

Fish Passage Center

### Weekly Report #03 - 30

October 31, 2003

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

NOTE: This is our last report for the season. The weekly reports will resume in March 2004.

#### **Summary of Events:**

**Water Supply:** Over the first twenty-seven days of WY 2004, precipitation has varied between 6% and 166% of average at the listed sites. Through October 27th, 2003, precipitation for the Columbia above The Dalles has averaged 121% of average.

Table 1. Summary WY 2003 precipitation and WY 2004 cumulative October precipitation with respect to average (1971-2000), at select locations within the Columbia and Snake River Basins.

	Water Ye	ar 2003	Water Year 2004				
	Tota	als	Totals				
	October 1	, 2002 to	October 1, 2003 to				
	September	30, 2003	October 27, 2003				
	Observed	%	Observed	%			
Location	(inches)	Average	(inches)	Average			
Columbia Above	20.53	80	2.26	140			
Coulee							
Snake River	16.04	89	0.31	29			
Above Ice Harbor							
Columbia Above	19.98	85	1.75	121			
The Dalles							
Kootenai	19.34	74	2.68	166			
Clark Fork	14.99	84	0.62	61			
Flathead	17.49	74	1.20	82			
Pend	28.04	89	1.74	93			
Oreille/Spokane							
Central	8.76	96	0.27	50			
Washington							
Snake River Plain	8.15	70	0.04	6			
Salmon/Boise/	19.00	94	0.31	29			
Payette							
Clearwater	30.02	96	1.02	54			
SW Washington	59.29	83	6.93	144			
Cascades/Cowlitz							
Willamette	53.40	89	2.76	74			
Valley							

Libby Reservoir is currently at an elevation of 2436.5 feet. Due to increased inflows, Libby has been able to refill 3.2 feet in the last ten days. Outflows over the past ten days have ranged between 4.0 and 4.6 Kcfs.

Hungry Horse Reservoir is at an elevation of 3532.0 feet and has held approximately steady over the past ten days. Outflows have gradually decreased and are currently 1.0 Kcfs.

Albeni Falls is currently at an elevation of 2055 feet. A final decision has been made to draft Albeni Falls to elevation 2051 feet by mid-November. To accommodate this draft, the COE plans to increase outflows from approximately 18.5 Kcfs to 26 Kcfs on Friday October 31st, 2003.

Dworshak Reservoir is currently at an elevation of 1516.0 feet, and has drafted 0.2 feet in the last week. Dworshak is currently at an outflow of 1.6 Kcfs.

Grand Coulee Reservoir ended October 30th at an elevation of 1288.0 feet. Outflows over the last week have ranged between a day average of 56.4 and 108.0 Kcfs.

Brownlee Reservoir was at an elevation of 2044.3 on October 30th, refilling 2.1 feet in the last week. Outflows at Brownlee have been fluctuating between 6.2 and 11.0 Kcfs over the week. Fall chinook spawning outflows at Hells Canvon have been 8.5 Kcfs over the last week.

SOR 2003-15 has been submitted to the Action Agencies and asks for an instantaneous tailwater elevation of 11.5 feet at Bonneville Dam from November 1, 2003 until further notice to protect the natural spawning of chum and fall chinook salmon at the Ives/Pierce Island Complex, Multnomah Falls, and partly influence the I-205 seeps. At the October 30th TMT, BPA proposed that they start the Bonneville tailwater

operation next Monday (11-3-03), and then maintain a daytime minimum Tailwater of 11.2 feet and maximum tailwater of 11.5 feet. BPA wanted to be able to go above 11.5 feet at night, but said that 11.2 feet would be the 24-hr minimum. After some debate, this proposal was accepted, however the issue will be revisited next Wednesday when more chum spawning information is available.

Smolt Monitoring: With three sampling sites operating until the end of October, there continue to be detections of subyearling chinook moving through the system, while very few other salmonids have been seen. At Lower Granite Dam the average daily index for subyearling chinook decreased from 560 last week to 200 per day this week, with a relatively large daily count of 769 on October 19. At Little Goose Dam the numbers held relatively steady but low, with an average index of 59 this week compared to 60 last week. In the Lower Columbia, at Bonneville Dam, the average daily index for subyearling chinook was at 170 this week compared to 40 last week, with the highest daily value of 496 on October 24.

Hatchery Releases - The preliminary total of juvenile salmonids released from Columbia River Basin hatcheries above Bonneville Dam for the 2003 migration season is an estimated 87.3 million. A few supplemental and planned releases of spring/summer chinook were completed this fall season and are primarily considered as 2004 migrants from the hatcheries located above Bonneville Dam. The lower table also includes numbers of fish released from hatcheries located below Bonneville Dam such as the Willamette River facilities, the Cowlitz River facilities, etc. Other late fall releases will be completed in hatcheries below Bonneville Dam so those numbers will be increasing for the year.

