

# The Dalles Dam Fishway Status Report

3/19/2016

Inspection Period: 03/13/2016-03/19/2016

## THE DALLES DAM



US Army Corps  
of Engineers  
Portland District

The Dalles Project-Fisheries  
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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: 7		Temperature: 41.7 °F
			Comments		Secchi: 3.1 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')	10.1		
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'	Picket leads raked as needed.		
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	15.3		
East entrance differential	0	1.0' - 2.0'	1.6		
Entrance weir E1	0	No criteria	8.6	No criteria for E1	
Entrance weir E2	0	depth (≥ 8')	11.9		
Entrance weir E3	0	depth (≥ 8')	11.9		
Collection channel velocity	0	1.5 - 4 fps			
Transportation channel velocity	0	1.5 - 4 fps			
North channel velocity	0	1.5 - 4 fps			
South channel velocity	0	1.5 - 4 fps			
West entrance differential	0	1.0' - 2.0'	1.6		
Entrance weir W1	0	depth (≥ 8')	0.0		
Entrance weir W2	0	depth (≥ 8')	13.1		
Entrance weir W3	0	No criteria	Closed		
South entrance differential	0	1.0' - 2.0'	1.2		
Entrance weir S1	0	depth (≥ 8')	10.4		
Entrance weir S2	0	depth (≥ 8')	10.3		
<b>JUVENILE PASSAGE</b>					
Sluiceway operation	0	Units 1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	range: 0.1-0.8'		
Spill volume/pattern					
Turbine Unit Priority	0	per FPP	MU 15 & 16 OOS		
Turbine 1% Efficiency	NA	per FPP	Out of fish passage season		

## OTHER ISSUES:

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

No sea lion observations. Low bird numbers continue.

Bird observation data collected once daily. Refer to Avian Zone map and bird count. Bird numbers low.

Spillway avian lines repair plan approved. Spillway closure needed for installation, which will likely be problems with high flows.

### **Operations:**

North Fishway in full operation.

East fishway returned Mar7. Troubleshooting numerous exit and entrance weir automation problems resulting in numerous out of criteria.

Sluiceway open to 4 gate operation Mar 1.

### **Current Outages;**

T8 (MU15 & MU16) out due to transformer failure. Transformer replacement scheduled for spring 2018.

MU21 out for exciter failure, return Feb23

MU3 out for governor oil level failure

Awaiting tailrace crane completion to resume turbine maintenance schedule. ETR end of March.

### **Maintenance:**

Some east exit weir auto problems being investigated. Possible PLC malfunction.

Entrance W1 bulkhead installed. Weir W1 wheels replaced with new plastic wheels. To be installed next week. W3 operating in its place.

New east exit weir electrical panel FCQ7 installation on hold awaiting funding. Approx 50% completed.

Other repair maintenance plans; 154 -157 rehab/weir wheel replace, diffuser valve overhaul (rehab or decommission).

Fish related /non-fish funded items; Spillway crane and spillgate 9, both awaiting funding.

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

### **Research/Construction/Contractors:**

Lamprey minor mods - Tribal lamprey trap hoist and rounded entrance weir caps.To fab in-house 2017. Awaiting prints.

North fishladder rehab/rock wall stabilizing - Awaiting funding. Possible 2018/19.

East fishladder AWS emergency backup - Forebay diving night work continues through March. Junction pool 7' pipe valve room concrete pouring underway.

Placing sections of 7' pipe. Possible placement of steel frame in forebay, FPOM approved.

Railroad track removal - West powerhouse tailrace deck ~100' track removed/grouted. Intake deck started units 4-7. Remaining to resume next winter.

Tailrace crane rehab - Work resumed. Completion hopeful in March. Detrimental effect to unit outage/maintenance schedule.

Fish unit breaker replace.- Field measurements end of March. Manufacture over summer. Install fall 2017. Switch over Jan 2018.

Fish unit rehab - Weekly coordination meetings. Phase 1A report Jan 2018. Award 2020. Completion 2022. Possible increase flow capacity.

Transformer replacement - Install start May 2018. Coordinated through FPOM.

Approved by: Ron Twiner

Operation Project Manager The Dalles Dam



Yellow line = present avian lines

red line = Barriers between observation zones

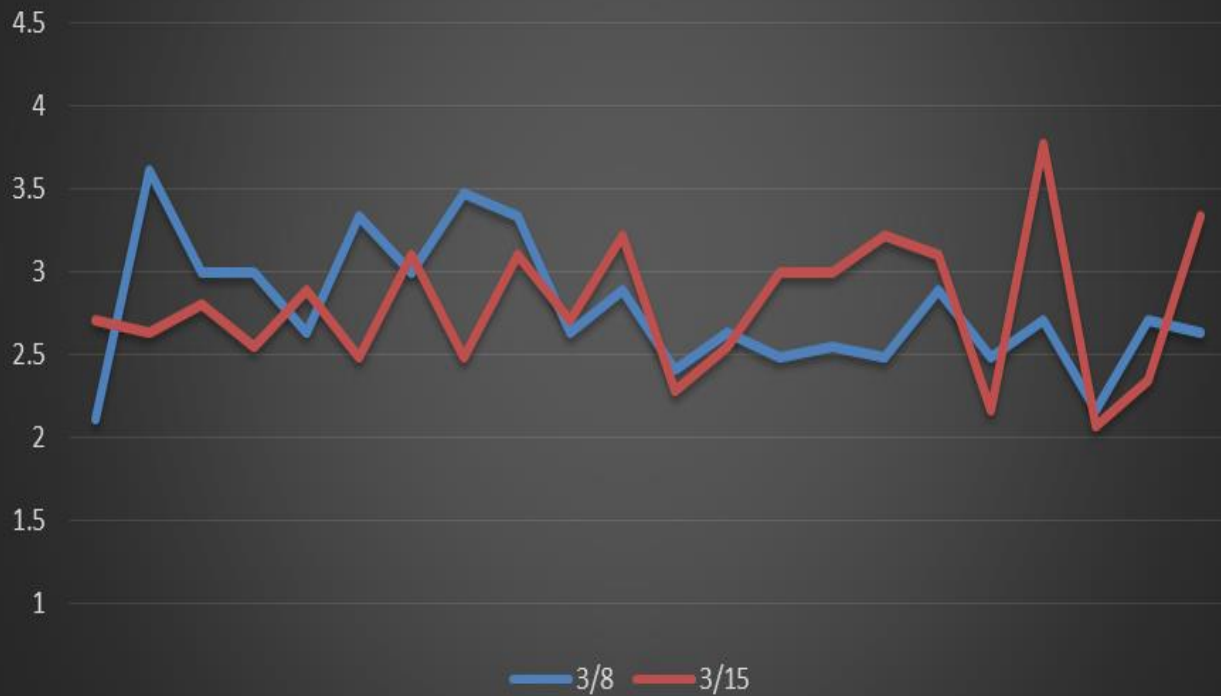
Orange lines = Missing or down avian lines

