

The Dalles Dam Fishway Status Report

Date: 9/7/2014
 Inspection Period: 9/7/2014 to 9/6 9/13/2014

THE DALLES DAM



**US Army Corps
 of Engineers**
 Portland District

The Dalles Project-Fisheries
 P.O. Box 564
 The Dalles, OR 97058-9998
 Phone: 541-506-3800

Fishways are inspected twice daily plus one SCADA inspection

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections:		Temperature:	
			21	69.0 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	1.4		
Entrance weir N1	0	depth (≥ 8')	Average	9.4		
Entrance weir N2	0	Closed				
PUD Intake differential	0	≤ 0.5'	Raked on 9/8/14			
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	11.0	Manually adjusted as needed.	
East entrance differential	2	1.0' - 2.0'	Average	1.6	PLC malfunction with inaccurate channel elevation. Corrected.	
Entrance weir E1	0	No criteria	Average	2.5	Manually adjusted as needed.	
Entrance weir E2	0	depth (≥ 8')	Average	12.2		
Entrance weir E3	0	depth (≥ 8')	Average	12.8		
Collection channel velocity	0	1.5 - 4 fps	Average	3.1		
Transportation channel velocity	0	1.5 - 4 fps	Average	2.8		
North channel velocity	0	1.5 - 4 fps	Average	2.5		
South channel velocity	0	1.5 - 4 fps	Average	3.8		
West entrance differential	0	1.0' - 2.0'	Average	1.5		
Entrance weir W1	0	depth (≥ 8')	Average	11.5		
Entrance weir W2	0	depth (≥ 8')	Average	9.5		
Entrance weir W3	0	No criteria	Closed			
South entrance differential	0	1.0' - 2.0'	Average	1.5		
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	0.1' -0.4'		
Spill volume	0	40% ±1%	Average	14.7 KCFS	Spilling for increased north ladder attraction	
Spill Pattern	0	per FPP	Spillbay	1, 7 & 8		
Turbine Unit Priority	0	per FPP				
Turbine 1% Efficiency	0	per FPP				

OTHER ISSUES:**Birds/Sea lions:**

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

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 9/10. Electricians notified for discrepancies. Gatewell drawdown check 9/12. All in criteria.

Fish unit 1 out for 4 short durations on 9/2 ranging from 18 to 84 minutes due to maintenance activity tripping a breaker. Refer to data tab for details.

Current Outages:

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 underway. Will be operational for Jan 2015 dewatering.

Parts on order for install of equalizing valve on PUD intake bulkhead. Modification November 2014.

Entrance weirs E3 and W1 sticking in guide. To be repaired December 2014 during fishway outage. Does not affect criteria operation.

Permanent boom purchase underway for protecting east fishway from upstream oil spills. In contracting. FPOM approved. Install date to be determined.

Charter approved for repair of north fishway rock walls. PM to be assigned. Date to be determined.

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 fabrication near complete.

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 fish unit failure there was ~9 hour period of 1 fish turbine operation, which resulted in substantial decrease in east passage. This raises concerns for the east fishway backup water supply 1400cfs design. A test for passage viability is being proposed to FPOM for this fall.

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 started Sep9 through Sep15. Field observations started Sept. 1 to monitor possible passage changes. The purpose of this test to determine if attraction spill can provide more passage to the north fish ladder. Cost vs benefit analysis afterwards. Refer to Pic tab.

Spillgate Repair - ERDC model confirmed spill gate 9 repair as most beneficial over spill gates 10 and 11. FPOM approved new priority.

Research/Contractors:

PSMFC PIT tag monitoring continues at count stations.

Dam Angling: Total 2,102 pikeminnow removed.

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.