	1												
Hatchery													
Zone		Friday 31-0	ctober-2003										
Release	Friday 31-October-2003												
Report													
	Snake	Mid-	Lower	Total									
	River	Columbia	Columbia	Release									
Fall													
Chinook	4,091,433	12,255,089	25,446,818	41,793,340									
Spring													
Chinook	10,473,976	3,474,730	5,441,505	19,390,211									
Summer													
Chinook	2,332,578	3,001,618		5,334,196									
Coho	1,248,216	1,876,158	5,732,260	8,856,634									
Cono	1,240,210	1,070,130	3,732,200	0,030,034									
Sockeye	140,410	208,986		349,396									
Summer													
Steelhead	9,687,941	1,344,613	490,667	11,523,221									
Winter													
Steelhead			94,900	94,900									
Total	27,974,554	22,161,194	37,206,150	87,341,898									

	Friday	31-Oct-2003			
		Mid-	Lower	Below	Total
	Snake River	Columbia	Columbia	Bonneville	Release
Fall					
Chinook	4,091,433	12,255,089	25,531,002	28,664,438	70,541,962
Spring					
Chinook	10,473,976	3,474,730	5,441,505	8,959,730	28,349,941
Summer					
Chinook	2,332,578	3,001,618			5,334,196
Chum				398,000	398,000
Coho	1,248,216	1,876,158	5,732,260	15,100,125	23,956,759
Sockeye	155,410	208,986			364,396
Summer					
Steelhead	9,687,941	1,344,613	490,667	1,358,987	12,882,208
Winter					
Steelhead			94,900	1,404,520	1,499,420
Total	27,989,554	22,161,194	37,290,334	55,692,985	143,134,067

Adult Fish Passage - Adult counting for the 2003 season will end at most COE projects on October 31st with exception of Bonneville Dam (ends November 15) and Lower Granite Dam (ends December 15). The PUD projects normally count through November 15.

At Bonneville Dam, numbers of adult fall chinook ranged between 200 and 400 through the week ending October 30th. The cumulative count through October 30 was 607,495; this total is about 129% and 256% of the respective 2002 and 10-year average. Overall, 47,521 Jack fall chinook

(Tule and Up-River Bright stocks) have been counted to date; this total was 118% and 133% of the respective 2002 and 10-year average counts for the 2003 season.

Upriver bright fall chinook counts at The Dalles Dam ranged from 150 to 470 for the week while upstream at McNary Dam, chinook counts ranged between 74 and 300. The cumulative count at McNary Dam was 178,880 through October 30. At Priest Rapids Dam, adult fall chinook counts ranged between 20 and 700 with the cumulative total being 46,556 through October 29. At Ice Harbor Dam, the counts have fallen to 50 or fewer per day with the cumulative count at 20,935 though October 30. Adult fall chinook counts at both Priest Rapids and Ice Harbor dams exceed the 2002 and 10-year averages for the 2003 season.

Numbers of steelhead at Bonneville Dam ranged between 200 and 300 for the week. The cumulative count through October 30 was 358,075 and compares to 478,745 in 2002 and 278,729 for the 10-year average. The percent passage of adult steelhead counted at Bonneville Dam and counted upstream at The Dalles Dam is now at 76.1%; the steelhead count at The Dalles Dam through October 30 was 272,541. At McNary Dam, daily counts of adult steelhead ranged from 400 to 1,500 with the cumulative total now at 229,424. Steelhead counts up the Mid-Columbia were normally less than 40 per day at Priest Rapids Dam with steelhead passage into the Snake River ranging from 300 to 1,500 per day. The cumulative count for Priest Rapids Dam was 17,363 through October 29 with Ice Harbor at 185,969 through October 30.

At Bonneville Dam, adult coho counts ranged from 200-400 for the week with the cumulative count through October 30 at 125,275. This total was 146% and 211% of the 2002 and the 10-year average, respectively. About 42,500 of these fish have passed The Dalles Dam and will be destined for upstream sites in the Mid-Columbia area, the Yakama River basin, the Umatilla River basin and the Clearwater River basin. The majority of coho salmon returning to the Bonneville pool are destined for the Little White Salmon and Klickitat rivers.

When the 2003 passage season is completed, most projects will have record or near record counts for spring, summer and fall chinook. This upward trend of adult returning salmon to the Columbia River has allowed for sport and commercial fisheries for the spring, summer, and fall returns of chinook salmon. The steelhead returns remain strong for the hatchery component of the run with sport fishery in most areas and tribal fishery in Zone 6. As well, coho salmon passage at Bonneville Dam was greater than 100,000 for the year with about 1/3 of the total counted above The Dalles. Most of the chinook, coho, and steelhead returns to the Columbia River basin were "upbeat" from the 1990s. Sockeye returns to the Snake River was poor with only 12 adult sockeye counted at Lower Granite Dam. The Mid-Columbia sockeye returns were below the 2002 and 10-year average for the 2003 season at Priest Rapids and Rock Island dams; however, the passage of adult sockeye counted at Wells Dam was greater than the 2002 and 10-year average indicating the Lake Osoyoos return of Sockeye Salmon was fairly strong while the Lake Wenatchee return of Sockeye Salmon was well below average in 2003.

