

# The Dalles Dam Fishway Status Report

Date: 9/7/2014  
 Inspection Period: 8/31/2014 to 9/6/2014

## THE DALLES DAM



US Army Corps  
 of Engineers  
 Portland District

The Dalles Project-Fisheries  
 P.O. Box 564  
 The Dalles, OR 97058-9998  
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*Fishways are inspected twice daily plus one SCADA inspection*

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections:		Temperature:	
			21	70.2 F	Secchi:	>5.0' feet
NORTH FISHWAY						
Exit differential	0	≤ 0.5'				
Count station differential	0	≤ 0.3'				
Weir crest depth	0	1.0' ± 0.1'				
Entrance differential	0	1.0' - 2.0'	Average	1.3		
Entrance weir N1	0	depth (≥ 8')	Average	9.3		
Entrance weir N2	0	Closed				
PUD Intake differential	0	≤ 0.5'				
EAST FISHWAY						
Exit differential	0	≤ 0.5'				
Removable weirs 154-157	0	Per forebay	Auto adjusts 1' increments.			
Weir 158-159 differential	0	1.0' ± 0.1'				
Count station differential	0	≤ 0.3'	Window cleaned as needed.			
Weir crest depth	0	1.0' ± 0.1'				
Junction pool weir JP6	0	depth (≥ 7')	Average	9.6	Manually adjusted as needed.	
East entrance differential	0	1.0' - 2.0'	Average	1.3		
Entrance weir E1	0	No criteria	Average	0.6	Manually adjusted as needed.	
Entrance weir E2	0	depth (≥ 8')	Average	11.8		
Entrance weir E3	0	depth (≥ 8')	Average	11.2		
Collection channel velocity	0	1.5 - 4 fps	Average	3.4		
Transportation channel velocity	0	1.5 - 4 fps	Average	2.9		
North channel velocity	0	1.5 - 4 fps	Average	2.7		
South channel velocity	1	1.5 - 4 fps	Average	4.2		
West entrance differential	0	1.0' - 2.0'	Average	1.4		
Entrance weir W1	0	depth (≥ 8')	Average	9.8		
Entrance weir W2	0	depth (≥ 8')	Average	10.2		
Entrance weir W3	0	No criteria	Closed			
South entrance differential	0	1.0' - 2.0'	Average	1.4		
Entrance weir S1	0	depth (≥ 8')	Average	9.2		
Entrance weir S2	0	depth (≥ 8')	Average	9.2		
JUVENILE PASSAGE						
Sluiceway operation	0	1, 8, 18				
Turbine trashrack drawdown	0	<1.5', wkly	Range	0.0' -0.4'		
Spill volume	N/A	40% ±1%	Average	0.0	On seal.	
Spill Pattern	0	per FPP				
Turbine Unit Priority	0	per FPP	Continued problems with block MU 13-16 See Current Outages below			
Turbine 1% Efficiency	0	per FPP				

## **OTHER ISSUES:**

### **Birds/Sea lions:**

Bird observation data collected once daily. Refer to Avian Zone Map.

Very few cormorants foraging in forebay near east fishway exit, relative to previous weeks.

### **Operations:**

Entrance weir E3 in manual due to sticking. E1 and E2 set in auto. All maintaining criteria depth.

Entrance weir W1 in manual also due to sticking. Maintaining depth criteria.

Calibration completed 9/6. Electricians notified for discrepancies. Gatewell drawdown check 9/1. All in criteria.

### **Current Outages:**

MU21 out 8/21 to 9/4 for annual maintenance

MU14 out 7/21 to 9/11/2014 for overhaul maintenance

T8 (MU15 & MU16) de-rated to single unit full load operation

### **Maintenance:**

North fishway pump motor replacement delivered. Installation prep starting. To be installed prior to Jan 2015 dewatering.

Parts on order for install of equalizing valve on PUD intake bulkhead for next winter dewatering.

East entrance weir E3 sticking in guide. To be addressed this winter. Does not affect criteria operation.

