

# The Dalles Dam Fishway Status Report

11/19/2016

Inspection Period: 11/13/2016 - 11/19/2016

THE DALLES DAM



US Army Corps  
of Engineers  
Portland District

*Fishways are inspected twice daily plus one SCADA inspection*

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: 21		Temperature: 55.6 °F	
			Comments: Fall like conditions on project		Secchi: 5.0 feet	
<b>NORTH FISHWAY</b>						
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'	1.3			
Entrance weir N1	0	depth (≥ 8')	9.2			
Entrance weir N2	0	Closed				
PUD Intake differential	0	≤ 0.5'				
<b>EAST FISHWAY</b>						
Exit differential	0	≤ 0.5'				
Removable weirs 154-157	2	Per forebay	Weir in transition			
Weir 158-159 differential	0	1.0' ± 0.1'				
Count station differential	0	≤ 0.3'	Picket leads raked as needed.			
Weir crest depth	0	1.0' ± 0.1'				
Junction pool weir JP6	0	depth (≥ 7')	10.7			
East entrance differential	0	1.0' - 2.0'	1.5			
Entrance weir E1	0	No criteria	0.0			
Entrance weir E2	0	depth (≥ 8')	12.5			
Entrance weir E3	0	depth (≥ 8')	12.5			
Collection channel velocity	0	1.5 - 4 fps	3.28			
Transportation channel velocity	0	1.5 - 4 fps	2.66			
North channel velocity	0	1.5 - 4 fps	2.84			
South channel velocity	0	1.5 - 4 fps	3.48			
West entrance differential	0	1.0' - 2.0'	1.5			
Entrance weir W1	0	depth (≥ 8')	10.3			
Entrance weir W2	0	depth (≥ 8')	10.3			
Entrance weir W3	0	No criteria	Closed			
South entrance differential	0	1.0' - 2.0'	1.4			
Entrance weir S1	0	depth (≥ 8')	8.7			
Entrance weir S2	0	depth (≥ 8')	8.7			
<b>JUVENILE PASSAGE</b>						
Sluiceway operation	0	Units 1, 8, 18				
Turbine trashrack drawdown	0					
spill off						
Turbine Unit Priority	1	per FPP	MU's 3, 15, and 16 OOS			
Turbine 1% Efficiency	0	per FPP				

**Birds/Sea lions:**

No sea lions observed. Primarily non-foraging cormorants on site.  
Bird observation data collected once daily. Refer to Avian Zone map and bird count.  
Two of 13 spillway avian lines broke closest to bridge. Awaiting USDA cost estimate.

**Operations:**

Analyzed fish counts from Oct 13 powerhouse outage. Results inconclusive. Provided to FPOM.

**Current Outages;**

T8 (MU15 & MU16) forced out due to transformer failure. Return unknown.  
MU3 forced out of service through 8/4/2016 due to loss of governor sump oil level  
MU21 out for exciter failure RTS unknown

**Maintenance:**

New east exit weir electrical panel FCQ7 installation ~50% complete. Work to continue with available FY17 funding.  
Planning underway for winter dewater season, East ladder out Dec 1 through end Feb for AWS backup construction. North ladder out Jan 3 - 17.

Planned winter work; west entrance weir and lift beam rehab, vegetation removal and routine PMs.  
*Long Term repair maintenance plans*; 154 -157 weir wheel replace, collection channel diffusers decommission, repair failed diffusers - all awaiting funding  
*Fish related /non-fish funded items*; Spillway crane rehab priority over spillgate 9, both awaiting funding.  
All spillway items on Critical Infrastructure list and Unfunded Requirement list.