	Gr	and	Chi	ef	Rocky				Ro	ck			Priest	
	Co	ulee	Jose	ph	We	Wells		Reach		nd	Wanapum		Rapids	
Date	Flow	Spill	Flow	Spill	Flow	Spill								
10/17/03	65.2	0.0	67.5	0.0	66.7	0.0	70.2	0.0	72.0	0.0	80.4	0.6	79.6	0.8
10/18/03	49.6	0.0	51.5	0.0	50.7	0.0	52.8	0.0	57.0	0.0	58.7	0.6	61.9	0.6
10/19/03	48.5	0.0	48.9	0.0	50.4	0.0	49.9	0.0	52.2	0.0	64.1	0.6	64.4	0.5
10/20/03	75.2	0.0	76.3	0.0	77.9	0.0	78.4	0.0	80.2	0.0	71.9	0.6	61.2	0.5
10/21/03	84.6	0.0	81.7	0.0	84.8	0.0	92.8	0.0	99.2	0.0	67.4	1.1	62.7	0.7
10/22/03	73.7	0.0	76.5	0.0	80.0	0.2	88.3	0.0	98.4	0.0	97.9	3.8	88.6	1.0
10/23/03	79.0	0.0	79.0	0.0	88.8	0.0	97.1	0.0	100.6	0.0	109.1	1.9	110.2	1.1
10/24/03	86.9	0.0	90.9	0.0	87.0	7.9	96.8	0.0	99.9	0.0	109.1	2.0	107.6	1.0
10/25/03	65.3	0.0	65.5	0.0	71.5	0.0	75.9	0.0	79.4	0.0	108.1	1.6	110.0	1.0
10/26/03	56.4	0.0	54.5	0.0	54.9	0.0	55.5	0.0	59.2	0.0	75.3	0.9	78.9	0.4
10/27/03	97.6	0.0	100.4	0.0	105.1	0.0	108.5	0.0	109.3	0.0	100.4	1.0	93.3	0.6
10/28/03	96.0	0.0	95.9	0.0	95.7	0.0	97.9	0.0	98.9	0.0	105.7	0.7	108.1	0.8
10/29/03	84.8	0.0	90.8	0.0	92.5	1.5	91.5	0.0	93.8	0.0	102.9	8.0	105.2	0.6
10/30/03	108.0	0.0	102.9	0.0	100.9	0.0	104.6	0.0	108.1	0.0	98.4	1.1	93.9	0.8

	Daily	Average	Flow and	Spill	(in kcfs)	) at Snake	<b>Basin Pro</b>	iects
--	-------	---------	----------	-------	-----------	------------	------------------	-------

				Hells	Lower		Li	ttle	Lov	ver	Ice		
	Dwo	rshak	Brownlee	Canyon	Gra	Granite		Goose		ental	Ha	rbor	
Date	Flow	Spill	Inflow	Outflow	Flow	Spill	Flow	Spill	Flow	Spill	Flow	Spill	
10/17/03	1.6	0.0	11.0	8.5	15.8	3.3	15.0	0.0	15.3	0.0	14.9	0.0	
10/18/03	1.6	0.0	10.8	8.5	14.4	0.0	14.7	0.0	15.9	0.0	14.7	0.0	
10/19/03	1.6	0.0	10.4	8.5	14.5	0.0	13.7	0.0	14.2	0.0	12.6	0.0	
10/20/03	1.6	0.0	10.5	8.5	16.3	0.0	16.0	0.0	16.2	0.0	17.8	0.0	
10/21/03	1.5	0.0	9.8	8.5	15.1	0.0	16.4	0.0	16.5	0.0	15.7	0.0	
10/22/03	1.6	0.0	10.1	8.5	15.8	0.0	15.6	0.0	18.4	0.0	17.7	0.0	
10/23/03	1.6	0.0	10.8	8.5	14.8	0.0	15.4	0.0	15.9	0.0	14.5	0.0	
10/24/03	1.6	0.0	10.0	8.5	15.1	0.0	17.7	0.0	18.0	0.0	17.0	0.0	
10/25/03	1.6	0.0	9.4	8.5	13.6	0.0	14.5	0.0	14.1	0.0	12.5	0.0	
10/26/03	1.6	0.0	10.8	8.5	15.1	0.0	14.6	0.0	15.6	0.0	14.9	0.0	
10/27/03	1.6	0.0	10.0	8.5	14.3	0.0	13.5	0.0	13.9	0.0	14.4	0.0	
10/28/03	1.6	0.0	10.3	8.5	14.9	0.0	14.6	0.0	14.8	0.0	12.7	0.0	
10/29/03	1.6	0.0	9.0	8.5	14.7	0.0	14.2	0.0	15.2	0.0	15.9	0.0	
10/30/03	1.6	0.0			14.9	0.0	15.0	0.0	15.7	0.0	14.3	0.0	