Permanent boom purchase underway for protecting east fishway from upstream oil spills. In contracting. FPOM approved.

Charter approved for reparer of north fishway rock walls. PM to be assigned.

Long term repair plans funding dependent; Upgrade east exit weirs 154-157, awaiting PM assignment to stabilize north ladder rock walls, remove collection channel diffusers, replace all entrance weir wheels with plastic composite wheels and repair/modify all east fishway dewatering pumps.

Fish related but non-fish funded items; spillway evaluation, spillway crane rehab, spillgate 9 wire rope replacement, HDC update fish unit reliability assessment, planning upgrade fish unit breakers and fish unit transformer replacement.

All spillway items on Critical Infrastructure list and Unfunded Requirement list.

New weir 158 leafs fabricated. Wheel and seal install next. Completion by Oct 1. Installation mid Dec.

### **Studies:**

EFL Backup. Plans/Specs underway for 10' hole through dam, under roadway and into AWS conduit at junction pool. Construction winter '15/'16.

With recent low east passage numbers during one fish unit operation, there are concerns of 1400cfs providing enough attraction. Test propose to FPOM.

PUD 'freedom' second turbine proposal. No new developments.

Spill Attraction - Record fall Chinook runs expected in 2014. Concern for overcrowding in east fish ladder. ERDC model trip completed. Adult attraction spill test to start Sep9 at 0400 hrs. Field observations started Sept. 1 to monitor possible passage changes. The purpose of this test to determine if attraction spill can provide more passage through north fish ladder and alleviate potential overcrowding in east ladder.

Spillgate Repair - ERDC model confirmed spill gate 9 repair as most beneficial over spill gates 10 and 11. District determining funding source.

### **Research/Contractors:**

PSMFC PIT tag monitoring continues at count stations.

Columbia River Northern Pikeminnow Management Dam Angling: weekly total 61 pikeminnow for grand total of 2,052 pikeminnow removed.

Nez Perce lamprey collection at east count station traps completed.

Normandeau fish counters at north and east count stations 16 hours/day 4/1-10/30. Investigating visibility improvements for video at north count station.

PSMFC sampling at PUD completed for season.

USDA bird hazing completed for season.

Zebra mussel monitoring with plankton samples ongoing. Samples provided to PSU for analysis.

University of Idaho maintaining antennas and continuing downloads.

Removal last set of 3 derelict Vertical Barrier Screens from MU 12 gate well slot completed. Investigating disposal options.