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

University of Idaho maintaining antennas and continuing downloads. Planning for winter steelhead monitoring.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam

The Dalles East

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
7-Sep-14	14919	14098	821	4060	2819	1241	1694	1538	156	5	0	0	34
8-Sep-14	29346	26945	2401	3172	2190	982	2208	1964	244	1	0	0	31
9-Sep-14	32796	29369	3427	2393	1685	708	3663	3092	571	2	0	0	24
10-Sep-14	27490	25214	2276	3955	2731	1224	4660	4226	434	1	0	0	28
11-Sep-14	26183	23376	2807	4267	3103	1164	3715	3259	456	5	0	0	31
12-Sep-14	15480	13442	2038	6192	4206	1986	4321	3918	403	-2	0	0	30
13-Sep-14	15831	13247	2584	7014	4800	2214	5019	4259	760	5	0	0	18
total	162045	145691	16354	31053	21534	9519	25280	22256	3024	17	0	0	196

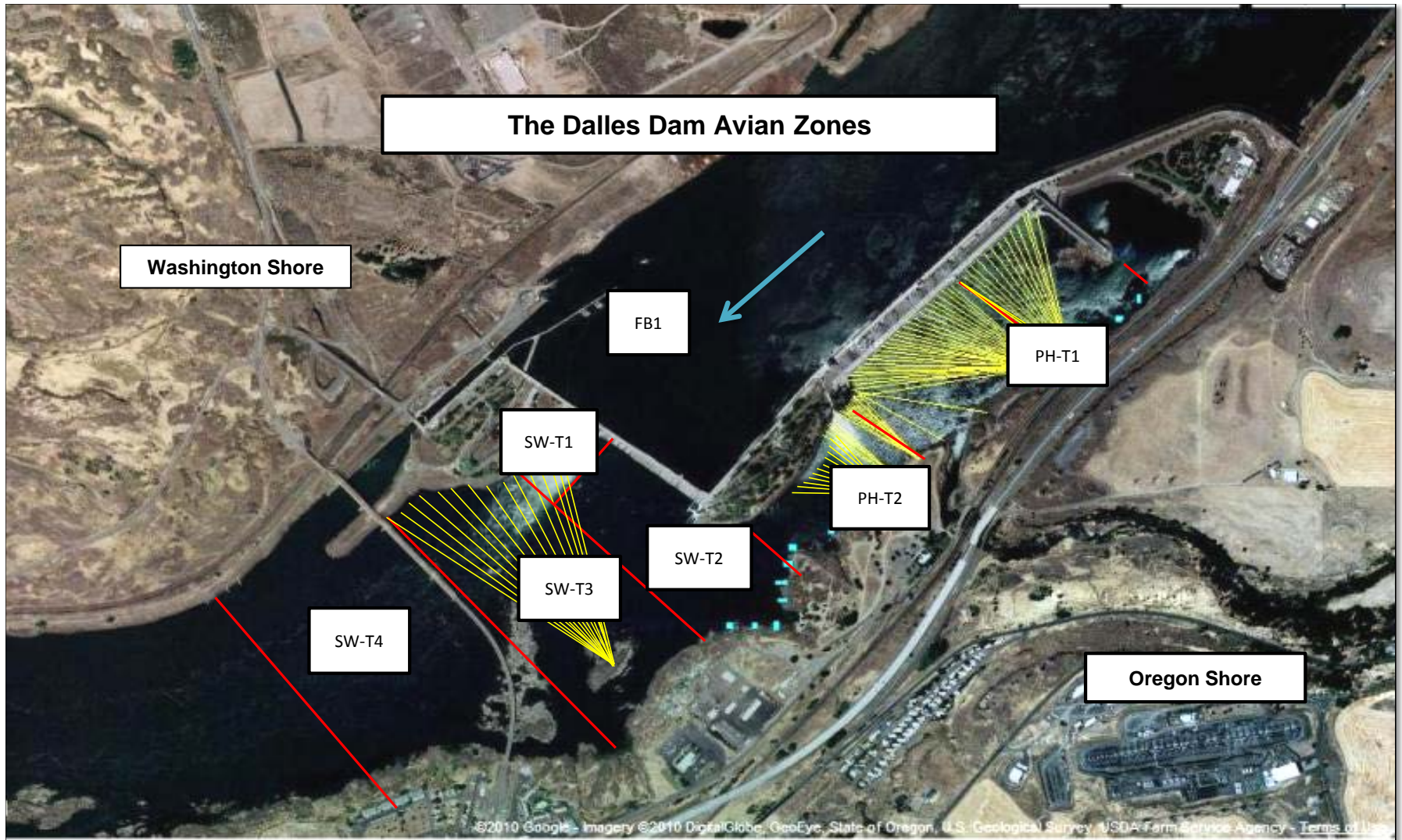
The Dalles North

Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink	Lamprey
7-Sep-14	449	396	53	290	202	88	302	271	31	0	0	0	8
8-Sep-14	1897	1776	121	248	181	67	414	397	17	1	0	0	5
9-Sep-14	7228	6546	682	756	480	276	1625	1541	84	0	0	0	12
10-Sep-14	5723	5182	541	654	442	212	1191	1073	118	0	0	-1	7
11-Sep-14	3388	2880	508	1514	1020	494	1785	1691	94	0	0	0	12
12-Sep-14	1903	1727	176	1296	874	422	1364	1231	133	0	0	0	4
13-Sep-14	859	740	119	1446	988	458	1536	1434	102	1	0	0	-1
total	21447	19247	2200	6204	4187	2017	8217	7638	579	2	0	-1	47