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

	McI	Nary	John Day		The D	alles		Вс		
Date	Flow	Spill	Flow Spill		Flow	Flow Spill		Spill	PH1	PH2
10/17/03	96.2	0.0	97.9	0.0	102.0	0.0	111.4	2.4	14.1	88.2
10/18/03	85.5	0.0	80.2	0.0	87.7	0.0	87.6	2.4	1.6	76.9
10/19/03	66.3	0.0	65.5	0.0	70.9	0.0	81.1	2.4	0.0	72.0
10/20/03	87.4	0.0	87.1	0.0	92.6	0.0	96.7	2.4	8.9	78.7
10/21/03	91.2	0.0	87.0	0.0	91.4	0.0	102.2	2.3	8.9	84.3
10/22/03	100.0	0.0	92.3	0.0	95.9	0.0	103.6	2.4	10.7	83.8
10/23/03	121.4	0.0	115.4	0.0	119.0	0.0	106.6	2.4	14.7	82.8
10/24/03	138.0	0.0	130.0	0.0	132.5	1.3	133.8	2.4	23.9	100.8
10/25/03	133.7	0.0	127.9	0.0	132.6	0.0	135.4	2.7	24.9	101.0
10/26/03	117.8	0.0	116.8	0.0	124.0	0.0	131.9	2.1	24.2	98.8
10/27/03	98.9	0.0	104.8	0.0	111.6	0.0	125.4	2.3	25.2	91.2
10/28/03	115.0	0.0	110.8	0.0	111.7	0.0	117.8	2.4	20.6	88.1
10/29/03	124.7	0.0	119.1	0.0	127.6	0.0	121.0	2.3	30.3	81.8
10/30/03	118.5	0.0	123.1	0.0	128.2	0.0	132.2	2.5	29.7	93.2

#### HATCHERY RELEASE LAST TWO WEEKS

**Hatchery Release Summary** 

From: 10/17/03 to 10/30/03

Agency	Hatchery	Species	Race	MigYr	NumRel	RelStart	RelEnd	RelSite	RelRiver
U.S. Fish and Wildlife Service	Warm Springs NFH	CH1	SP	2004	45,500	10-08-03	11-13-03	Warm Springs Hatchery	Deschutes River
U.S. Fish and Wildlife Service Total					45,500				
Washington Dept. of Fish and Wildlife	Eastbank Hatchery	SO	UN	2004	112,426	10-22-03	10-22-03	Lake Wenatchee	Wenatchee River
Washington Dept. of Fish and Wildlif	e Total				112,426				
Grand Total					157,926				

#### HATCHERY RELEASE NEXT TWO WEEKS

**Hatchery Release Summary** 

From: 10/31/03 to 11/13/03

Agency Hatchery Species CH1 SP 2004 Mig/T NumRel RelStart RelEnd RelSite RelRiver
U.S. Fish and Wildlife Service Warm Springs NFH CH1 SP 2004 45,500 10-08-03 11-13-03 Warm Springs Hatchery Deschutes River
U.S. Fish and Wildlife Service Total 45,500 45,500 45,500

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

	Hung	ry H.	<u>Dnst</u>		Boun	dary			Grand	d Coul	<u>lee</u>		Gran	d C. T	lwr		Chief	Jose	<u>ph</u>	
	<u>24 h</u>	<u>12 h</u>		#	<u>24 h</u>	12 h		#	<u>24 h</u>	<u>12 h</u>		#	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>
<u>Date</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>
10/17				0	98	98	103	24	99	99	99	24	98	99	103	24				0
10/18				0	98	98	101	24	99	99	99	24	99	100	103	24				0
10/19				0	100	102	105	24	98	99	99	24	99	100	103	24				0
10/20 -				0	98	98	98	24	98	99	99	24	98	99	101	24				0
10/21 -				0	97	97	100	14	98	98	98	18	98	98	101	24				0
10/22 -				0	99	100	107	13	99	99	102	18	99	99	102	24				0
10/23 -				0	98	99	100	21	98	98	100	24	98	98	101	24				0
10/24 -				0	96	96	97	3	97	97	97	24	97	97	99	24				0
10/25 -				0				0	96	97	97	24	97	97	100	24				0
10/26 -				0				0	97	97	98	24	98	99	102	23				0
10/27 -				0	101	101	101	7	98	98	99	24	98	98	100	24				0
10/28 -				0	102	102	103	24	100	100	101	24	99	100	102	23				0
10/29 -				0	101	101	101	8	99	99	99	24	99	99	104	11				0
10/30				0	99	100	102	24	97	98	98	24	97	98	101	23				0

	Chief	J. Dr	<u>ıst</u>		Wells	<u> </u>			Wells	Dwns	strm		Rock	y Rea	<u>ch</u>		Rock	y R. T	lwr	
	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>
<u>Date</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>
10/17	<b>'</b>			0				0				0				0				0
10/18	3			0				0				0				0				0
10/19	)			0				0				0				0				0
10/20	)			0				0				0				0				0
10/21				0				0				0				0				0
10/22	2			0				0				0				0				0
10/23	3			0				0				0				0				0
10/24	ļ			0				0				0				0				0
10/25	5			0				0				0				0				0
10/26	·			0				0				0				0				0
10/27	<b>7</b>			0				0				0				0				0
10/28	}			0				0				0				0				0
10/29	)			0				0				0				0				0
10/30	)			0				0				0				0				0

Total Dissolved Gas Saturation at Mid Columbia River Sites

	Rock	<u>Islan</u>	<u>d</u>		Rock	I. TIW	<u>r</u>		<u>Wana</u>	<u>apum</u>			<u>Wana</u>	apum	<u>Tlwr</u>		<u>Pries</u>	t Rapi	<u>ds</u>	
	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	<u>12 h</u>		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>
<u>Date</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>	Avg	<u>High</u>	<u>hr</u>
10/17	<b>'</b>			0				0				0				0				0
10/18	3			0				0				0				0				0
10/19	)			0				0				0				0				0
10/20	)			0				0				0				0				0
10/21				0				0				0				0				0
10/22	2			0				0				0				0				0
10/23	3			0				0				0				0				0
10/24				0				0				0				0				0
10/25	5			0				0				0				0				0
10/26	·			0				0				0				0				0
10/27				0				0				0				0				0
10/28				0				0				0				0				0
10/29	)			0				0				0				0				0
10/30	)			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 Low	er Columbia and Snake River Site	25