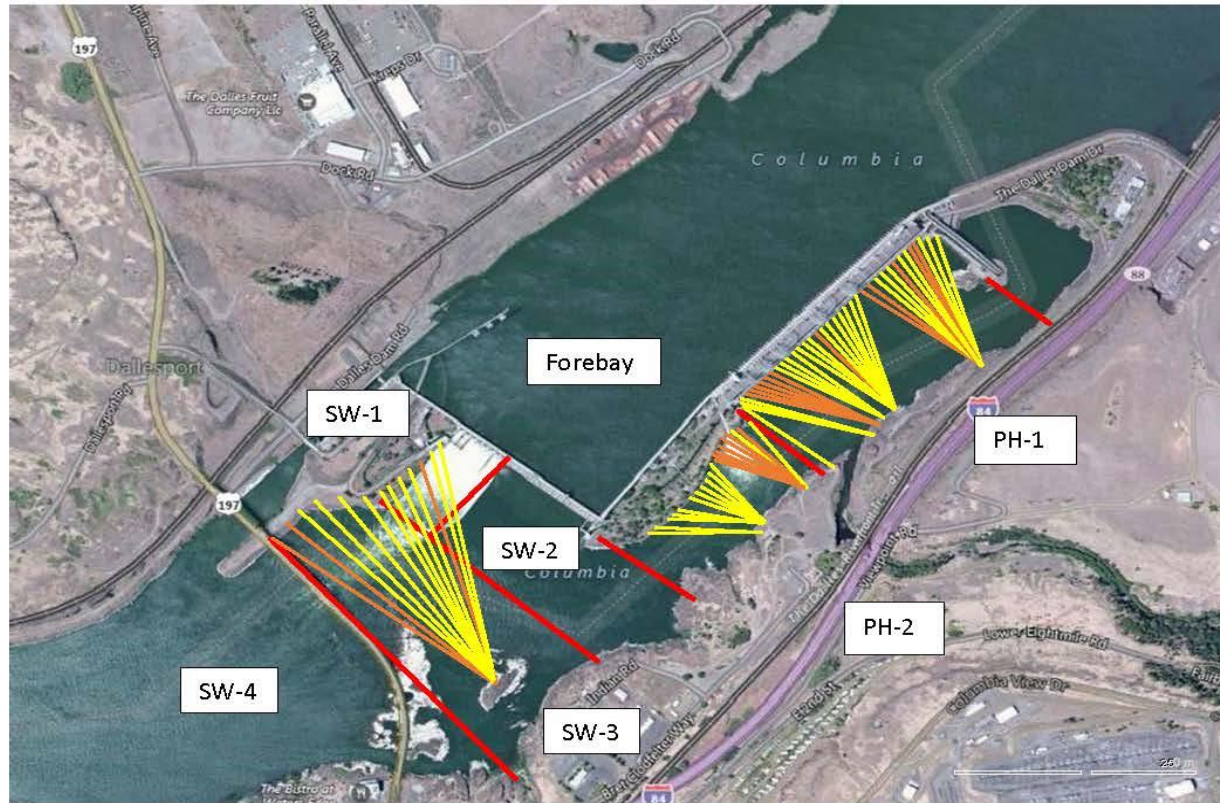
**Studies/Construction:**

Unit 1 environmental acceptable grease - MOC coordinated through FPOM.  
North fishladder rehab/rock wall stabilizing - Awaiting funding.  
East fishladder emergency backup - Prefab continues on north staging area. Excavation revealed 2 derelict unanticipated concrete beams. Removal plans include day and night jackhammer work for the beam outside 50' limit. Night jackhammer work only for beam inside 50'. MOC updated for FPOM.  
Railroad track removal - Start in water work period 2016/17. Crane rail replacement postponed to 2021.  
Tailrace crane rehab - Work resumed. Completion Dec.  
Fish unit breaker replace.- Work start fall 2017. Switch over Jan 2018.  
Transformer replacement - Install start May 2018. Expect 4 months per transformer bank. Reviewing sequence for least risk to fish passage.  
N Wasco Co PUD Memo of Agreement - Reviewing for final.  
Fish unit rehab - Award planned for 2020. Completion 2022.  
Fish unit breaker replacement - Start in water work period 2017/18  
Lamprey minor mods - Rounded weir caps planned for all entrances 2018. Fab and install with project labor. Planning meeting Dec 12.

