	15.0	308.7	80.8	83.1	135.6
04/01/99	239.2	63.1	260.5	2.7	269.0	0.0	292.4	63.1	82.3	137.8

Hatchery Release Summary

For the Last Two Weeks

From 3/19/99 to 4/1/99

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
IDFG							
Clearwater							
	SP Chinook	1999	300,000	04/01/99	04/15/99	Red River Acclim Pd	S Fk Clearwater River
Niagara Springs							
	SU Steelhead	1999	660,000	03/22/99	04/05/99	Hells Canyon Dam	Snake River
Rapid River							
	SP Chinook	1999	2,847,500	03/16/99	04/15/99	Rapid River H	Little Salmon River
	SP Chinook	1999	200,000	03/17/99	03/19/99	Little Salmon R	Salmon River
	SP Chinook	1999	300,000	03/18/99	03/19/99	Hells Canyon Dam	Snake River
		Agency Totals:	**4,307,500**	.....			
Nez Perce Tribe							
Clearwater							
	SP Chinook	1999	39,700	03/19/99	03/19/99	S Fk Clearwater R	Clearwater Rvr M F
	SP Chinook	1999	74,300	03/19/99	03/19/99	Newsome Cr	S Fk Clearwater River
	SP Chinook	1999	287,900	03/23/99	03/26/99	Selway R	Clearwater Rvr M F
	SP Chinook	1999	148,400	03/29/99	03/30/99	Lolo Cr	Clearwater Rvr M F
Lookingglass							
	SP Chinook	1999	12,061	04/01/99	04/15/99	Lostine R	Grande Ronde River
Lyons Ferry							
	FA Chinook	1999	150,000	03/25/99	04/12/99	Cpt John Acclim Pd	Snake River
		Agency Totals:	**712,361**	.....			
ODFW							
Cascade							
	Coho	1999	250,000	03/30/99	04/08/99	Umatilla R	Columbia River
Lower Herman C							
	Coho	1999	500,000	03/20/99	03/31/99	Umatilla R	Columbia River
Imnaha							
	SP Chinook	1999	96,300	03/16/99	04/15/99	Imnaha Acclim Pd	Imnaha River
	SP Chinook	1999	89,000	03/16/99	04/15/99	Imnaha Acclim Pd	Imnaha River
Irrigon							
	SU Steelhead	1999	137,500	04/01/99	04/15/99	Wallowa Acclim Pd	Grande Ronde River
Lookingglass							
	SP Chinook	1999	312,000	03/15/99	04/01/99	Lookingglass H	Grande Ronde River
	SP Chinook	1997	167	03/30/99	03/30/99	Lookingglass H	Grande Ronde River

Hatchery Release Summary

For the Last Two Weeks
From 3/19/99 to 4/1/99

Hatchery	Species...		Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Oak Springs								
	SU	Steelhead	1999	61,000	04/01/99	04/10/99	Hood R	Columbia River
Wallowa								
	SU	Steelhead	1999	217,000	03/31/99	03/31/99	Wallowa Acclim Pd	Grande Ronde River
	SU	Steelhead	1999	217,000	04/01/99	04/19/99	Wallowa Acclim Pd	Grande Ronde River
			Agency Totals:	**1,879,967**	.....			
				USFWS				
Entiat								
	SP	Chinook	1999	359,000	04/01/99	04/01/99	Entiat H	Mid-Columbia River
Kooskia								
	SP	Chinook	1999	50,000	04/01/99	04/09/99	Clear Cr	Clearwater Rvr M F
			Agency Totals:	**409,000**	.....			
				WDFW				
Lyons Ferry								
	FA	Chinook	1999	450,000	03/25/99	04/12/99	Lyons Ferry H	Snake River
	SU	Steelhead	1999	250,000	03/25/99	04/30/99	Cottonwood Acclim Pd	Grande Ronde River
	SU	Steelhead	1999	125,000	03/25/99	04/30/99	Dayton Acclim Pd	Walla Walla River
Ringold								
	SP	Chinook	1999	840,000	04/01/99	04/08/99	Ringold Springs H	Mid-Columbia River
Tucannon								
	SP	Chinook	1999	25,000	03/09/99	04/20/99	Curl Lake	Tucannon River
Washougal								
		Coho	1999	2,500,000	04/01/99	04/07/99	Klickitat R	Columbia River
			Agency Totals:	**4,190,000**	.....			
			Total Release..	**11,498,828**				