	Pries	t R. D	nst		Pasco	<u> </u>			<u>Dwor</u>	<u>shak</u>			Clrw	r-Pec	<u>k</u>		Anato	one		
	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	<u>12 h</u>		#	<u>24 h</u>	12 h		#	<u>24 h</u>	12 h		#
Dat	e <u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>
10/	7			0	99	100	100	24	106	106	107	24				0				0
10/	8			0	100	101	101	24	106	107	108	24				0				0
10/	9			0	100	100	101	21	105	105	106	24				0				0
10/2	20			0	100	100	100	24	104	105	105	24				0				0
10/2	21			0	100	100	100	5	107	108	110					0				0
10/2	22			0				0	109	109	110	17				0				0
10/2	23			0	99	100	100	22	106	107	108	24				0				0
10/2	24			0	99	99	100	24	107	108	109	24				0				0
10/2	25			0	98	99	100	24	107	108	109	24				0				0
10/2	26			0	99	100	100	24	107	108	109	20				0				0
10/2	27			0	99	100	101	24	107	107	109	20				0				0
10/2	28			0	100	101	101	24	107	107	108	24				0				0
10/2	29			0	99	99	99	24	106	107	107	24				0				0
10/3	30			0	97	98	98	24	105	105	106	20				0				0

Total	Discolved	Cac	Saturation	Data at	Chaka	Divor	Citoo
ı otai	Dissolved	Gas	Saturation	Data at	Snake	River	Sites

	Clrw	tr-Lew	<u>iston</u>		Lowe	r Grar	<u>ite</u>		L. Gra	anite 1	<u>lwr</u>		Little	Goos	<u>se</u>		L. Go	ose T	<u>lwr</u>	
	<u>24 h</u>	<u>12 h</u>		#	<u>24 h</u>	12 h		#	<u>24 h</u>	12 h		#	<u>24 h</u>	12 h		#	<u>24 h</u>	<u>12 h</u>		<u>#</u>
Date	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>
10/1	7			0	96	96	96	15	106	110	116	16				0				0
10/18	3			0	96	96	96	24	96	96	97	23				0				0
10/19	9			0	95	95	96	12	95	96	96	18				0				0
10/20	)			0	96	96	96	24	96	96	97	_				0				0
10/2	1			0	96	97	98	18	97	98	105	18				0				0
10/22	2			0	97	98	99	21	97	97	97	21				0				0
10/23	3			0	96	96	97	19	95	96	96	23				0				0
10/24	4			0	95	95	95	17	96	96	97	24				0				0
10/2	5			0	96	96	96	13	95	96	96	20				0				0
10/26	S			0	96	97	97	24	96	96	97	24				0				0
10/27	7			0	97	98	98	24	97	97	98	24				0				0
10/28	3			0	98	99	99	24	98	99	100	22				0				0
10/29	9			0	98	98	98	24	98	98	99	24				0				0
10/30	)			0	97	97	98	24	97	97	98	24				0				0

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

Lov	<u>/er Mo</u>	<u>n.</u>		<u>L. Mc</u>	<u>n. Tlv</u>	<u>vr</u>		Ice Ha	<u>arbor</u>			Ice H	<u>arbor</u>	<u>Tlwr</u>		<u>McNa</u>	ry-Or	<u>egon</u>	
<u>24 l</u>	<u>12 h</u>	1	<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>
Date Ave	<u>Avg</u>	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<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>
10/17			0				0	96	96	96	24	98	99	99	24	98	99	100	24
10/18			0				0	96	97	98	24	98	99	100	24	99	100	101	24
10/19			0				0	96	96	97	24	98	98	99	24	99	100	101	24
10/20			0				0	96	97	97	24	98	98	99	24	99	100	101	24
10/21			0				0	97	97	98	17	98	99	99	18	99	100	102	18
10/22			0				0	99	100	102	21	99	99	100	21	99	100	101	21
10/23			0				0	96	96	97	24	97	97	98	24	98	98	99	24
10/24			0				0	95	96	96	24	97	97	98	24	98	98	99	24
10/25			0				0	95	95	95	1	97	97	98	24	97	98	99	24
10/26			0				0	96	96	96	7	97	98	99	24	98	98	99	24
10/27			0				0	95	95	96	17	98	98	99	24	99	99	100	24
10/28			0				0	97	98	98	22	99	100	101	24	100	100	101	24
10/29			0				0	96	96	97	19	98	99	99	24	99	100	100	24
10/30			0				0	97	97	97	24	97	98	98	24	98	99	99	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