**Research/Contractors:**

Keiwit on site for AWS backup. Monitoring work progress.

Approved by: Ron Twiner  
Operation Project Manager The Dalles Dam



Red lines = avian zones

Yellow lines = current wires

Orange lines = down or missing wires

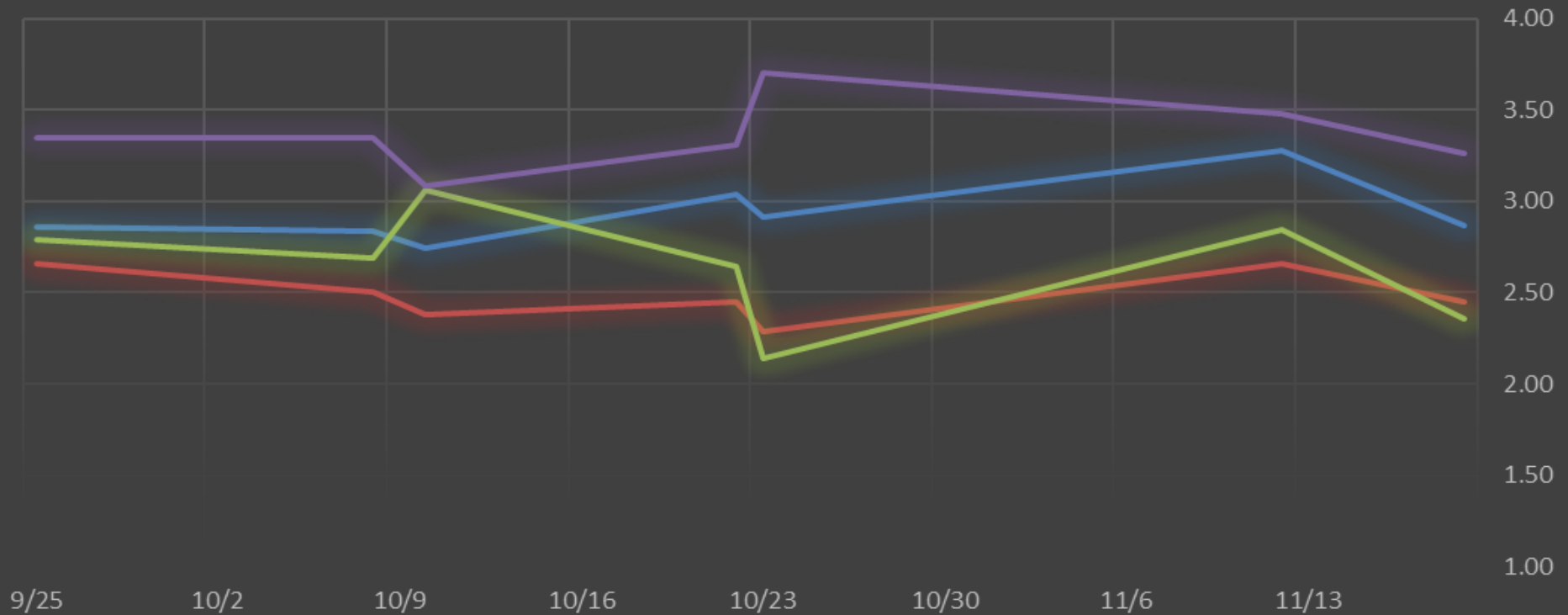
## 2016 Piscivorous Bird Counts

F=foraging, NF=non-foraging

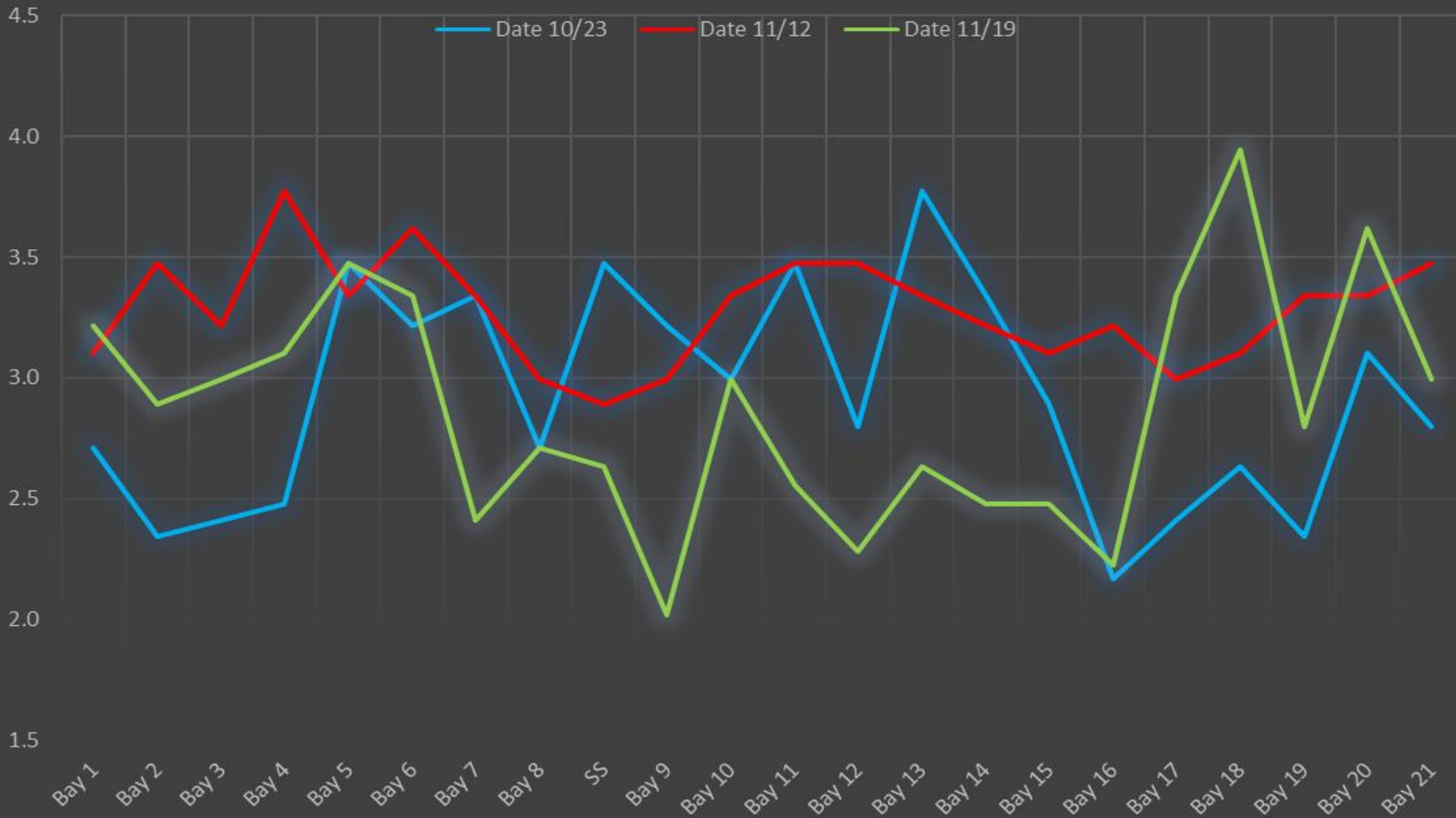
Date	Observer	AM/PM	Zone	Gull		Cormorant		Caspian tern		Grebe		Pelican		Other		Total birds in zone	Notes
				F	NF	F	NF	F	NF	F	NF	F	NF	F	NF		
11/13/16	GJF	AM	FB	0	45	0	0	0	0	0	5	0	0	0	0	50	COME
			PH1	0	4	12	22	0	0	0	0	0	0	34	19	91	
			PH2	2	0	0	0	0	0	0	0	0	0	0	0	2	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW3	0	0	1	59	0	0	0	0	0	0	0	0	60	
			SW4	0	102	0	34	0	0	0	0	0	0	0	0	136	
11/14/16	JWR	PM	FB	0	97	2	0	0	0	0	0	0	0	0	99	COME GBHE	