Hatchery Release Summary

For the Next Two Weeks

From 4/2/99 to 4/15/99

Hatchery	Species...	Migration	Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Colville Tribe								
Cassimer Bar								
	Sockeye		1999	18,000	04/05/99	04/09/99	Okanogan R	Mid-Columbia River
		Agency Totals:		**18,000**	.....			
IDFG								
Clearwater								
SP	Chinook		1999	665,000	04/15/99	04/15/99	Crooked R Acclim Pd	S Fk Clearwater River
Magic Valley								
SU	Steelhead		1999	30,000	04/10/99	04/30/99	Sawtooth H	Salmon River
SU	Steelhead		1999	360,200	04/10/99	04/20/99	Little Salmon R	Salmon River
SU	Steelhead		1999	343,640	04/15/99	04/20/99	Lemhi R	Salmon River
McCall								
SU	Chinook		1999	1,017,650	04/05/99	04/15/99	S Fk Salmon R	Salmon River
SU	Chinook		1999	122,900	04/05/99	04/15/99	S Fk Salmon R	Salmon River
Niagara Springs								
SU	Steelhead		1999	30,000	04/06/99	04/06/99	Pine Bar/Salmon R	Salmon River
SU	Steelhead		1999	150,000	04/07/99	04/09/99	Hammer Cr	Salmon River
SU	Steelhead		1999	830,000	04/11/99	04/29/99	Pahsimeroi H	Pahsimeroi River
Pahsimeroi								
SU	Chinook		1999	135,650	04/12/99	04/12/99	Pahsimeroi H	Pahsimeroi River
Powell								
SP	Chinook		1999	334,800	04/14/99	04/15/99	Powell Acclim Pd	Lochsa River
		Agency Totals:		**4,019,840**	.....			
Nez Perce Tribe								
Lyons Ferry								
FA	Chinook		1999	228,000	04/12/99	04/15/99	Clearwater R	Snake River
FA	Chinook		1999	150,000	04/12/99	04/15/99	Pittsburg Landing	Snake River
McCall								
SU	Chinook		1999	39,000	04/05/99	04/15/99	S Fk Salmon R	Salmon River
Powell								
SP	Chinook		1999	48,900	04/05/99	04/05/99	Papoose Cr	Clearwater Rvr M F
SP	Chinook		1999	77,900	04/06/99	04/06/99	Lochsa R	Clearwater Rvr M F
SP	Chinook		1999	19,600	04/08/99	04/08/99	Lochsa R	Clearwater Rvr M F
		Agency Totals:		**563,400**	.....			

Hatchery Release Summary

For the Next Two Weeks

From 4/2/99 to 4/15/99

Hatchery	Species...		Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
ODFW								
Big Canyon								
	SU	Steelhead	1999	120,000	04/06/99	04/06/99	Big Canyon H	Grande Ronde River
	SU	Steelhead	1999	120,000	04/08/99	04/21/99	Big Canyon H	Grande Ronde River
Cascade								
		Coho	1999	750,000	04/10/99	04/20/99	Umatilla R	Columbia River
Irrigon								
	SU	Steelhead	1999	125,000	04/05/99	04/09/99	Grande Ronde R	Snake River
Li Sheep								
	SU	Steelhead	1999	210,000	04/13/99	04/13/99	L Sheep Acclim Pd	Imnaha River
Lookingglass								
	SP	Chinook	1999	10,300	04/05/99	04/06/99	Imnaha R	Imnaha River
Round Butte								
	SU	Steelhead	1999	162,000	04/05/99	04/09/99	Bel. Pelton Dam	Deschutes River
			Agency Totals:	**1,497,300**	.....			
Umatilla Tribe								
Bonifer								
	SU	Steelhead	1999	50,000	04/10/99	04/20/99	Bonifer Acclim Pd	Umatilla River
Imeques								
	SP	Chinook	1999	275,000	04/10/99	04/20/99	Imeques Acclim Pd	Umatilla River
Minthorn								
	SU	Steelhead	1999	50,000	04/10/99	04/20/99	Minthorn Acclim Pd	Umatilla River
Thornhollow								
	FA	Chinook	1999	240,000	04/10/99	04/20/99	Thornhollow Acclim Pd	Umatilla River
			Agency Totals:	**615,000**	.....			
USFWS								
Dworshak								
	SP	Chinook	1999	1,050,000	04/03/99	04/09/99	Dworshak H	Clearwater Rvr M F
Hagerman								
	SU	Steelhead	1999	410,000	04/14/99	05/10/99	Little Salmon R	Salmon River
Kooskia								
	SP	Chinook	1999	630,000	04/05/99	04/09/99	Kooskia H	Clearwater Rvr M F