2014 Piscivorous Bird Counts

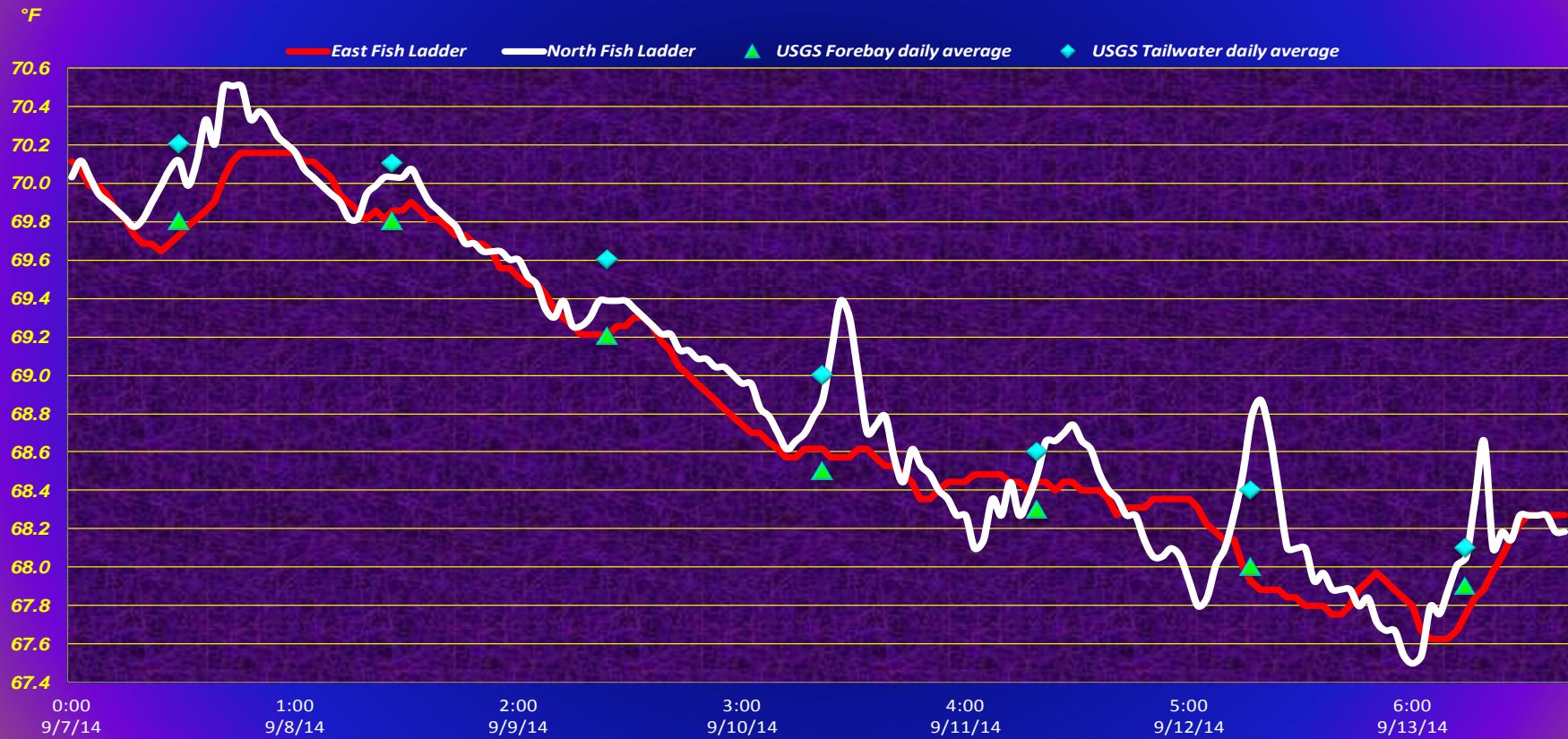
F=foraging, NF=non-foraging

Date	Observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Other		Total birds in zone	Notes
				F	NF	F	NF	F	NF	F	NF		
9/7	jwr	7:49	FB	0	0	2	117	0	0	0	1	120	other=osprey both "others" =osprey other =GBHE
		7:03	PH1	0	1	0	0	0	0	0	0	1	
		7:09	PH2	0	0	0	0	0	0	0	0	2	
		7:37	SW1	0	0	2	0	0	0	0	0	2	
		7:11	SW2	0	1	5	1	0	0	0	0	7	
		7:52	SW3	0	5	0	15	0	0	0	0	1	
		7:53	SW4	0	1	0	0	0	0	0	0	1	
9/8	PSK	14:25	FB	0	0	0	6	0	0	0	0	6	roosting on electrical towers resting on rocks
		12:35	PH1	0	0	0	20	0	0	0	0	20	
		12:41	PH2	0	0	0	0	0	0	0	0	0	
		14:45	SW1	0	0	0	0	0	0	0	0	0	
		12:43	SW2	0	0	1	0	0	0	0	0	1	
		14:54	SW3	0	0	1	25	0	0	0	0	0	
		14:56	SW4	0	1	3	0	0	0	0	0	4	
9/9	jwr	10:30	FB	0	0	2	56	0	0	0	0	58	
		8:40	PH1	0	1	2	1	0	0	0	0	4	
		8:45	PH2	0	0	0	0	0	0	0	0	0	
		10:26	SW1	0	0	0	0	0	0	0	0	0	
		10:21	SW2	0	0	0	0	0	0	0	0	0	
		10:22	SW3	0	4	0	13	0	0	0	0	0	
