

# The Dalles Dam Fishway Status Report

Date: 8/2/2014  
 Inspection Period: 7/27/2014 to 8/2/2014

## 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: Comments	21	Temperature: 69.9 F
<b>NORTH FISHWAY</b>					
Exit differential	0	≤ 0.5'			
Count station differential	0	≤ 0.3'	Window cleaned 7/31/2014.		
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 10.0		
Entrance weir N2	0	Closed			
PUD Intake differential	0	≤ 0.5'			
<b>EAST FISHWAY</b>					
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 7/31/2014.		
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	Average 10.2	Manually adjusted as needed.	
East entrance differential	0	1.0' - 2.0'	Average 1.5		
Entrance weir E1	0	No criteria	Average 6.9		
Entrance weir E2	0	depth (≥ 8')	Average 13.8		
Entrance weir E3	0	depth (≥ 8')	Average 10.0		
Collection channel velocity	0	1.5 - 4 fps	Average 2.3		
Transportation channel velocity	0	1.5 - 4 fps	Average 2.7		
North channel velocity	0	1.5 - 4 fps	Average 2.4		
South channel velocity	0	1.5 - 4 fps	Average 3.6		
West entrance differential	0	1.0' - 2.0'	Average 1.6		
Entrance weir W1	0	depth (≥ 8')	Average 8.7		
Entrance weir W2	0	depth (≥ 8')	Average 8.7		
Entrance weir W3	0	No criteria	Closed		
South entrance differential	0	1.0' - 2.0'	Average 1.6		
Entrance weir S1	0	depth (≥ 8')	Average 9.0		
Entrance weir S2	0	depth (≥ 8')	Average 9.0		
<b>JUVENILE PASSAGE</b>					
Sluiceway operation	0	1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	Range 0.0' - 0.3'		
Spill volume	0	40% ±1%	Average 40.0	See average tab for daily averages.	
Spill Pattern	0	per FPP			
Turbine Unit Priority	11	per FPP	Main Units 13 and 14 OOS for maintenance. See <b>Current Outages</b> below.		
Turbine 1% Efficiency	0	per FPP			

## **OTHER ISSUES:**

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

Bird observation data collected once daily. Refer to Avian Zone Map. Gulls observed primarily downstream of spillway.

Cormorants continue roosting on Washington shore forebay electrical towers. Several cormorants observed in east fishladder, quickly flushed through.

### **Operations:**

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

Gatewell drawdown check 8/1. All in criteria limit.

### **Current Outages:**

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

MU14 out 7/21 to 8/28/2014 for five year overhaul maintenance.

MU13 out 7/21 to 7/31/2014 for annual maintenance.

### **Maintenance:**

New weir 159 leafs fabricated. Wheel and seal install next. Completion by Oct1. Installation mid Dec.

North fishway pump motor replacement delivered. Install prior to Jan 2015.

Collection channel pump #1 removal 8/4 for motor failure repair. Removal in conjunction with east fishway grating inspection when fish units off.

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 to be purchased for protecting east fishway from upstream oil spills. Vendor consultation visit 31 July.

Midseason ROV inspection of fishway grating 8/4. East fishway fish units will be off AM and north fishway PUD will be off PM.

Bathymetry survey will be conducted at east end of Powerhouse tailrace while fish units are off on 8/4 to determine possible debris issues.

*Long term repair plans funding dependent*; Upgrade east exit weirs 154-157, charter submitted 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 10/11 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.

### **Studies:**

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

Test pits excavation between fishladder and fishlock parking area in Nov. ADCP flow velocity survey also in Nov.

**PUD -** PUD 'freedom' second turbine proposal for north fishway in FERC review process. Corps comments provided.

**Flow Split -** Record fall Chinook runs expected in 2014. Concern for overcrowding in east fish ladder. ERDC model trip planned for Aug 25-28 to determine potential spill operation to attract more fish to the north fish ladder. Field observations planned to monitor possible passage changes.

### **Research/Contractors:**

PSMFC PIT tag monitoring continues at count stations. No issues.

Columbia River Northern Pikeminnow Management Dam Angling: 14.75 hours fishing for 83 pikeminnow.