Hatchery Release Summary

For the Next Two Weeks

From 4/2/99 to 4/15/99

Hatchery	Species...		Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Spring Creek								
	SP	Chinook	1999	150,000	04/15/99	04/15/99	White Salmon R	Columbia River
Winthrop								
	SP	Chinook	1999	546,000	04/14/99	04/14/99	Winthrop H	Methow River
			Agency Totals:	**2,786,000**	.....			
				WDFW				
Chewuch								
	SP	Chinook	1999	132,900	04/15/99	05/01/99	Chewuch R	Methow River
Chiwawa								
	SP	Chinook	1999	266,500	04/15/99	04/30/99	Chiwawa H	Wenatchee River
East Bank								
	SU	Chinook	1999	442,000	04/15/99	04/30/99	Dryden Acclim Pd	Wenatchee River
Klickitat								
		Coho	1999	1,150,000	04/15/99	06/10/99	Klickitat R	Columbia River
Lyons Ferry								
	SU	Steelhead	1999	175,000	04/15/99	04/30/99	Walla Walla R	Mid-Columbia River
	SU	Steelhead	1999	80,000	04/15/99	04/15/99	Lyons Ferry H	Snake River
Methow								
	SP	Chinook	1999	26,850	04/15/99	04/25/99	Twisp R	Methow River
	SP	Chinook	1999	334,000	04/15/99	04/25/99	Methow H	Methow River
Skamania								
	SU	Steelhead	1999	50,000	04/15/99	04/30/99	Little White Salmon R	Columbia River
	SU	Steelhead	1999	120,000	04/15/99	04/30/99	Klickitat R	Columbia River
	WI	Steelhead	1999	40,000	04/15/99	04/30/99	Northwestern Lake	White Salmon River
	WI	Steelhead	1999	10,000	04/15/99	04/30/99	Rock Cr	Columbia River
Wells								
	SU	Chinook	1999	589,900	04/05/99	04/26/99	Similkameen Acclim Pd	Okanogan River
	SU	Chinook	1999	410,000	04/12/99	04/19/99	Wells H	Mid-Columbia River
	SU	Steelhead	1999	236,000	04/15/99	05/05/99	Wells H	Mid-Columbia River
	SU	Steelhead	1999	50,000	04/15/99	04/30/99	Okanogan R	Mid-Columbia River
	SU	Steelhead	1999	250,000	04/15/99	05/05/99	Methow R	Mid-Columbia River
			Agency Totals:	**4,363,150**	.....			

Hatchery Release Summary

For the Next Two Weeks

From 4/2/99 to 4/15/99

Hatchery	Species...	Migration Year	Number Released	...Release Dates... Begin...	...End	Release Site	River Name
Warm Springs Tribe							
Oak Springs							
	SU	Steelhead	1999	20,000	04/06/99	04/06/99	W Fk Hood R	Hood River
	WI	Steelhead	1999	52,000	04/14/99	05/04/99	E Fk Hood R	Hood River
Round Butte							
	SP	Chinook	1999	30,000	04/05/99	04/15/99	Hood R	Columbia River
	SP	Chinook	1999	55,000	04/08/99	04/21/99	W Fk Hood R	Hood River
	SP	Chinook	1999	40,000	04/08/99	04/21/99	W Fk Hood R	Hood River
			Agency Totals:	**197,000**	.....		
Yakima Tribe							
Leavenworth							
		Coho	1999	67,500	04/10/99	04/10/99	Nason Cr	Wenatchee River
			Agency Totals:	**67,500**	.....		
			Total Release..	**14,127,190**			

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High[2]

Total Dissolved Gas Saturation Data at Upper Columbia Sites

	Can. Boundary				Grand Coulee				Tlwtr G. Coulee				Chief Joseph				Wells				Rocky Reach			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
3/19	101	101	102	24	103	103	103	23	101	101	102	23	---	---	---	0	---	---	---	0	---	---	---	0
3/20	106	111	121	24	103	104	104	23	102	103	103	23	---	---	---	0	---	---	---	0	---	---	---	0
3/21	121	124	125	24	104	104	105	23	103	103	104	23	---	---	---	0	---	---	---	0	---	---	---	0
3/22	125	125	126	24	104	104	105	23	102	103	103	23	---	---	---	0	---	---	---	0	---	---	---	0
3/23	124	125	126	24	104	105	105	23	103	103	105	23	---	---	---	0	---	---	---	0	---	---	---	0
3/24	126	127	128	24	105	105	105	23	103	103	105	23	---	---	---	0	---	---	---	0	---	---	---	0
3/25	127	128	129	24	105	105	106	23	103	104	105	23	---	---	---	0	---	---	---	0	---	---	---	0
3/26	130	131	131	24	105	105	106	24	103	104	105	24	---	---	---	0	---	---	---	0	---	---	---	0
3/27	128	130	131	24	104	105	105	24	103	103	103	24	---	---	---	0	---	---	---	0	---	---	---	0
3/28	125	125	126	24	104	104	105	23	102	103	103	19	---	---	---	0	---	---	---	0	---	---	---	0
3/29	124	124	124	24	105	105	105	23	103	103	105	23	---	---	---	0	---	---	---	0	---	---	---	0
3/30	122	123	124	24	105	105	106	23	103	104	105	23	---	---	---	0	---	---	---	0	---	---	---	0
3/31	122	123	123	23	105	105	105	23	103	103	104	19	---	---	---	0	---	---	---	0	---	---	---	0
4/1	120	121	123	24	104	104	105	23	102	103	103	23	---	---	---	0	---	---	---	0	101	103	104	23