		10:24	SW4	0	0	0	0	0	0	0	0	0	
9/10		13:56	FB	0	0	1	35	0	0	0	1	37	other=grebe other=GBHE
		13:11	PH1	0	0	0	13	0	0	0	1	14	
		13:24	PH2	2	0	0	0	0	0	0	0	2	
		13:51	SW1	0	0	0	0	0	0	0	0	0	
		13:30	SW2	0	0	0	0	0	0	0	0	0	
		13:45	SW3	0	16	0	15	0	0	0	0	0	
		13:49	SW4	0	4	0	16	0	0	0	1	21	other=GBHE
9/11	jwr	9:56	FB	0	1	0	18	0	0	0	0	19	
		9:15	PH1	0	0	3	0	0	0	0	0	3	
		9:24	PH2	1	0	0	0	0	0	0	0	1	
		9:54	SW1	0	0	0	0	0	0	0	0	0	
		9:27	SW2	0	1	0	2	0	0	0	0	3	
		9:47	SW3	0	13	0	14	0	0	0	0	0	
		9:50	SW4	0	12	0	16	0	0	0	0	28	
9/12	psk	14:27	FB	0	0	0	20	0	0	0	0	20	GBH
		13:34	PH1	0	0	0	12	0	0	0	1	13	
		13:44	PH2	0	0	0	0	0	0	0	0	0	
		14:42	SW1	0	0	0	0	0	0	0	0	0	
		13:50	SW2	0	0	0	0	0	0	0	0	0	
		14:56	SW3	0	0	0	12	0	0	0	0	0	
		14:59	SW4	1	6	0	8	0	0	0	0	15	
9/13	EHK	9:11	FB	0	0	0	72	0	0	0	0	72	GBH osprey
		8:24	PH1	0	0	0	0	0	0	0	1	1	
		8:56	PH2	0	0	0	0	0	0	0	0	0	
		9:09	SW1	0	0	0	0	0	0	0	0	0	
		8:57	SW2	0	0	1	0	0	0	1	0	2	
		9:26	SW3	0	0	0	4	0	0	0	0	4	
		9:28	SW4	0	3	0	5	0	0	0	0	8	