Umatilla and Yakama Nation tribes achieved adult lamprey collection allocations of 374 per tribe. Nez Perce will continue through end of Aug.

Normandeau fish counters at north and east count stations 16 hours a day 1 April through 30 October. Investigating possible visibility improvements for north count station. Modification proposals to FPOM for approval.

PSMFC PUD weekly sampling: no salmonids; final weekly summary of the season.

USDA to complete hazing contract 31 July. Gull presence minimal. Post season meeting will be held (date TBD) to evaluate success and potential improvements for next season.

Starting zebra mussel monitoring with plankton samples for this season. Samples provided to OSU 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 scheduled week of Aug11. Funding allocated.

Approved by:

Ron D. Twiner

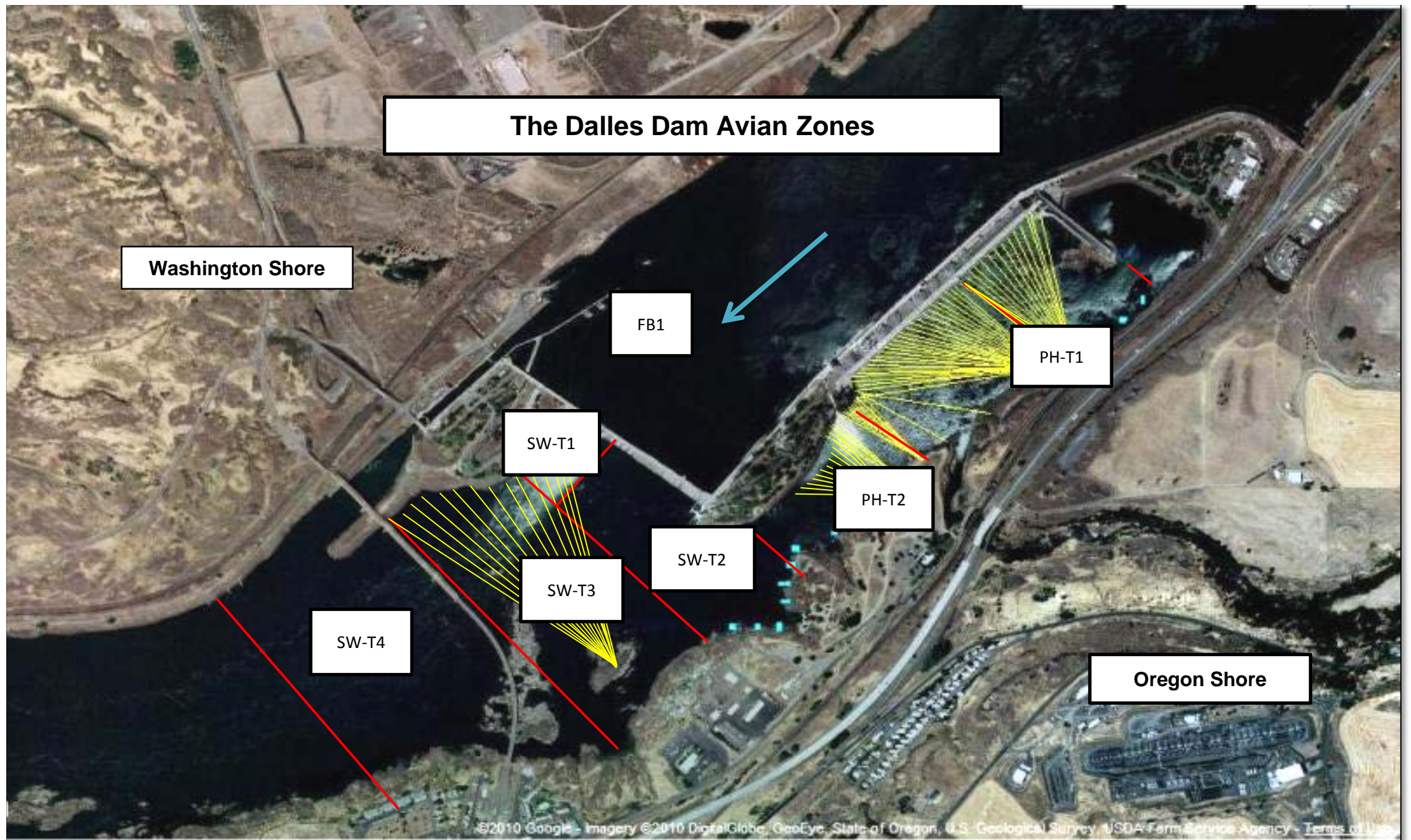
Operation Project Manager The Dalles Dam