Total Dissolved Gas Saturation Data at Mid Columbia Sites

	Tlwtr. Rocky R.				Rock Island				Tlwtr. Rock Island				Wanapum				Tlwtr Wanapum				Priest Rapids			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
3/19	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/20	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/21	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/22	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/23	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/24	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/25	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/26	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/27	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/28	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/29	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/30	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/31	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
4/1	102	102	103	21	101	102	102	23	103	103	103	23	---	---	---	0	---	---	---	0	---	---	---	0

Total Dissolved Gas Saturation at Mid Columbia, Clearwater and Snake Sites

	Dwnstr P Rapids				Dworshak				Clearwater				Snake-Lewiston				Lower Granite				Tlwtr L. Granite			
	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#	24 h	12 h		#
Date	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr	Avg	Avg	High	hr
3/19	---	---	---	0	106	106	106	17	---	---	---	0	103	104	106	24	106	107	108	23	106	106	107	24
3/20	---	---	---	0	106	106	107	13	---	---	---	0	103	105	106	24	107	107	108	24	107	108	108	24
3/21	---	---	---	0	106	106	107	21	---	---	---	0	102	102	103	24	107	107	107	24	107	108	108	24
3/22	---	---	---	0	106	106	107	15	---	---	---	0	103	104	105	24	107	107	107	24	113	117	122	24
3/23	---	---	---	0	107	107	107	7	---	---	---	0	103	103	104	24	106	107	107	24	113	119	122	24
3/24	---	---	---	0	107	107	107	9	---	---	---	0	102	103	104	23	107	107	107	24	108	109	110	24
3/25	---	---	---	0	107	107	107	21	---	---	---	0	103	104	105	24	107	107	107	24	111	115	121	24
3/26	---	---	---	0	---	---	---	0	---	---	---	0	102	103	103	24	106	106	107	24	110	114	121	24
3/27	---	---	---	0	---	---	---	0	---	---	---	0	102	102	103	24	105	106	106	24	115	122	124	24
3/28	---	---	---	0	107	107	111	10	---	---	---	0	103	104	104	24	104	104	105	24	114	121	122	24
3/29	---	---	---	0	112	112	113	24	106	106	106	8	104	104	104	24	106	106	106	24	107	107	110	24
3/30	---	---	---	0	112	113	113	24	106	107	107	24	104	104	105	24	107	107	107	24	107	107	110	24
3/31	---	---	---	0	113	113	113	7	107	107	108	16	104	105	107	16	107	107	107	16	107	107	107	16
4/1	---	---	---	0	112	112	113	23	107	108	108	24	104	106	107	24	105	105	105	24	105	106	106	24

Total Dissolved Gas Saturation (%) - Average of 12 Highest Hours, 24 h Average and 24 h High[2]