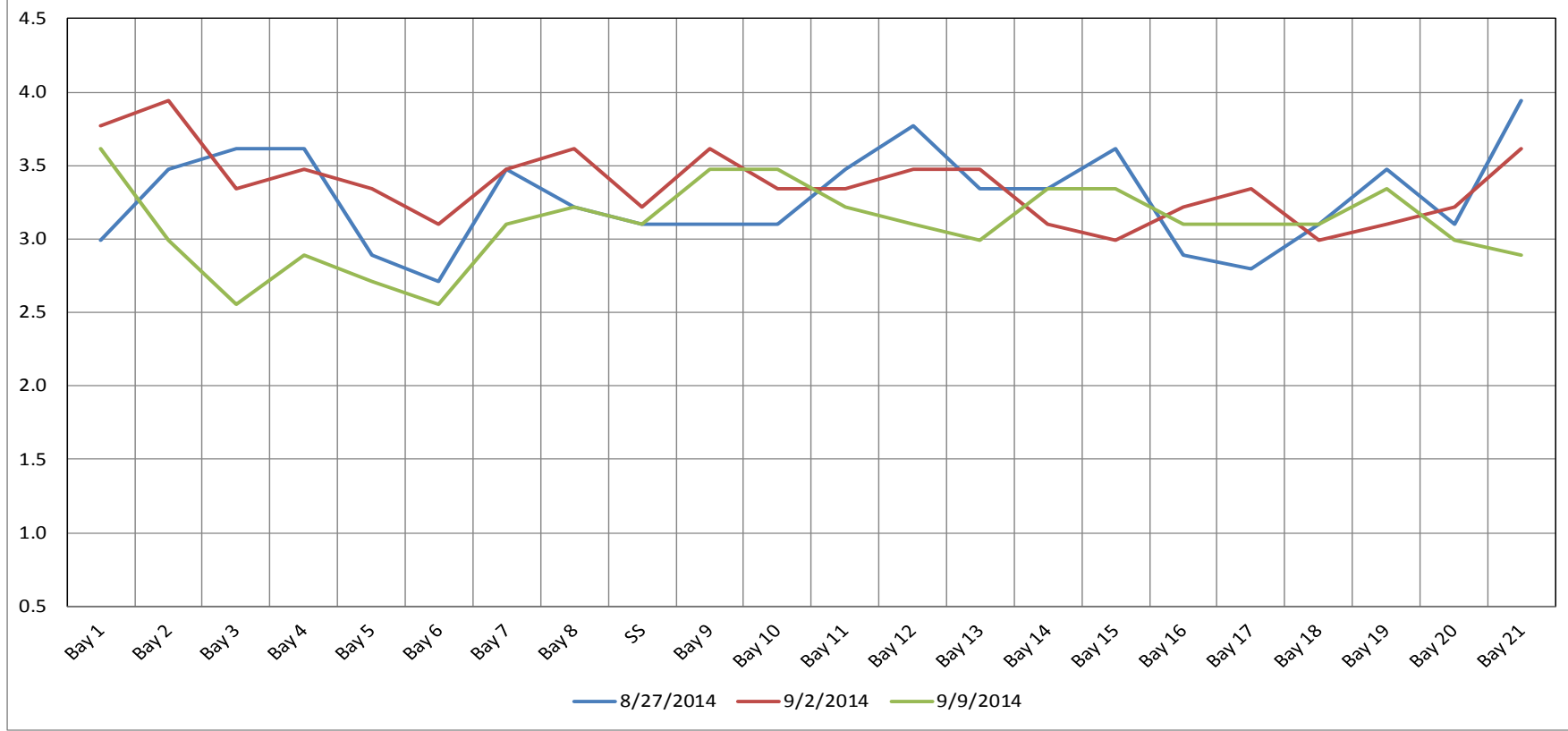


Hazing activity primarily in SW-T3 and SW-T4

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



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



	Forebay	Tailwater	Secchi:
USGS	69.8	70.2	4.5
	69.8	70.1	5.0
	69.2	69.6	5.0
	68.5	69.0	5.5
	68.3	68.6	5.0
Data	68.0	68.4	5.0
	67.9	68.1	5.0
AVG:	69.0		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 KCFS
	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	
9/7			1.4	-1.1	12.9	11.7	10.7	1.5	11.2	10.1	Closed	1.4	9.6	9.4	
	1.4	9.3	1.4	-0.9	13.1	11.7	10.7	1.5	11.2	10.0		1.4	9.6	9.6	
	1.4	9.3	1.5	-1.0	12.0	12.0	11.0	1.4	11.3	10.0		1.5	9.5	9.5	
9/8			1.5	-0.9	12.0	11.9	10.9	1.5	11.4	10.1		1.5	9.6	9.6	
	1.4	9.3	1.5	-1.4	12.1	12.2	11.2	1.6	11.4	10.0		1.5	9.6	9.6	
	1.4	9.3	1.3	0.0	12.0	12.9	10.9	1.4	11.5	9.9		1.4	9.5	9.4	
9/9			1.5	-1.4	12.0	12.4	11.3	1.5	11.9	10.1		1.6	9.4	9.5	14.5
	1.4	9.4	1.5	-1.2	12.0	12.5	11.5	1.5	11.9	10.0		1.5	9.6	9.5	