			PH1	0	0	0	39	0	0	0	0	0	0	8	47		
			PH2	5	2	0	4	0	0	0	0	0	0	0	11		
			SW1	0	55	0	0	0	0	0	0	0	0	3	58		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	91	2	75	0	0	0	0	0	0	0	0		168
			SW4	0	0	0	0	0	0	0	0	0	1	0	0		1
11/15/16	JWR	AM	FB	0	10	0	0	0	0	10	0	0	0	0	20	COME GBHE	
			PH1	0	35	0	0	0	0	0	0	0	0	51	86		
			PH2	0	0	0	0	0	0	0	0	0	0	0	0		
			SW1	0	2	0	0	0	0	0	0	0	0	2	4		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	0	0	68	0	0	0	0	0	0	0	0		68
			SW4	0	0	0	0	0	0	0	0	1	0	0	0		1
11/16/16	GJF	PM	FB	0	4	2	0	0	0	13	0	0	0	0	19	COME GBHE	
			PH1	0	0	15	29	0	0	0	0	0	36	19	99		
			PH2	5	0	2	0	0	0	0	0	0	0	0	7		
			SW1	0	76	0	0	0	0	0	0	0	0	1	77		
			SW2	1	0	3	0	0	0	0	0	0	0	0	4		
			SW3	0	6	3	36	0	0	0	0	0	0	0	45		
			SW4	0	68	0	54	0	0	0	0	0	0	0	0		122
11/17/16	JWR	AM	FB	0	3	0	0	0	0	0	0	0	0	0	3	1 GBHE 62 COME	