Total Dissolved Gas Saturation Data at Snake Sites

	Little Goose				Tlwtr L. Goose				Lower Mon.				Tlwtr L. Mon				Ice Harbor				Tlwtr Ice Harbor			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
3/19	105	105	107	24	105	106	109	21	104	104	105	24	---	---	---	0	104	104	106	24	111	111	112	24
3/20	105	106	106	24	106	106	110	22	107	107	108	24	---	---	---	0	105	106	107	24	109	110	110	24
3/21	105	106	106	24	110	110	113	11	105	106	107	24	---	---	---	0	105	105	106	24	111	113	114	24
3/22	106	106	107	24	117	118	141	16	106	107	110	24	---	---	---	0	106	106	107	24	113	114	115	24
3/23	107	108	109	24	120	122	123	24	113	115	117	24	---	---	---	0	106	107	107	24	113	115	116	24
3/24	111	113	115	24	118	120	122	24	117	120	122	24	---	---	---	0	111	112	113	24	114	115	115	24
3/25	113	115	117	24	119	121	122	24	120	121	122	24	118	119	120	24	115	116	117	24	112	113	114	24
3/26	108	109	111	24	119	120	123	24	115	117	118	24	114	115	116	24	116	117	117	24	112	113	114	24
3/27	106	108	109	24	117	117	117	24	116	117	118	24	113	113	113	24	111	111	113	24	113	113	113	24
3/28	106	107	109	24	116	117	117	24	114	114	115	24	111	111	112	24	112	112	114	24	113	114	114	24
3/29	113	115	116	24	117	118	120	24	115	115	116	24	113	113	114	24	113	113	114	24	113	113	114	24
3/30	113	115	116	24	118	120	124	24	114	115	117	24	112	112	113	24	112	112	113	18	111	112	112	23
3/31	108	108	110	16	113	113	114	16	115	115	117	9	113	113	114	16	112	112	113	14	111	111	112	16
4/1	105	106	107	24	105	106	107	24	113	116	118	24	111	112	113	24	112	112	113	19	110	110	111	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	McNary-Oregon				McNary-Wash.				Tlwtr McNary				John Day				Tlwtr John Day				The Dalles			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
3/19	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/20	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/21	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0	---	---	---	0
3/22	106	106	107	24	105	105	106	24	113	114	115	24	---	---	---	0	---	---	---	0	---	---	---	0
3/23	106	107	108	24	106	107	108	24	115	117	118	24	---	---	---	0	---	---	---	0	---	---	---	0
3/24	108	109	109	24	106	107	107	24	116	118	120	24	---	---	---	0	---	---	---	0	---	---	---	0
3/25	108	108	108	7	106	106	106	7	113	113	114	7	---	---	---	0	107	107	107	13	---	---	---	0
3/26	108	108	108	24	104	105	106	24	116	116	118	24	---	---	---	0	106	106	106	24	---	---	---	0
3/27	106	107	108	24	103	103	104	24	117	118	118	24	---	---	---	0	109	112	115	23	---	---	---	0
3/28	105	106	106	24	102	103	103	24	118	118	118	24	---	---	---	0	115	116	117	24	---	---	---	0
3/29	106	107	107	24	103	104	104	24	118	119	120	24	---	---	---	0	111	113	115	24	---	---	---	0
3/30	108	108	109	24	104	104	104	24	117	118	118	24	---	---	---	0	114	114	120	24	---	---	---	0
3/31	108	108	108	14	103	104	104	16	118	118	118	15	107	108	108	24	115	116	118	24	106	106	106	15
4/1	---	---	---	0	103	103	103	18	113	114	117	23	108	108	108	21	108	109	115	23	106	106	107	24

Total Dissolved Gas Saturation Data at Lower Columbia Sites

	Dnstr T. Dalles				Bonneville				Warrendale				Skamania				Camas\Wash.				Wauna Mill			
Date	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr	24 h Avg	12 h Avg	High	# hr
3/19	---	---	---	0	103	103	104	24	115	115	116	24	119	121	122	24	109	111	115	19	---	---	---	0
3/20	---	---	---	0	103	104	104	24	114	115	115	24	120	122	122	24	117	118	119	23	---	---	---	0
3/21	---	---	---	0	103	103	104	24	113	114	114	24	120	120	121	24	117	118	119	23	---	---	---	0
3/22	---	---	---	0	104	104	105	24	113	114	114	24	120	121	121	24	116	117	118	23	---	---	---	0
3/23	---	---	---	0	106	106	107	24	114	114	115	24	118	119	120	24	116	117	117	23	---	---	---	0
3/24	---	---	---	0	107	107	108	24	115	115	116	24	118	118	119	24	116	116	117	23	---	---	---	0
3/25	---	---	---	0	107	108	109	24	114	115	115	24	117	117	118	24	116	116	117	23	---	---	---	0
3/26	---	---	---	0	107	107	108	24	113	114	114	24	112	115	117	24	114	115	115	24	---	---	---	0
3/27	---	---	---	0	105	106	106	24	112	113	114	24	111	113	115	24	110	112	114	24	---	---	---	0
3/28	---	---	---	0	106	107	108	24	114	115	115	24	112	113	114	24	111	113	114	23	---	---	---	0
3/29	---	---	---	0	108	108	108	24	113	114	115	24	110	111	112	24	111	111	111	23	---	---	---	0
3/30	109	110	113	23	108	109	110	24	113	114	116	24	111	111	112	24	111	113	114	23	---	---	---	0
3/31	109	110	114	24	107	108	109	24	112	113	113	24	109	110	110	24	110	110	111	24	---	---	---	0
4/1	108	109	109	23	106	107	107	24	112	112	113	24	109	110	110	24	110	111	112	23	---	---	---	0

Two-Week Summary of Passage Indices

Yearling Chinook

	Hatchery							Hatchery/Wild Combined			
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	361	335	209	19	---	---	---	---	---	---	0
03/20/99	812	140	---	---	---	---	---	---	---	---	292
03/21/99	1,688	0	---	---	---	---	---	---	---	---	120
03/22/99	2,396	81	202	45	---	---	---	---	---	---	386
03/23/99	2,600	325	123	49	---	---	---	---	---	---	427
03/24/99	941	345	64	32	---	---	---	---	---	---	417
03/25/99	548	138	61	48	---	---	---	---	---	---	339
03/26/99	---	0	42	32	404	---	---	---	---	---	409
03/27/99	---	---	---	---	679	---	---	---	---	---	255
03/28/99	---	134	---	---	509	---	---	---	---	---	534
03/29/99	195	45	87	16	1,086	---	---	---	---	---	535
03/30/99	---	20	66	---	1,042	---	---	---	910	---	493
03/31/99	659	56	48	27	1,450	---	---	---	1,955	---	634
04/01/99	273	---	195	15	1,333	---	---	7	2,783	---	853
Total:	10,473	1,619	1,097	283	6,503	0	0	7	5,648	0	5,694
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	1,047	135	110	31	929	0	0	7	1,883	0	407