	1.4	9.4	1.5		12.0	12.6	12.1	1.6	12.3	9.9		1.5	9.5	9.4	
9/10			1.5	-1.7	12.0	12.6	11.0	1.5	11.7	10.1		1.4	9.6	9.6	14.7
	1.3	9.4	1.5	-1.6	12.1	12.1	11.1	1.6	11.6	11.5		1.5	9.5	9.5	
	1.4	9.4	2.5	0.0	12.0	11.5	11.5	1.6	10.2	9.5		1.5	9.6	9.6	
9/11			2.4	-2.2	11.9	12.4	10.5	1.6	11.3	9.4		1.5	9.4	9.4	14.7
	1.3	9.4	1.5	7.4	12.0	13.4	10.4	1.5	11.0	8.6		1.5	8.5	8.5	
	1.4	9.3	1.6	7.5	12.1	13.3	10.3	1.5	11.0	8.6		1.6	8.5	8.5	
9/12			1.6	7.5	11.9	13.6		1.5	11.4	8.4	1.6	8.6	8.6	14.7	
	1.3	9.4	1.4	8.2	12.6	12.6	10.6	1.4	11.4	8.6	1.6	8.6	8.6		
	1.4	9.4	1.5	8.1	12.5	14.5	11.5	1.4	12.0	8.6	1.6	8.6	8.5		
9/13			1.5	8.0	12.5	14.4		1.4	12.0	8.6	1.6	8.4	8.5	14.7	
	1.4	9.3	1.5	8.0	12.5	14.3	11.3	1.4	12.0	8.6	1.7	8.4	8.5		
	1.4	9.3	1.5	8.0	12.4	14.4	11.4	1.4	12.0	8.5	1.5	9.1	9.0		
AVG:	1.4	9.4	1.6	2.5	12.2	12.8	11.0	1.5	11.5	9.5	Closed	1.5	9.2	9.2	



Spill attraction flow test for north fishladder. Results pending.