### 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
27-Jul-14	396	274	122	1787	808	979	0	0	0	258	0	0	58
28-Jul-14	354	252	102	1332	618	714	0	0	0	272	0	0	101
29-Jul-14	495	332	163	1336	706	630	0	0	0	211	0	0	43
30-Jul-14	618	370	248	1213	587	626	0	0	0	199	0	0	65
31-Jul-14	606	370	236	1401	724	677	0	0	0	151	0	0	56
1-Aug-14	441	329	112	1215	571	644	0	0	0	113	0	0	71
2-Aug-14	466	324	142	1408	646	762	0	0	0	95	0	0	88
<b>total</b>	<b>3376</b>	<b>2251</b>	<b>1125</b>	<b>9692</b>	<b>4660</b>	<b>5032</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1299</b>	<b>0</b>	<b>0</b>	<b>482</b>

### 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
27-Jul-14	140	109	31	570	236	334	0	0	0	236	0	0	236
28-Jul-14	139	108	31	465	181	284	0	0	0	151	0	0	52
29-Jul-14	173	133	40	592	258	334	0	0	0	151	0	0	120
30-Jul-14	209	160	49	585	274	311	0	0	0	100	0	0	40
31-Jul-14	230	164	66	612	293	319	0	0	0	94	0	0	37
1-Aug-14	260	205	55	809	395	414	0	0	0	102	0	0	25
2-Aug-14	189	133	56	663	299	364	0	0	0	73	0	0	17
<b>total</b>	<b>1340</b>	<b>1012</b>	<b>328</b>	<b>4296</b>	<b>1936</b>	<b>2360</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>907</b>	<b>0</b>	<b>0</b>	<b>527</b>



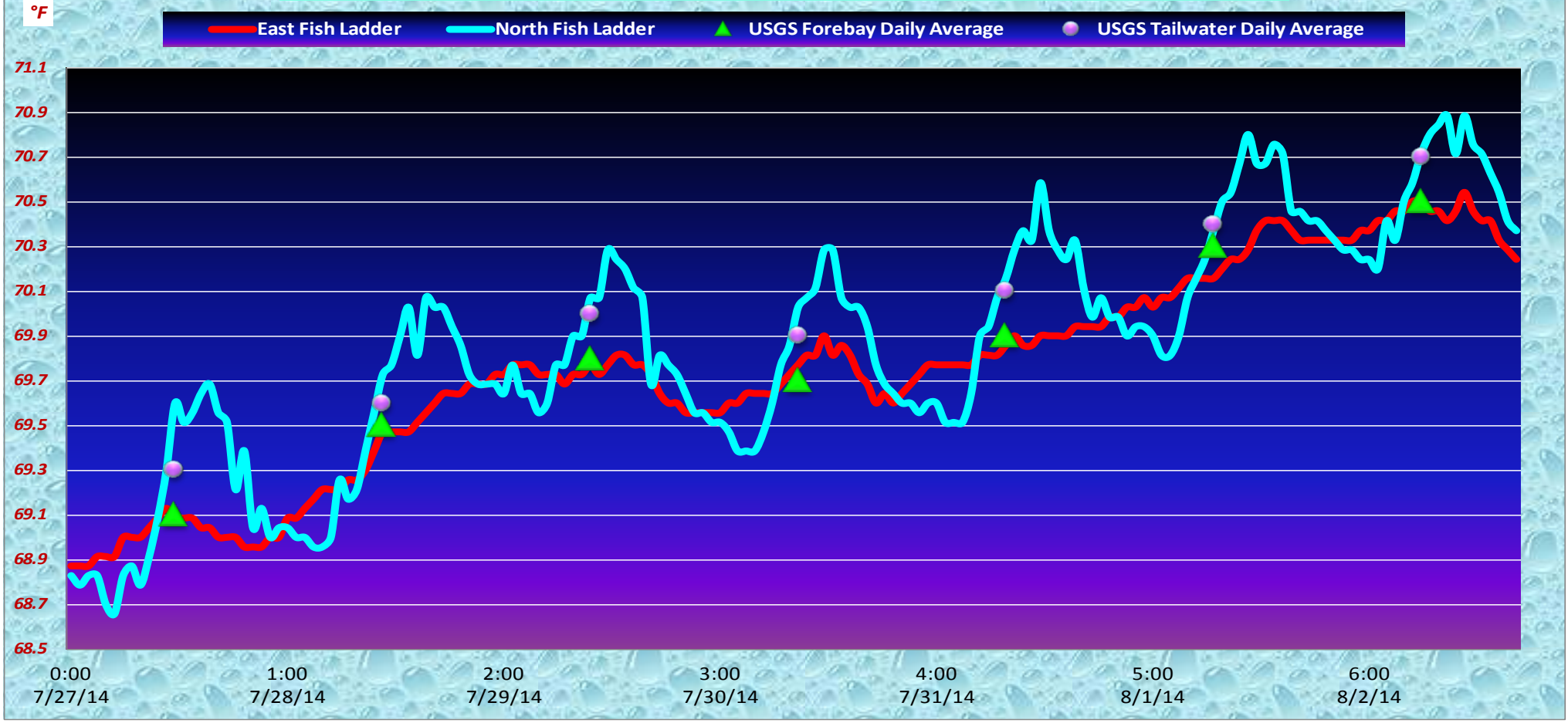
Hazing activity primarily in SW-T3 and SW-T4