Wild Yearling Chinook

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
03/19/99	135	42	40	4	---	---	---
03/20/99	125	55	---	---	---	---	---
03/21/99	140	0	---	---	---	---	---
03/22/99	274	19	16	54	---	---	---
03/23/99	382	83	37	94	---	---	---
03/24/99	349	103	25	77	---	---	---
03/25/99	254	47	37	100	---	---	---
03/26/99	---	0	25	86	231	---	---
03/27/99	---	---	---	---	393	---	---
03/28/99	---	224	---	---	1,123	---	---
03/29/99	47	75	11	38	2,320	---	---
03/30/99	---	52	38	---	3,095	---	---
03/31/99	150	198	25	54	3,190	---	---
04/01/99	128	---	35	37	4,417	---	---
Total:	1,984	898	289	544	14,769	0	0
# Days:	10	12	10	9	7	0	0
Average:	198	75	29	60	2,110	0	0

Wild Subyearling Chinook

Date	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)
03/19/99	---	---	---
03/20/99	---	---	---
03/21/99	---	---	---
03/22/99	---	---	---
03/23/99	---	---	---
03/24/99	---	---	---
03/25/99	---	---	---
03/26/99	0	---	---
03/27/99	0	---	---
03/28/99	0	---	---
03/29/99	13	---	---
03/30/99	0	---	---
03/31/99	0	---	---
04/01/99	83	---	---
Total:	96	0	0
# Days:	7	0	0
Average:	14	0	0

The data presented in the following passage index section is preliminary and has been derived from various sources. For verification and/or origin of data, contact the operators of the Fish Passage Data System at (503) 230-4099.

Smolt indices, wild & hatchery 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 sampling system. Collection counts may be constrained due to sampling effort or river flow. 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 hour period that spans two calendar days. In this report, the date shown corresponds with the sample end date.

Two-Week Summary of Passage Indices

	Hatchery Subyearling Chinook							Combined Subyearling Chinook			
Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	0	0	0	---	---	---	---	---	270,179
03/20/99	0	0	---	---	---	---	---	---	---	---	18,237
03/21/99	0	0	---	---	0	---	---	---	---	---	18,197
03/22/99	0	0	0	0	---	---	---	---	---	---	5,315
03/23/99	0	0	0	0	---	---	---	---	---	---	1,355
03/24/99	0	0	0	0	0	---	---	---	---	---	1,197
03/25/99	0	0	0	0	---	---	---	---	---	---	394
03/26/99	---	0	0	0	0	---	---	---	---	---	177
03/27/99	---	---	---	---	0	---	---	---	---	---	184
03/28/99	---	0	---	---	0	---	---	---	---	---	445
03/29/99	0	0	0	0	0	---	---	---	---	---	229
03/30/99	---	0	0	---	0	---	---	---	539	---	299
03/31/99	0	0	0	0	0	---	---	---	1,919	---	86
04/01/99	0	---	0	0	0	---	---	4	2,088	---	96
Total:	0	0	0	0	0	0	0	4	4,546	0	316,390
# Days:	10	12	10	9	10	0	0	1	3	0	14
Average:	0	0	0	0	0	0	0	4	1,515	0	22,599

All Coho

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	0	0	---	---	---	---	---	---	0
03/20/99	0	0	---	---	---	---	---	---	---	---	0
03/21/99	0	0	---	---	---	---	---	---	---	---	0
03/22/99	0	0	0	0	---	---	---	---	---	---	0
03/23/99	0	0	0	0	---	---	---	---	---	---	0
03/24/99	0	0	0	0	---	---	---	---	---	---	0
03/25/99	0	0	0	0	---	---	---	---	---	---	14
03/26/99	---	0	0	0	12	---	---	---	---	---	0
03/27/99	---	---	---	---	12	---	---	---	---	---	0
03/28/99	---	0	---	---	0	---	---	---	---	---	0
03/29/99	0	0	0	0	107	---	---	---	---	---	0
03/30/99	---	0	0	---	61	---	---	---	0	---	0
03/31/99	0	0	0	0	10	---	---	---	0	---	43
04/01/99	0	---	0	0	0	---	---	0	0	---	124
Total:	0	0	0	0	202	0	0	0	0	0	181
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	0	0	0	0	29	0	0	0	0	0	13