Approved by: Ron Twiner

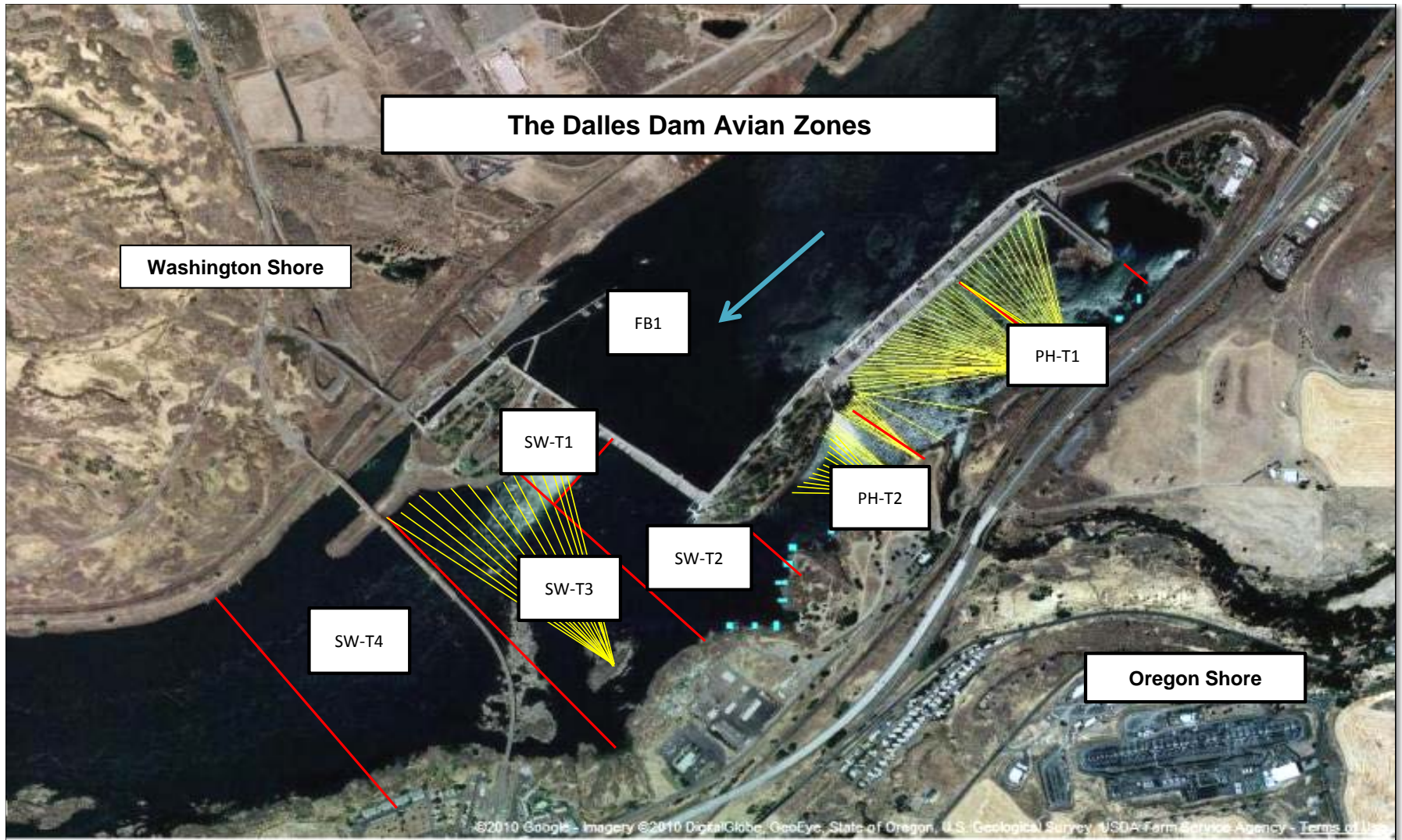
Operation Project Manager The Dalles Dam

↓ The Dalles East ↓

<b>Date</b>	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
8/31	5877	5272	605	953	678	275	117	83	34	1	0	0	36
9/1	6552	5785	767	2167	1430	737	265	236	29	8	0	0	30
9/2	8696	8098	598	2838	1885	953	394	317	77	4	0	1	41
9/3	11673	10747	926	2904	1894	1010	490	408	82	12	0	1	25
9/4	15921	14956	965	7145	4386	2759	1068	818	250	6	0	1	5
9/5	15674	13412	2262	5379	3911	1468	1171	936	235	0	0	1	14
9/6	12814	11651	1163	5330	3546	1784	1572	1295	277	0	0	0	23
<b>total</b>	<b>77207</b>	<b>69921</b>	<b>7286</b>	<b>26716</b>	<b>17730</b>	<b>8986</b>	<b>5077</b>	<b>4093</b>	<b>984</b>	<b>31</b>	<b>0</b>	<b>4</b>	<b>174</b>

↓ The Dalles North ↓

	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
8/31	1881	1702	179	650	408	242	35	30	5	0	0	0	26
9/1	280	254	26	311	210	101	50	44	6	0	0	0	24
9/2	376	324	52	354	205	149	72	60	12	5	0	0	22
9/3	417	370	47	122	82	40	60	52	8	1	0	0	7
9/4	297	235	62	257	168	89	122	102	20	2	0	0	10
9/5	67	53	14	202	125	77	196	173	23	0	0	0	10
9/6	327	265	62	170	97	73	171	136	35	0	0	0	10
<b>total</b>	<b>3645</b>	<b>3203</b>	<b>442</b>	<b>2066</b>	<b>1295</b>	<b>771</b>	<b>706</b>	<b>597</b>	<b>109</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>109</b>