## 2014 Piscivorous Bird Counts

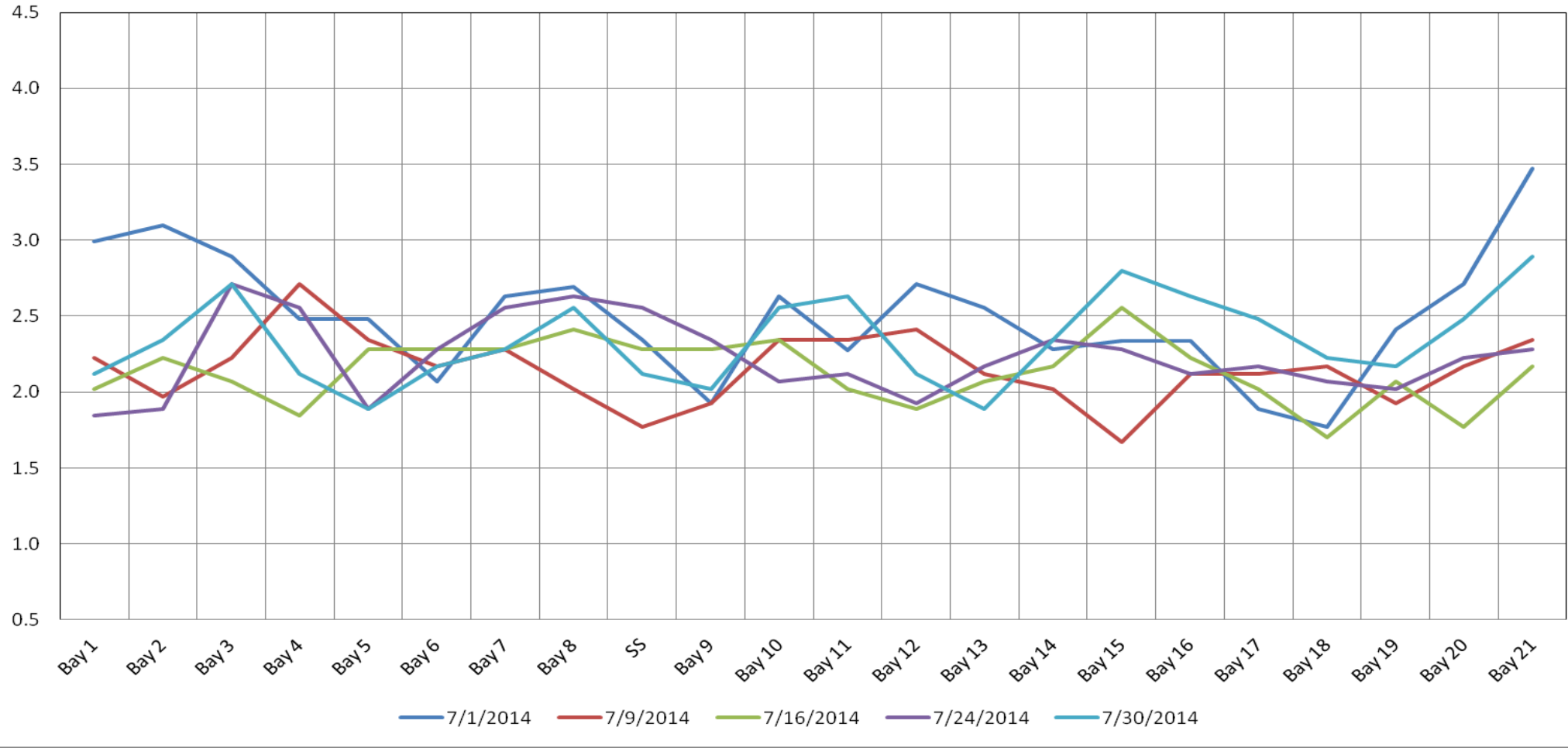
*F=foraging, NF=non-foraging*

Date	Session	Time (24 hr)	Avian Zone	Gull		Cormorant		Caspian tern		Other		Total birds in zone	Observer	Notes
				F	NF	F	NF	F	NF	F	NF			
7/27/14	1	14:21	FB	0	0	0	1	0	0	0	0	1	PSK	Cormorant roosting on electrical tower. Cormorants resting on rocks.
		13:27	PH1	0	0	0	12	0	0	0	0	12		
		13:36	PH2	0	0	0	0	0	0	0	0	0		
		14:32	SW1	0	0	0	0	0	0	0	0	0		
		13:40	SW2	0	0	0	0	0	0	0	0	0		
		14:46	SW3	11	0	0	0	0	0	0	0	11		
		14:50	SW4	0	0	0	0	0	0	0	0	0		
7/28/14	1	9:08	FB	2	23	0	64	0	0	0	0	89	JWR	
		8:40	PH1	0	0	0	0	0	0	0	0	0		
		8:46	PH2	0	0	0	0	0	0	0	0	0		
		9:09	SW1	0	0	0	0	0	0	0	0	0		
		8:53	SW2	0	0	0	0	0	0	0	0	0		
		8:55	SW3	26	48	1	0	0	0	0	0	75		
		8:58	SW4	2	0	0	0	0	0	0	0	2		
7/29/14	1	14:52	FB	0	11	0	0	0	0	0	0	11	PSK	
		13:54	PH1	0	0	2	14	0	0	0	0	16		
		14:06	PH2	0	0	0	0	0	0	0	0	0		
		15:05	SW1	0	0	0	0	0	0	0	0	0		
		14:11	SW2	0	0	1	0	0	0	0	0	1		
		15:17	SW3	3	0	0	0	0	0	0	0	3		