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) }

Two-Week Summary of Passage Indices

Hatchery Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	0	0	---	---	---	---	---	---	0
03/20/99	0	0	---	---	---	---	---	---	---	---	0
03/21/99	0	0	---	---	---	---	---	---	---	---	0
03/22/99	0	0	1	0	---	---	---	---	---	---	0
03/23/99	0	0	0	0	---	---	---	---	---	---	0
03/24/99	0	0	0	0	---	---	---	---	---	---	0
03/25/99	0	0	1	0	---	---	---	---	---	---	0
03/26/99	---	0	0	1	35	---	---	---	---	---	0
03/27/99	---	---	---	---	155	---	---	---	---	---	0
03/28/99	---	0	---	---	763	---	---	---	---	---	0
03/29/99	0	0	1	2	965	---	---	---	---	---	31
03/30/99	---	0	0	---	1,420	---	---	---	11,599	---	90
03/31/99	0	0	0	6	1,930	---	---	---	19,787	---	288
04/01/99	0	---	0	4	1,800	---	---	1	16,227	---	440
Total:	0	0	3	13	7,068	0	0	1	47,613	0	849
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	0	0	0	1	1,010	0	0	1	15,871	0	61

Wild Steelhead

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	1	0	---	---	---	---	---	---	0
03/20/99	0	0	---	---	---	---	---	---	---	---	13
03/21/99	0	0	---	---	---	---	---	---	---	---	12
03/22/99	0	1	17	0	---	---	---	---	---	---	12
03/23/99	6	2	7	3	---	---	---	---	---	---	0
03/24/99	0	4	10	1	---	---	---	---	---	---	28
03/25/99	0	4	9	0	---	---	---	---	---	---	14
03/26/99	---	0	31	6	243	---	---	---	---	---	14
03/27/99	---	---	---	---	214	---	---	---	---	---	42
03/28/99	---	16	---	---	793	---	---	---	---	---	44
03/29/99	1	5	17	4	1,220	---	---	---	---	---	92
03/30/99	---	1	0	---	1,318	---	---	---	135	---	90
03/31/99	0	6	5	1	1,150	---	---	---	132	---	101
04/01/99	0	---	2	1	1,283	---	---	3	569	---	110
Total:	7	39	99	16	6,221	0	0	3	836	0	572
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	1	3	10	2	889	0	0	3	279	0	41

Definitions for Smolt Index Counts.

RIS (Index) = Rock Island Dam Second Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 2 Flow / (Powerhouses 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) }

BO1 (Index)= Bonneville Dam First Powerhouse Bypass Trap : Passage Index Counts : Passage Index = Collection Counts / {Powerhouse 1 Flow / (Powerhouses 1 & 2 +Flow + Spill)}

Two-Week Summary of Passage Indi-

Hatchery Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	0	0	---	---	---	---	---	---	0
03/20/99	0	0	---	---	---	---	---	---	---	---	0
03/21/99	0	0	---	---	---	---	---	---	---	---	0
03/22/99	0	0	0	1	---	---	---	---	---	---	0
03/23/99	0	0	0	0	---	---	---	---	---	---	0
03/24/99	0	0	0	0	---	---	---	---	---	---	0
03/25/99	0	0	0	0	---	---	---	---	---	---	0
03/26/99	---	0	0	0	0	---	---	---	---	---	0
03/27/99	---	---	---	---	0	---	---	---	---	---	0
03/28/99	---	0	---	---	0	---	---	---	---	---	0
03/29/99	0	0	0	0	0	---	---	---	---	---	0
03/30/99	---	0	0	---	0	---	---	---	0	---	0
03/31/99	0	0	0	0	0	---	---	---	0	---	0
04/01/99	0	---	0	0	0	---	---	0	0	---	0
Total:	0	0	0	1	0	0	0	0	0	0	0
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	0	0	0	0	0	0	0	0	0	0	0

Wild Sockeye

Date	WTB (Coll)	IMN (Coll)	GRN (Coll)	LEW (Coll)	LGR (INDEX)	LGS (INDEX)	LMN (INDEX)	RIS (INDEX)	MCN (INDEX)	JDA (INDEX)	BO1 (INDEX)
03/19/99	0	0	0	0	---	---	---	---	---	---	0
03/20/99	0	0	---	---	---	---	---	---	---	---	0
03/21/99	0	0	---	---	---	---	---	---	---	---	0
03/22/99	0	0	0	0	---	---	---	---	---	---	12
03/23/99	0	0	0	0	---	---	---	---	---	---	12
03/24/99	0	0	0	0	---	---	---	---	---	---	14
03/25/99	0	0	0	0	---	---	---	---	---	---	27
03/26/99	---	0	0	1	81	---	---	---	---	---	41
03/27/99	---	---	---	---	36	---	---	---	---	---	14
03/28/99	---	0	---	---	210	---	---	---	---	---	0
03/29/99	0	0	0	0	201	---	---	---	---	---	15
03/30/99	---	0	0	---	235	---	---	---	0	---	0
03/31/99	0	0	0	0	170	---	---	---	0	---	0
04/01/99	0	---	0	0	233	---	---	0	127	---	28
Total:	0	0	0	1	1,166	0	0	0	127	0	163
# Days:	10	12	10	9	7	0	0	1	3	0	14
Average:	0	0	0	0	167	0	0	0	42	0	12