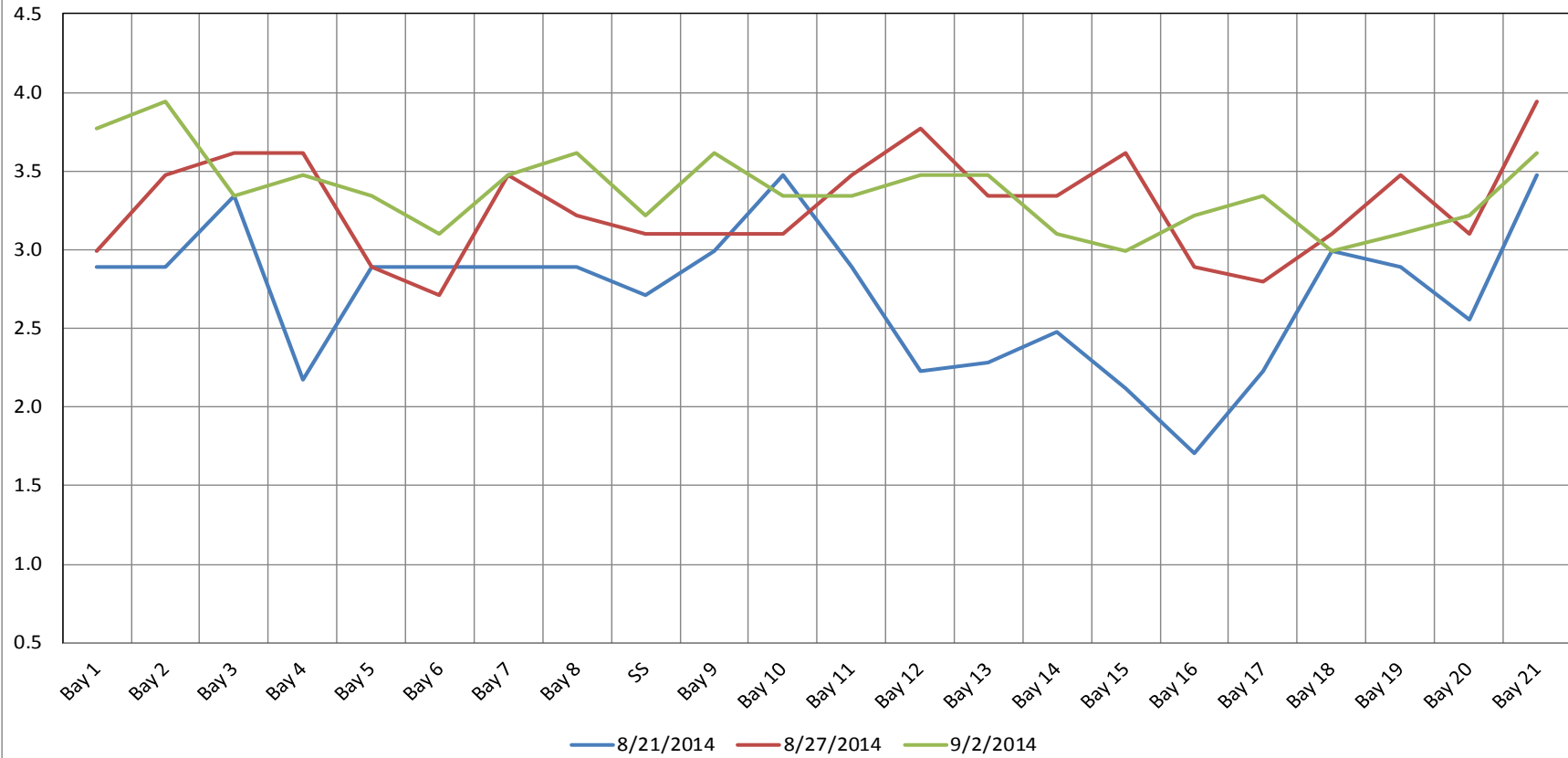
Hazing activity primarily in SW-T3 and SW-T4