		15:44	SW4	0	0	0	0	0	0	0	0	0		
7/30/14	1	8:37	FB	0	2	1	87	0	0	0	0	90	JWR	11 pelican below 4 (No gulls)
		8:12	PH1	0	0	0	0	0	0	0	0	0		
		8:20	PH2	0	0	0	0	0	0	0	0	0		
		8:31	SW1	0	4	0	0	0	0	0	0	4		
		8:22	SW2	0	0	2	0	0	0	0	0	2		
		8:25	SW3	17	19	0	1	0	0	0	0	37		
		8:33	SW4	0	0	0	0	0	0	0	0	0		
7/31/14	1	14:29	FB	0	1	0	1	0	0	0	0	2	PSK	
		13:42	PH1	0	0	0	5	0	0	0	0	5		
		13:45	PH2	0	0	0	0	0	0	0	0	0		
		14:43	SW1	0	0	0	0	0	0	0	0	0		
		13:53	SW2	0	0	9	0	0	0	0	0	9		
		15:02	SW3	0	0	0	0	0	0	0	0	0		
		15:05	SW4	0	0	0	0	0	0	0	0	0		
8/1/14	1	8:54	FB	0	0	0	88	0	0	0	0	88	EHK	
		8:16	PH1	0	0	0	1	0	0	0	0	1		
		8:23	PH2	0	0	0	0	0	0	0	0	0		
		8:51	SW1	0	9	0	0	0	0	0	0	9		
		8:26	SW2	0	0	0	0	0	0	0	0	0		
		9:11	SW3	5	15	0	0	0	0	0	0	20		
		9:14	SW4	0	6	0	0	0	0	0	0	6		
8/2/14	1	14:07	FB	0	0	0	35	0	0	0	0	35	EHK	
		13:47	PH1	0	0	0	7	0	0	0	0	7		
		13:50	PH2	0	0	0	0	0	0	0	0	0		
		14:25	SW1	0	0	0	0	0	0	0	0	0		
		13:53	SW2	0	0	0	0	0	0	0	0	0		
		14:36	SW3	0	0	0	0	0	0	0	0	0		
		14:37	SW4	11	13	0	0	0	0	0	0	24		