	McNa	ry-Wa	<u>ish</u>		McNa	ry Tlw	<u>/r</u>		<u>John</u>	Day			<u>John</u>	Day 7	<u> Tlwr</u>		The I	Dalles		
	<u>24 h</u>	<u>12 h</u>		#	<u>24 h</u>	<u>12 h</u>		#	<u>24h</u>	<u>12h</u>		#	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
<u>Date</u>	<u>Avg</u>	Avg	<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>
10/17	98	98	98	24	98	98	98	24				0				0				0
10/18	100	100	101	24	99	99	99	24				0				0				0
10/19	99	100	101	24	99	99	100	24				0				0				0
10/20	99	100	100	24	98	99	100	24				0				0				0
10/21	99	99	99	5	98	99	99	18				0				0				0
10/22				0	99	100	100	21				0				0				0
10/23	98	98	99	24	97	98	98	24				0				0				0
10/24	98	98	99	24	97	97	98	24				0				0				0
10/25	98	98	98	24	97	97	97	24				0				0				0
10/26	98	99	99	24	97	98	98	24				0				0				0
10/27	98	99	99	24	98	98	99	24				0				0				0
10/28	100	101	101	24	100	101	101	24				0				0				0
10/29	100	100	100	24	100	100	100	24				0				0				0
10/30	98	99	99	24	99	99	100	24				0				0				0

|--|

	The I	Dalles	Dnst		Bonn	<u>eville</u>			Warre	endale	)		Cama	as\Wa	shugal	
	<u>24 h</u>	12 h		<u>#</u>	<u>24 h</u>	12 h		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>	<u>24h</u>	<u>12h</u>		<u>#</u>
<u>Date</u>	<u>Avg</u>	Avg	<u>High</u>	<u>hr</u>	<u>Avg</u>	Avg	<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>
10/17				0	99	100	100	23	100	101	101	23				0
10/18				0	100	100	100	23	100	101	102	23				0
10/19				0	99	99	100	23	100	100	101	23				0
10/20				0	99	99	99	23	100	100	101	23				0
10/21				0	99	99	100	16	99	99	99	7				0
10/22				0	100	100	100	23	100	100	101	16				0
10/23				0	99	99	99	23	99	100	100	23				0
10/24				0	98	98	98	23	98	99	99	23				0
10/25				0	98	98	98	24	98	98	99	24				0
10/26				0	98	98	99	24	98	99	99	24				0
10/27				0	98	99	99	24	99	99	99	24				0
10/28				0	99	100	100	24	100	100	101	24				0
10/29				0	99	99	100	24	99	100	100	23				0
10/30				0	98	98	99	24	98	98	99	24				0

#### Two-Week Summary of Passage Indices

				COMBIN	IED YEA	RLING C	HINOOK				
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
10/17/2003	-				3	0					0
10/18/2003	-				1	0					0
10/19/2003	-				4	0					0
10/20/2003	-				0	0					0
10/21/2003	-				0	0					0
10/22/2003	-				1	0					0
10/23/2003	-				0	0					0
10/24/2003	-				0	1					0
10/25/2003 *	-				0	0					0
10/26/2003 *	-				0	0					0
10/27/2003	-				0	0					0
10/28/2003	-				2	0					0
10/29/2003	-				0	0					0
10/30/2003	-					0					0
Total:		0 0	0	0	11	1	0	0	0	0	0
# Days:		0 0	0	0	13	14	0	0	0	0	14
Average:		0 0	0	0	1	0	0	0	0	0	0
YTD	32,06	4 34,028	11,123	2,417	3,599,252	2,483,150	785,335	15,355	1,624,087	2,074,671	4,043,776

		1			D 011D\/E		01 111 10 0	17			
			C	OMBINE	D SUBYE	:ARLING	CHINOO	K			
	WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
10/17/2003					520	91					123
10/18/2003					567	95					35
10/19/2003					769	46					31
10/20/2003					446	36					10
10/21/2003					481	29					23
10/22/2003					617	50					23
10/23/2003					505	74					29
10/24/2003					271	91					496
10/25/2003 *					211	41					272
10/26/2003 *					200	54					178
10/27/2003					209	22					114
10/28/2003					187	19					95
10/29/2003					141	108					36
10/30/2003						76					29
Total:	0	0	0	0	5,124	832	0	0	0	0	1,494
# Days:	0	0	0	0	13	14	0	0	0	0	14
Average:	0	0	0	0	394	59	0	0	0	0	107
YTD	1	118	74	355	1,412,756	685,573	341,254	28,113	7,682,087	2,713,873	7,903,755

<sup>\*</sup> See sampling comments <a href="http://www.fpc.org/currentDaily/smpcomments.htm">http://www.fpc.org/currentDaily/smpcomments.htm</a>

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**

					COMBINE						
	WTB	IMN	GRN	LEW	LGR	RIS	MCN	JDA	BO2		
Date	(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	LGS (INDEX)	LMN (INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
10/17/2003					0	0					0
10/18/2003					0	0					0
10/19/2003					1	0					0
10/20/2003					1	0					0
10/21/2003					0	0					0
10/22/2003					0	0					0
10/23/2003					0	1					0
10/24/2003					0	0					0
10/25/2003 *					1	0					25
10/26/2003 *					0	0					51
10/27/2003					0	0					25
10/28/2003					2	0					0
10/29/2003					2	0					0
10/30/2003						0					0
Total:	0	0	0	0	7	1	0	0	0	0	101
# Days:	0	0	0	0	13	14	0	0	0	0	14
Average:	0	0	0	0	1	0	0	0	0	0	7
YTD	0	0	0	17	132,925	116,668	37,604	41,690	113,584	258,282	2,116,570