## 2014 Piscivorous Bird Counts

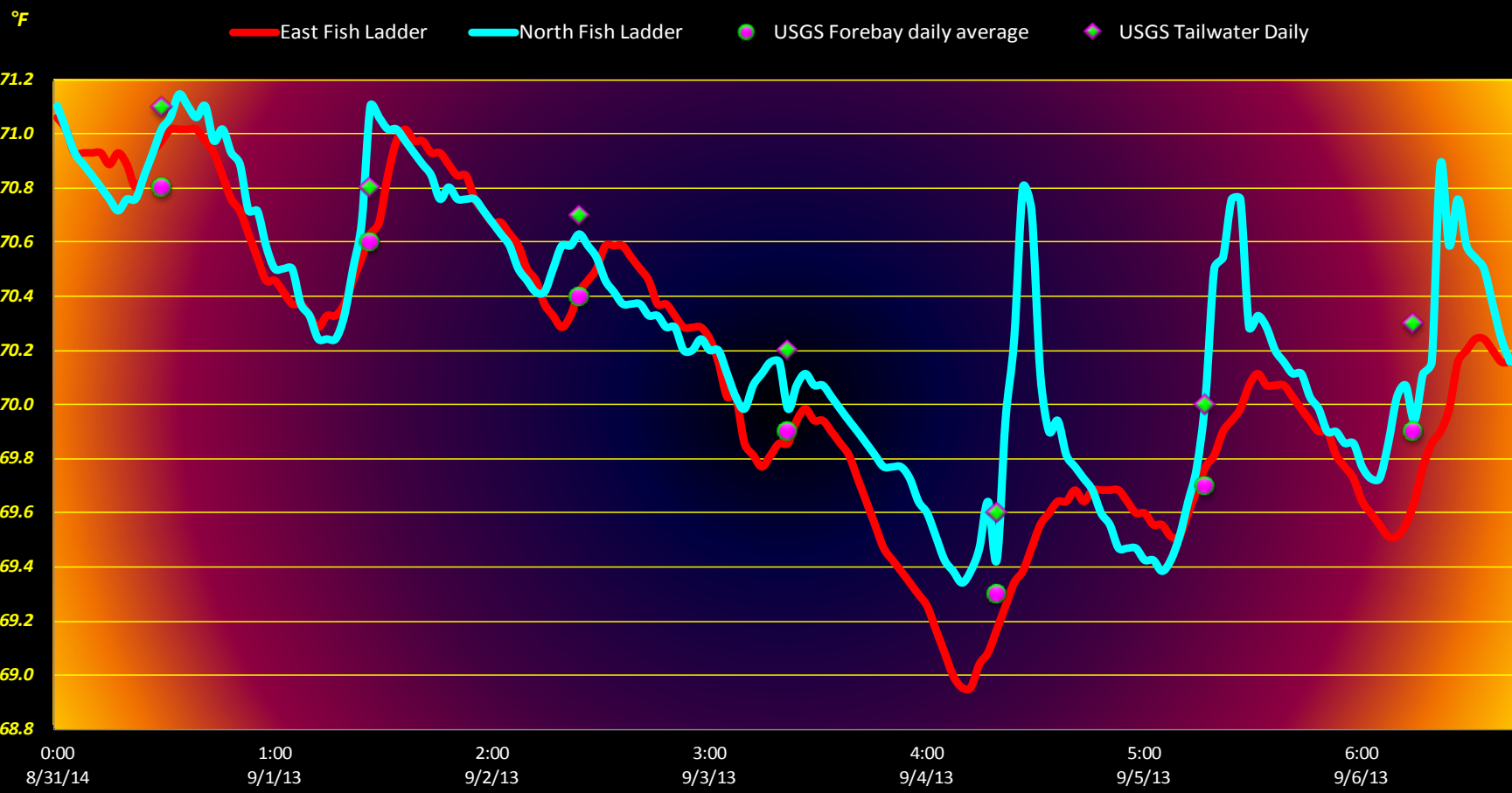
F=foraging, NF=non-foraging

Date	Observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total birds in zone	Notes
				F	NF	F	NF	F	NF	F	NF		
8/31	EHK	15:05	FB	0	0	0	18	0	0	0	0	18	GBH
		14:14	PH1	0	0	0	10	0	0	0	0	10	
		14:22	PH2	0	0	0	0	0	0	0	0	0	
		15:11	SW1	0	0	0	0	0	0	0	0	0	
		14:25	SW2	0	0	0	0	0	0	0	0	0	
		15:34	SW3	0	0	0	0	0	0	0	0	0	
		15:36	SW4	0	14	0	20	0	0	0	1	35	
9/1	EHK	8:57	FB	0	0	0	83	0	0	0	0	83	GBH
		8:27	PH1	0	0	0	0	0	0	0	1	1	
		8:30	PH2	0	0	0	0	0	0	0	0	0	
		9:14	SW1	0	0	0	0	0	0	0	0	0	
		8:32	SW2	0	0	0	0	0	0	0	0	0	
		9:26	SW3	0	0	0	5	0	0	0	0	5	
		9:28	SW4	0	6	0	0	0	0	0	0	6	
9/2	PSK	14:59	FB	0	0	0	3	0	0	0	0	3	roosting on north side electrical towers  flyby resting on rocks
		13:31	PH1	0	0	4	5	0	0	0	0	9	
		13:44	PH2	3	0	0	0	0	0	0	0	3	
		14:50	SW1	0	0	0	0	0	0	0	0	0	
		13:52	SW2	0	2	0	0	0	0	0	0	2	
		15:04	SW3	0	0	0	12	0	0	0	0	12	
		15:09	SW4	0	0	0	0	0	0	0	0	0	
9/3	jwr	10:46	FB	0	0	2	34	0	0	0	0	36	others=osprey  other=GBHE