			PH1	0	0	2	58	0	0	0	0	0	0	63	123		
			PH2	9	0	0	0	0	0	0	0	0	0	0	9		
			SW1	0	0	0	0	0	0	0	0	0	0	0	0		
			SW2	0	0	0	0	0	0	0	0	0	0	0	0		
			SW3	0	27	0	64	0	0	0	0	0	0	0	0		91
			SW4	0	0	1	1	0	0	0	0	0	0	0	0		2
11/18/16	GJF	PM	FB	0	86	4	6	0	0	0	13	0	0	0	109	COME GBHE	
			PH1	2	13	5	34	0	0	0	0	0	37	12	103		
			PH2	12	0	2	0	0	0	0	0	0	0	0	14		
			SW1	0	41	0	0	0	0	0	0	0	0	5	46		
			SW2	4	0	2	0	0	0	0	0	0	0	0	6		
			SW3	0	0	4	25	0	0	0	0	0	0	0	29		
			SW4	0	40	0	12	0	0	0	0	0	0	0	0		52
11/19/16	GJF	AM	FB	0	42	4	0	0	0	9	0	0	0	0	55	COME GBHE	
			PH1	0	12	9	31	0	0	0	0	0	24	17	93		
			PH2	63	0	11	0	0	0	0	0	0	0	0	74		
			SW1	0	22	0	0	0	0	0	0	0	0	3	25		
			SW2	16	4	12	0	0	0	0	0	0	0	0	32		
			SW3	0	4	0	49	0	0	0	0	0	0	0	53		
			SW4	0	84	0	15	0	0	0	0	0	0	0	0		99
<i>daily averages</i>				2.4	19.9	2.0	14.6	0.0	0.0	0.0	1.0	0.0	0.0	2.7	4.1	46.8	