LEW and WTB data collected for the FPC by Idaho Dept. of Fish and Game.
JDA and BO1 data collected for the FPC by National Marine Fisheries Service.
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 April 1, 1999

	Spring Chinook						Summer Chinook						Fall Chinook					
	1999		1998		10-Yr Avg.		1999		1998		10-Yr Avg.		1999		1998		10-Yr Avg.	
DAM	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	110	1	261	0	422	1	0	0	0	0	0	0	0	0	0	0	0	0
TDA	1	0	13	0	59	0	0	0	0	0	0	0	0	0	0	0	0	0
JDA	1	0	11	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0
MCN	0	0	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
IHR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LMN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LGS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LWG	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRD	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RIS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RRH	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WEL	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

	Coho						Sockeye			Steelhead				
	1999		1998		10-Yr Avg.				10-Yr			10-Yr	Wild	Wild
DAM	Adult	Jack	Adult	Jack	Adult	Jack	1999	1998	Avg.	1999	1998	Avg.	1999	1998
BON	0	0	0	0	0	0	0	0	0	295	452	619	7	70
TDA	0	0	0	0	0	0	0	0	0	14	11	217	6	19
JDA	0	0	0	0	0	0	0	0	0	**169	163	136	**	0
MCN	0	0	0	0	0	0	0	0	0	7	126	146	0	28
IHR	0	0	0	0	0	0	0	0	0	56	140	167	0	35
LMN	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LGS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LWG	0	0	0	0	0	0	0	0	0	1,906	2,268	2,139	114	238
PRD	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RIS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
RRH	---	---	---	---	---	---	---	---	---	---	---	---	---	---
WEL	---	---	---	---	---	---	---	---	---	---	---	---	---	---

*** Bonneville and Lower Granite are through 03/30/99, MCN, IHR, TDA, JDA are through 04/01/99.**

** JDA Steelhead - 169 total, H vs W not available.

*Since adult counts are not being updated daily by The Corp of Engineers, there is no data yet for LMN, LGS.

*PRD, RIS, RRH, & WEL are not yet collecting data.

*Bonneville and Lower Granite are doing video counts only until April 1, 1999. These counts are the 8 hour daytime video counts.

*Adult count records at Little Goose Dam have been maintained since 1991, visual counts were not conducted at Little Goose Dam between 1982 and 1990.

*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.

*NOTE: PRD, RIS, and RRH, are not reporting Wild Steelhead numbers.

*No Video counts at Lower Granite Dam on 3/1/99 and 3/2/99.

*From 3/3/99 to 3/31/99 at Lower Granite Dam counts will be from 8:00 AM to 4:00 PM.

Transportation Summary Report
Two-Week Transportation Summary
from 03/19/99 to 04/01/99

	Yearling Chinook	Subyearling Chinook	Steelhead	Coho	Sockeye	Total
LOWER GRANITE DAM						
Collected	19,520	93	12,063	170	1,023	32,869
Bypassed	487	0	265	0	0	752
Trucked	13,289	10	8,752	167	714	22,932
Barged	0	0	0	0	0	0
Total Transported	**13,289**	**10**	**8,752**	**167**	**714**	**22,932**
LITTLE GOOSE DAM						
Collected	0	0	0	0	0	0
Bypassed	0	0	0	0	0	0
Trucked	0	0	0	0	0	0
Barged	0	0	0	0	0	0
Total Transported	**0**	**0**	**0**	**0**	**0**	**0**
LOWER MONUMENTAL DAM						
Collected	0	0	0	0	0	0
Bypassed	0	0	0	0	0	0
Trucked	0	0	0	0	0	0
Barged	0	0	0	0	0	0
Total Transported	**0**	**0**	**0**	**0**	**0**	**0**
MCNARY DAM						
Collected	3,482	2,800	29,623	0	80	35,985
Bypassed	3,573	2,796	23,200	0	40	29,609
Trucked	0	0	0	0	0	0
Barged	0	0	0	0	0	0
Total Transported	**0**	**0**	**0**	**0**	**0**	**0**
PROJECT TOTALS						
Collected	23,002	2,893	41,686	170	1,103	68,854
Bypassed	4,060	2,796	23,465	0	40	30,361
Trucked	13,289	10	8,752	167	714	22,932
Barged	0	0	0	0	0	0
Total Transported	**13,289**	**10**	**8,752**	**167**	**714**	**22,932**

Note: This table represents both the Two-week Summary and Cummulative Transportation Summary