# 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 Data	69.1	69.3	5.0
	69.5	69.6	5.0
	69.8	70.0	5.0
	69.7	69.9	5.0
	69.9	70.1	5.0
	70.3	70.4	5.0
AVG:	69.9		4.9

**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
7/27/14			1.4	6.9	14.1	9.8		1.7	8.3	8.3	Closed	1.6	9.1	9.0	39.9
	1.3	9.9	1.4	6.9	13.9	9.9	10.0	1.6	8.2	8.2		1.7	9.0	8.9	
	1.4	9.8	1.4	7.1	14.1	10.9	11.0	1.6	8.4	8.3		1.6	9.1	9.0	
7/28/14			1.4	6.9	14.0	9.8		1.6	8.2	8.2		1.7	8.9	8.9	40.0
	1.2	9.9	1.5	7.1	14.0	10.2	10.2	1.7	8.2	8.2		1.6	8.9	9.0	
	1.3	10.0	1.5	7.1	14.1	10.9	11.0	1.7	8.3	8.3		1.6	9.0	9.1	
7/29/14			1.5	6.9	14.0	9.7		1.6	8.2	8.3		1.6	9.0	8.9	40.0
	1.3	10.1	1.7	7.0	14.0	10.3	10.4	1.5	8.3	8.3		1.6	8.9	9.0	
	1.3	10.3	1.5	7.0	14.0	10.2	10.2	1.5	8.4	8.4		1.6	9.0	9.1	
7/30/14			1.3	7.0	14.0	9.5		1.5	8.3	8.3		1.6	9.0	8.9	40.0
	1.2	9.9	1.4	7.0	14.0	9.9	9.9	1.5	8.4	8.4		1.6	9.1	9.0	
	1.4	10.0	1.6	7.5	13.6	10.2	10.2	1.6	8.9	9.0		1.6	9.0	8.9	
7/31/14			1.4	7.5	13.5	9.6		1.5	9.0	9.1		1.5	9.0	9.0	39.9
	1.1	10.1	1.4	7.5	13.4	9.5	9.5	1.6	8.9	9.0		1.6	9.0	9.0	
	1.3	10.0	1.4	5.6	13.6	10.9	10.9	1.7	9.1	9.0		1.7	8.9	8.9	
8/1/14			1.5	5.6	13.5	9.3		1.5	9.5	9.4	1.6	8.9	8.9	40.0	
	1.2	9.9	1.5	5.7	13.6	9.8	9.8	1.4	9.5	9.6	1.4	9.1	9.1		
	1.3	9.9	1.6	6.9	13.7	9.9	9.9	1.5	9.0	9.0	1.6	9.0	9.0		
8/2/14			1.5	6.9	13.4	9.4		1.5	9.1	9.1	1.6	8.9	8.9	40.0	
	1.1	10.0	1.4	7.0	13.5	9.9	9.9	1.4	8.9	8.9	1.6	8.9	8.9		
	1.2	10.1	1.6	7.0	13.5	9.9	9.9	1.5	9.0	9.1	1.6	9.0	9.0		
AVG:	1.3	10.0	1.5	6.9	13.8	10.0	10.2	1.6	8.7	8.7	Closed	1.6	9.0	9.0	40.0

Spill % values represent daily average from operations status report