## The Dalles Dam Averages Velocities (In criteria 1.5 - 4.0 fps)

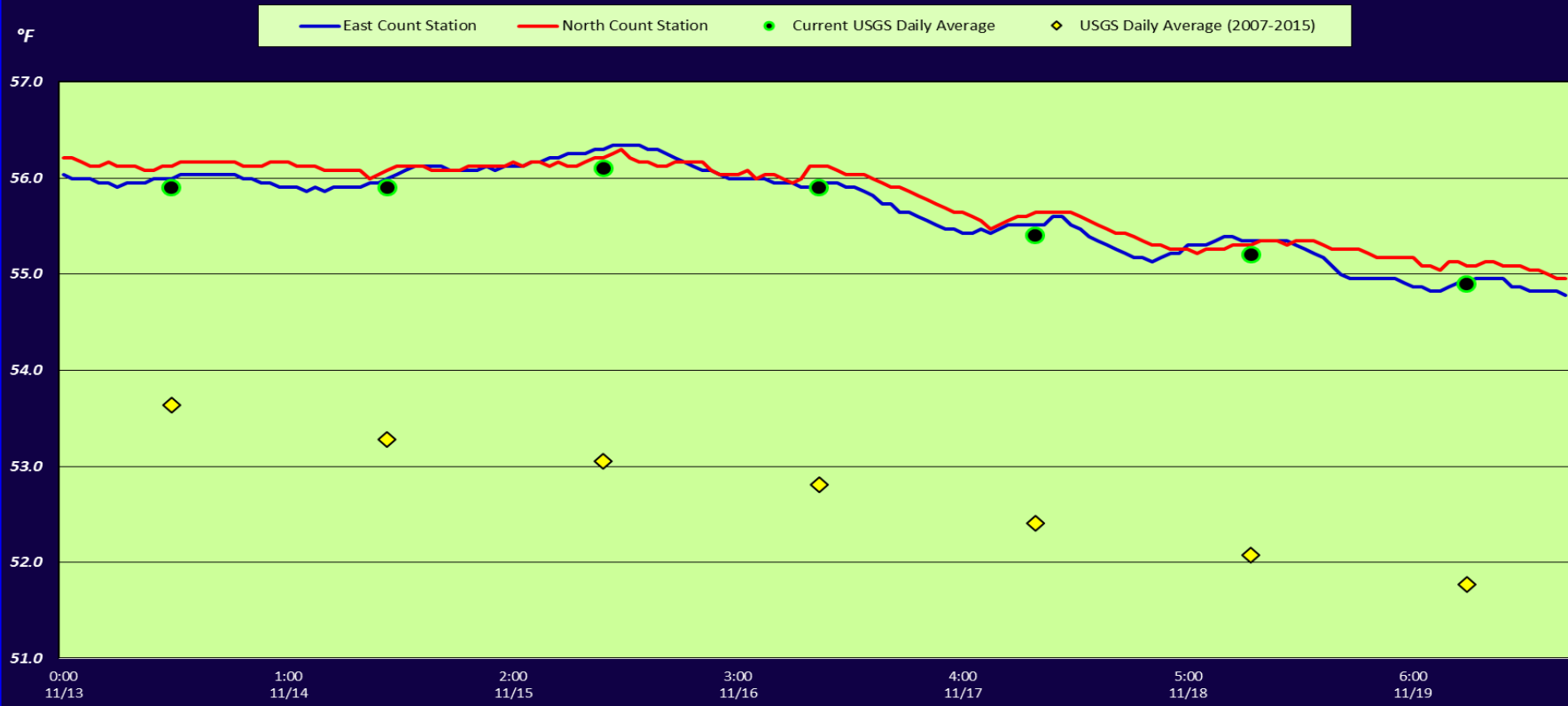
- The Dalles Collection Channel
- The Dalles North Entrance
- The Dalles Transportation Channel
- The Dalles South Rock Channel



### The Dalles Dam Collection Channel Velocites (In criteria 1.5 - 4.0 fps)



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



**USGS:** [Nov - http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201611.lcol.html](http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201611.lcol.html)