		8:57	PH1	0	0	0	3	0	0	0	0	3	
		9:08	PH2	0	0	1	0	0	0	1	0	2	
		10:43	SW1	0	0	0	0	0	0	0	0	0	
		9:15	SW2	0	0	0	0	0	0	0	0	0	
		10:34	SW3	0	7	1	21	0	0	0	1	30	
9/5	jwr	10:36	FB	0	1	7	50	0	0	0	1	59	other=osprey other=GBHE
		9:52	PH1	0	0	0	4	0	0	0	1	5	
		10:01	PH2	5	0	1	0	0	0	0	0	6	
		10:38	SW1	0	0	0	0	0	0	0	0	0	
		10:28	SW2	0	0	0	0	0	0	0	0	0	
		10:29	SW3	0	1	0	19	0	0	0	0	20	
		10:31	SW4	0	0	0	0	0	0	0	0	0	
9/5	PSK	14:02	FB	0	0	0	7	0	0	0	0	7	roosting on north side electrical towers resting on rocks  flyby resting on rocks resting on rocks
		13:05	PH1	0	0	0	18	0	0	0	0	18	
		13:23	PH2	0	0	0	0	0	0	0	0	0	
		14:21	SW1	0	0	0	0	0	0	0	0	0	
		13:30	SW2	0	1	0	1	0	0	0	0	2	
		14:32	SW3	0	0	0	18	0	0	0	0	18	
		14:36	SW4	0	0	0	1	0	0	0	0	1	
9/6	jwr	13:51	FB	0	3	1	6	0	0	0	1	11	other=osprey other=GBHE other=osprey
		13:13	PH1	0	0	0	18	0	0	0	1	19	
		13:19	PH2	0	2	1	4	0	0	0	1	8	
		13:52	SW1	0	0	0	0	0	0	0	0	0	
		13:21	SW2	0	0	1	0	0	0	0	0	1	
		13:45	SW3	0	7	1	15	0	0	0	0	23	
		13:47	SW4	0	0	0	5	0	0	0	0	5	

The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)