					COMBINED STEELHEAD							
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)	(INDEX)
10/17/2003						10	1					0
10/18/2003						0	0					0
10/19/2003						3	1					0
10/20/2003						0	0					0
10/21/2003						1	0					0
10/22/2003						2	1					0
10/23/2003						1	2					0
10/24/2003						0	0					0
10/25/2003	*					0	2					0
10/26/2003	*					1	0					0
10/27/2003						2	0					13
10/28/2003						0	0					0
10/29/2003						1	0					0
10/30/2003							3					0
Total:		0	0	0	0	21	10	0	0	0	0	13
# Days:		0	0	0	0	13	14	0	0	0	0	14
Average:		0	0	0	0	2	1	0		0	0	1
YTD							15,507	245,523	553,522	1,635,181		

<sup>\*</sup> See sampling comments

#### Two-Week Summary of Passage Indices

					CC	MBINED						
		WTB	IMN	GRN	LEW	LGR	LGS	LMN	RIS	MCN	JDA	BO2
Date		(Coll)	(Coll)	(Coll)	(Coll)	(INDEX)						
10/17/2003						0	0					0
10/18/2003						0	0					0
10/19/2003						0	0					0
10/20/2003						1	0					0
10/21/2003						0	0					0
10/22/2003						0	0					0
10/23/2003						0	0					0
10/24/2003						0	0					6
10/25/2003	*					1	0					0
10/26/2003	*					0	0					0
10/27/2003						0	0					0
10/28/2003						1	0					0
10/29/2003						0	0					0
10/30/2003							0					0
Total:		0	0	0	0	3	0	0	0	0	0	6
# Days:		0	0	0	0	13	14	0	0	0	0	14
Average:		0	0	0	0	0	0	0	0	0	0	0
YTD		1	0	0	11	16,393	8,129	4,545	10,312	841,734	726,180	1,261,379

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

#### **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: 10/30

			Spring CI	hinook					Summer	Chinook					Fall Chir	nook		
	200	)3	200	12	10-Yr	10-Yr Avg.		03	200	)2	10-Yr	Avg.	200	)3	200	)2	10-Yr	Avg.
DAM	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack	Adult	Jack
BON	192,010	14,258	268,813	6,477	122,177	6,086	114,808	13,358	127,436	7,952	38,022	5,207	607,495	47,521	472,079	40,160	237,679	35,614
TDA	131,295	11,522	181,176	3,870	80,975	4,136	101,490	10,441	113,069	5,743	32,585	3,775	313,346	39,674	245,711	33,338	129,659	24,811
JDA	101,467	10,206	139,887	2,403	67,822	3,122	95,542	10,073	105,354	5,615	30,300	3,298	215,421	34,314	164,834	29,536	96,407	20,079
MCN	95,550	11,123	129,357	3,872	62,536	3,162	93,844	11,104	109,937	6,810	31,244	3,358	178,880	29,913	141,594	25,406	81,100	18,114
IHR	78,170	8,020	85,207	1,826	38,964	1,925	20,742	4,602	26,607	2,437	7,616	1,067	20,935	10,647	15,236	6,073	5,976	3,896
LMN	70,603	7,344	76,304	1,537	38,073	1,899	18,718	3,589	23,744	1,710	7,642	945	13,621	8,896	15,187	6,181	5,363	3,586
LGS	69,017	7,079	77,232	1,815	37,097	2,034	14,340	3,537	20,854	2,254	6,945	1,196	13,927	6,500	12,895	4,245	4,017	2,456
LWG	70,609	8,295	75,025	2,089	35,689	2,016	16,422	4,137	22,159	1,953	6,987	1,260	11,576	8,367	12,207	5,614	3,486	2,601
PRD	18,136	656	34,083	196	15,528	317	83,004	3,933	96,326	1,455	27,332	1,075	46,904	6,108	25,679	2,551	18,153	2,658
RIS	16,881	753	24,017	827	11,565	538	81,543	6,858	86,825	3,216	24,224	3,420	19,299	4,218	13,659	1,077	6,714	1,978
RRH	4,216	450	9,999	161	4,017	126	63,167	6,195	73,104	2,807	16,932	1,550	10,626	2,676	10,510	1,261	4,577	1,374
WEL	4,313	172	7,585	41	2,377	152	44,503	1,888	62,595	412	12,816	1,120	6,520	815	5,840	216	2,219	565