	Secchi:		Temperatures
10/23	5.0	Sun	55.9
10/24	5.0	Mon	55.9
10/25	5.0	Tue	56.1
10/26	5.0	Wed	55.9
10/27	5.0	Thurs	55.4
10/28	5.0	Fri	55.2
10/29	5.0	Sat	54.9
	5.0	AVG	55.6

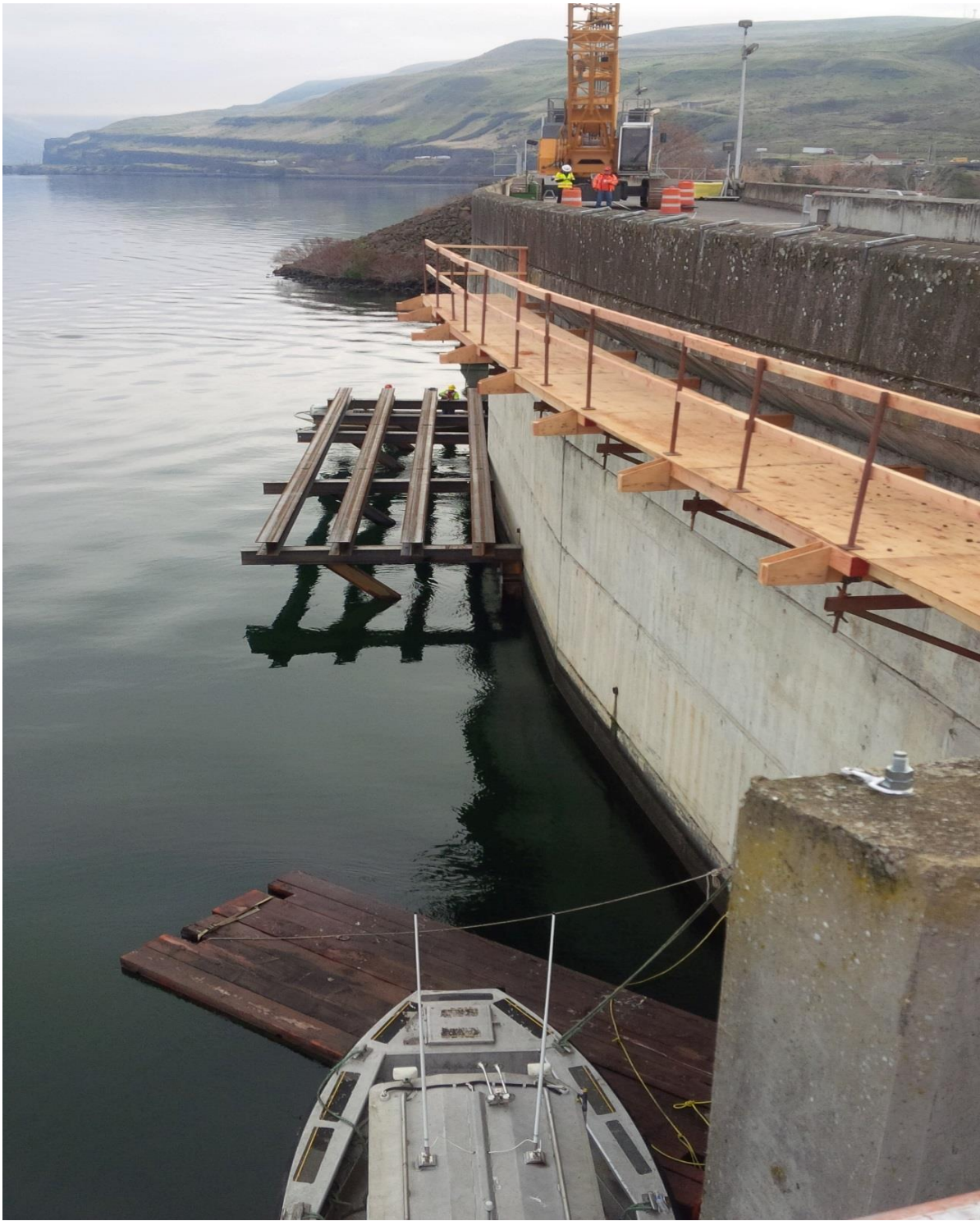
**The Dalles Dam Daily Readings and Averages for  
Temperatures, Secchi, Entrances, and Spill**