# The Dalles Dam Adult Fish Ladder(s) River/Water Temperatures



	Forebay	Tailwater	Secchi:
USGS Data	70.8	71.1	4.5
	70.6	70.8	5.0
	70.4	70.7	5.0
	69.9	70.2	5.5
	69.3	69.6	5.0
	69.7	70.0	5.0
AVG:	70.2		AVG >5.0'

**The Dalles Dam Daily Readings and Averages for  
Temperatures, Secchi, Entrances, and Spill**

= out of criteria

Date:	North Ladder		East Ladder											Spill%	
	North Entrance		East Entrance					West Entrance			South Entrance				
	Differential	N1 Depth	Differential	E1 Depth	E2 Depth	E3 Depth	JP 6	Differential	W1 Depth	W2 Depth	W3 Depth	Differential	S1 Depth		S2 Depth
8/31			1.6	0.0	12.1	9.9	8.9	1.4	8.5	10.6	Closed	1.4	9.5	9.5	39.8
	1.2	9.9	1.7	0.0	12.9	10.0	9.0	1.4	8.8	10.7		1.3	9.6	9.6	
	1.3	9.8	1.3	1.1	12.1	11.7	10.0	1.5	9.4	10.7		1.4	9.5	9.5	
9/1			1.4	1.0	11.4	10.7	9.0	1.5	8.4	10.6		1.4	9.4	9.5	0.1
	1.0	9.8	1.4	1.1	11.5	10.8	9.1	1.4	8.4	10.7		1.4	9.5	9.5	
	1.0	9.7	1.4	1.0	11.3	10.8	9.1	1.4	8.4	10.7		1.3	9.5	9.0	
9/2	<b>F2 tripped</b>		<b>-0.2</b>	1.1	11.5	11.0	9.3	<b>0.2</b>	8.5	10.5		<b>0.7</b>	9.5	9.5	<b>9 / 1  N O  S P I L L</b>
	1.4	8.9	1.4	1.0	11.4	10.7	9.0	1.4	8.5	10.7		1.4	9.4	9.4	
	1.4	9.0	<b>-0.1</b>	1.1	11.5	11.6	9.9	<b>0.4</b>	8.9	10.7		<b>0.8</b>	9.5	9.5	
9/3			1.5	1.4	12.0	10.2	8.5	1.5	8.0	10.4		1.6	8.5	8.5	
	1.4	8.9	1.5	1.6	12.1	10.3	8.6	1.5	9.1	10.1		1.6	8.6	8.6	
	1.4	9.1	1.5	1.0	12.1	11.1	9.4	1.6	9.8	9.5		1.6	8.6	8.6	
9/4			1.4	0.9	11.9	11.1	9.4	1.5	9.8	10.0		1.4	9.0	9.0	
	1.3	9.1	1.4	0.9	11.4	11.1	9.4	1.4	9.8	10.0		1.6	8.9	8.9	
	1.5	8.9	1.5	1.1	11.6	11.9	10.2	1.3	11.5	10.1		1.6	8.9	8.9	
9/5			1.5	1.1	11.7	12.0	10.3	1.4	11.8	10.4	1.4	9.1	9.1		
	1.5	9.0	1.5	-0.4	11.4	12.3	10.6	1.5	11.9	9.6	1.6	9.0	9.0		
	1.4	9.4	1.6	-0.4	11.6	12.3	10.6	1.5	12.1	9.4	1.7	8.9	8.9		
9/6			1.7	-1.0	12.1	11.4	10.4	1.6	11.0	9.0	1.6	9.0	9.0		
	1.3	9.3	1.5	-1.0	12.1	11.6	10.6	1.5	11.1	10.1	1.5	9.5	9.5		
	1.4	9.5	1.7	-0.9	12.0	12.2	11.2	1.5	11.9	10.1	1.5	9.6	9.6		
AVG:	1.3	9.3	1.3	0.6	11.8	11.2	9.6	1.4	9.8	10.2	Closed	1.4	9.2	9.2	

Spill % values represent daily average from operations status report





158 weir fabrication closer to completion