			Col	no				Sockeye			Steel	head	
	200	03	200	)2	10-Yr	Avg.		-	10-Yr			10-Yr	Wild
DAM	Adult	Jack	Adult	Jack	Adult	Jack	2003	2002	Avg.	2003	2002	Avg.	2003
BON	125,275	8,062	85,803	6,756	59,304	4,359	39,291	49,610	46,748	358,075	478,745	278,729	111,615
TDA	42,485	2,806	9,731	3,019	13,626	1,488	34,176	40,554	37,479	272,541	387,214	207,583	85,131
JDA	34,284	4,211	7,630	1,600	10,977	1,180	35,428	41,915	40,486	285,063	389,778	203,553	83,710
MCN	18,066	1,733	2,125	1,044	5,245	545	32,037	39,177	36,935	229,424	286,486	155,089	66,509
IHR	1,311	62	195	30	228	13	37	61	17	185,969	201,571	113,911	44,887
LMN	841	100	135	10	131	14	14	46	24	171,923	212,027	110,235	43,856
LGS	711	71	103	24	77	0	23	38	26	159,265	202,664	99,105	42,480
LWG	923	111	224	145	164	7	12	55	24	171,807	207,500	100,858	43,295
PRD	4,654	393	1,046	390	885	108	36,551	47,882	45,469	17,363	15,812	10,311	
RIS	5,607	0	1,559	0	1,049	0	34,779	44,320	41,025	17,290	15,178	9,319	11,309
RRH	832	0	413	0	163	0	30,355	12,372	24,256	13,470	11,700	6,887	8,607
WEL	124	0	103	0	40	0	28,996	10,586	23,919	8,357	9,276	5,177	4,976

RIS, RRH are through 10/28; WEL is through 10/29.

LGR is missing data for 3/6.

These numbers were collected from the COE's Running Sums text files, except where otherwise noted.

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.

Page last updated on: 10/31/03

BON counts from January 1, 2003 to March 14, 2003 (our counts begin March 15)

Chinook Adult	Chinook Jack	Steelhead	Wild Steelhead
3,758	0	3,443	408

<sup>\*\*</sup>PRD is not reporting Wild Steelhead numbers.

#### **Two Week Transportation Summary**

Source: Fish Passage Center Updated: 10/31/03 10:52 AM

		10/18/03	ТО	10/31/03				
		Species						
Site	Data	CH0	CH1	СО	SO	ST		<b>Grand Total</b>
LGR	Sum of NumberCollected	5,013	3 1	1	7	3	21	5,055
	Sum of NumberBarged		)	0	0	0	0	0
	Sum of NumberBypassed		)	0	0	0	21	21
	Sum of Numbertrucked	5,694	1	1	7	3	0	5,715
	Sum of TotalProjectMortalities	44	ļ	0	0	0	0	44
LGS	Sum of NumberCollected	832	2				10	842
	Sum of NumberBarged		)				0	0
	Sum of NumberBypassed		)				0	0
	Sum of Numbertrucked	811					7	818
	Sum of TotalProjectMortalities	22	2				0	22
Total S	um of NumberCollected	5,845	5 1	1	7	3	31	5,897
Total S	um of NumberBarged	(	)	0	0	0	0	0
Total Sum of NumberBypassed		(	)	0	0	0	21	21
Total Sum of Numbertrucked		6,505	5 1	1	7	3	7	6,533
Total S	um of TotalProjectMortalities	66	3	0	0	0	0	66

#### **YTD Transportation Summary**

Source: Fish Passage Center Updated: 10/31/03 10:52 AM

		TO:	10/31/03				
		Species					
Site	Data	CH0	CH1	co ;	SO	ST	Grand Total
LGR	Sum of NumberCollected	1,169,376	2,577,030	90,069	9,757	2,337,143	6,183,375
	Sum of NumberBarged	1,122,378	2,470,893	89,264	9,549	2,265,797	5,957,881
	Sum of NumberBypassed	2,894	45,590	7	0	53,543	102,034
	Sum of NumberTrucked	25,573	54,266	188	86	15,727	95,840
	Sum of TotalProjectMortalities	18,527	5,982	610	122	2,077	27,318
LGS	Sum of NumberCollected	603,208	1,832,627	86,757	5,441	1,938,462	4,466,495
	Sum of NumberBarged	574,927	1,776,598	86,171	5,399	1,934,367	4,377,462
	Sum of NumberBypassed	0	22	0	0	3	25
	Sum of NumberTrucked	20,728	52,602	135	4	1,154	74,623
	Sum of TotalProjectMortalities	7,477	3,406	451	38	2,935	14,307
LMN	Sum of NumberCollected	290,325	463,390	26,554	3,307	1,229,842	2,013,418
	Sum of NumberBarged	246,893	440,282	25,842	3,262	1,150,928	1,867,207
	Sum of NumberBypassed	34,112	6,866	681	0	75,966	117,625
	Sum of NumberTrucked	7,581	15,238	13	40	1,658	24,530
	Sum of TotalProjectMortalities	1,739	1,004	18	5	1,290	4,056
MCN	Sum of NumberCollected	7,028,584	1,041,821	71,927	546,131	155,032	8,843,495
	Sum of NumberBarged	4,606,418	5,470	8,989	10,989	701	4,632,567
	Sum of NumberBypassed	2,284,576	1,035,087	62,604	534,287	154,084	4,070,638
	Sum of NumberTrucked	65,426	31	0	122	0	65,579
	Sum of TotalProjectMortalities	72,166	1,140	334	438	242	74,320
Total Su	um of NumberCollected	9,091,493	5,914,868	275,307	564,636	5,660,479	21,506,783
Total Su	ım of NumberBarged	6,550,616	4,693,243	210,266	29,199	5,351,793	16,835,117
Total Sum of NumberBypassed		2,321,582	1,087,565	63,292	534,287	283,596	4,290,322
Total Su	um of NumberTrucked	119,308	122,137	336	252	18,539	260,572
Total Su	ım of TotalProjectMortalities	99,909	11,532	1,413	603	6,544	120,001