= Out of criteria

North Ladder			East Ladder												S P I L L  O F F
North Entrance		East Entrance					West Entrance			South Entrance					
Date:	Differential	N1 Depth	Differential	E1 Depth	E2 Depth	E3 Depth	JP 6	Differential	W1 Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth	
11/13			1.0	0.0	13.1	13.1	10.3	1.3	10.3	10.3		1.4	8.6	8.6	
	1.5	9.1	1.7	0.0	12.0	12.0	10.5	1.5	10.2	10.2		1.6	8.9	8.8	
	1.3	9.3	1.7	0.0	12.1	12.1	10.9	1.6	9.4	9.4		1.5	8.5	8.6	
11/14			1.5	0.0	12.0	12.1	9.9	1.3	10.3	10.3		1.5	8.6	8.5	
	1.2	9.1	1.4	0.0	12.0	12.0	9.7	1.5	9.8	9.8		1.5	8.5	8.5	
	1.2	9.3	1.5	0.0	11.8	11.8	9.5	1.5	9.7	9.7		1.5	8.4	8.4	
11/15			2.0	0.0	11.9	11.9	10.5	1.7	9.8	9.8		1.5	8.6	8.6	
	1.3	9.3	1.5	0.0	12.5	12.5	10.3	1.5	10.0	10.0		1.5	8.4	8.4	
	1.4	9.1	1.6	0.0	12.6	12.6	10.6	1.5	10.1	10.1		1.4	8.4	8.4	
11/16			1.3	0.0	12.8	12.8	9.9	1.6	10.2	10.2		1.2	8.8	8.8	
	1.4	9.1	1.6	0.0	12.5	12.5	11.2	1.6	10.0	10.0		1.6	8.4	8.4	
	1.3	9.2	1.6	0.0	12.7	12.8	12.1	1.7	10.5	10.5		1.5	8.5	8.5	
11/17			1.3	0.0	12.7	12.7	9.7	1.4	10.5	10.5		1.3	8.6	8.6	
	1.3	9.3	1.5	0.0	12.6	12.6	10.3	1.6	9.6	9.6		1.5	8.5	8.5	
	1.4	9.1	1.7	0.0	12.6	12.5	11.5	1.9	9.8	9.8		1.6	8.5	8.5	
11/18			1.2	0.0	12.6	12.6	10.4	1.4	10.5	10.5		1.4	8.6	8.5	
	1.5	9.2	1.5	0.0	12.7	12.7	11.9	1.4	11.0	11.0		1.5	8.9	8.9	
	1.3	9.1	1.5	0.0	12.6	12.7	11.5	1.4	11.0	11.0		1.4	9.0	9.0	
11/19			1.3	0.0	12.8	12.8	10.9	1.4	11.0	11.0		1.3	9.0	9.1	
	1.3	9.1	1.5	0.0	12.7	12.7	11.4	1.4	10.9	10.9		1.3	9.0	9.1	
	1.4	9.2	1.5	0.0	12.8	12.8	11.4	1.4	10.9	10.9		1.3	9.0	9.0	
<b>AVG:</b>	<b>1.3</b>	<b>9.2</b>	<b>1.5</b>	<b>0.0</b>	<b>12.5</b>	<b>12.5</b>	<b>10.7</b>	<b>1.5</b>	<b>10.3</b>	<b>10.3</b>		<b>1.4</b>	<b>8.7</b>	<b>8.7</b>	

*Fishways are inspected twice daily plus one SCADA inspection.*





AWS backup dive/ work platform progress





Unanticipated concrete beams discovered. Second beam barely visible under blue hose.