## 2017 Piscivorous Bird Counts

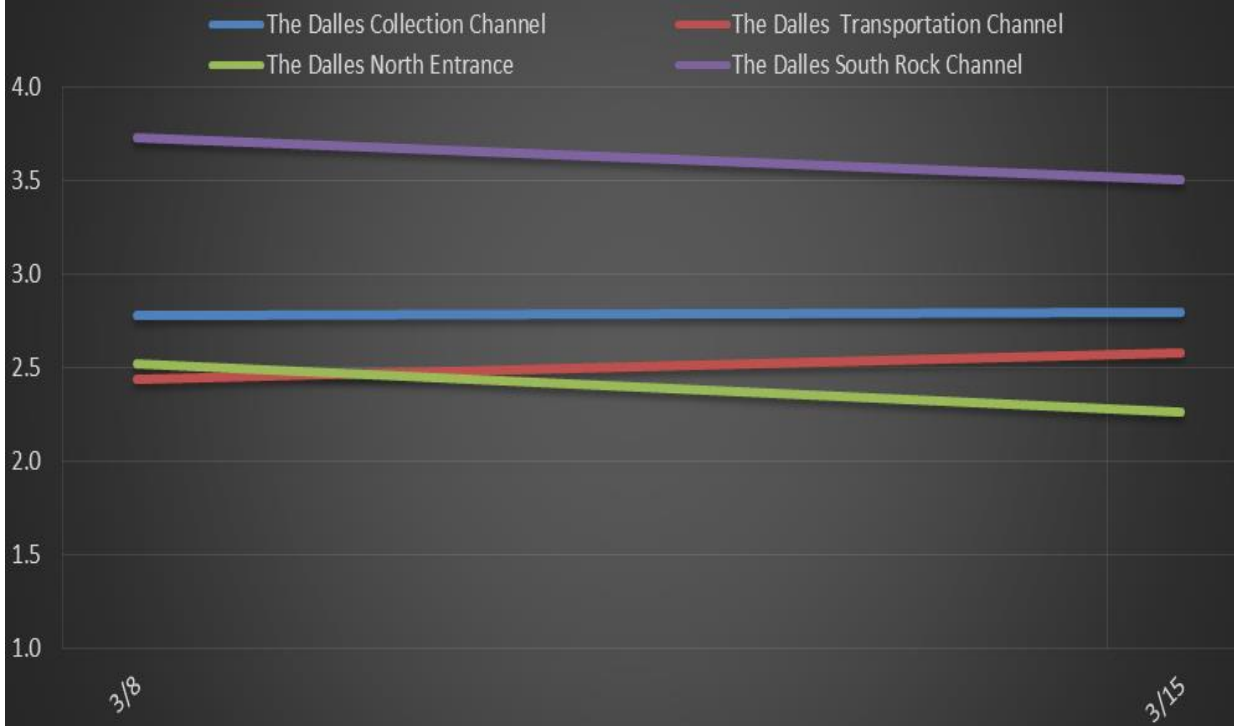
F=foraging, NF=non-foraging																		
Date	observer	Time (24 hr)	Zone	Gull		Cormorant		Caspian tern		Grebe		Pelican		Other		Total birds in zone	Notes	
				F	NF	F	NF	F	NF	F	NF	F	NF	F	NF			
3/12	GJF	PM	FB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			PH1	0	0	3	0	0	0	0	0	0	0	0	0	0	3	
			PH2	1	4	1	0	0	0	0	0	0	0	0	0	0	6	
			SW1	0	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	0	
			SW3	0	0	0	19	0	0	0	0	0	0	0	0	0	19	
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3/13	GJF	AM	FB	0	1	0	6	0	0	0	0	0	0	0	1	8		BAEA
			PH1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
			PH2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW1	0	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	0	
			SW3	0	0	0	16	0	0	0	0	0	0	0	0	0	16	
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3/14	GJF	PM	FB	0	0	0	2	0	0	0	0	0	0	0	0	2		
			PH1	0	1	1	2	0	0	0	0	0	0	0	0	4		
			PH2	0	1	0	0	0	0	0	0	0	0	0	0	1		
			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	0	0	0	0	0	0	0	0	0	0	0		
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0		
3/15	GJF	AM	FB	0	0	0	6	0	0	0	0	0	0	0	6			
			PH1	0	0	1	0	0	0	0	0	0	0	0	0	1		
			PH2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			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	0	8	0	0	0	0	0	0	0	0	8		
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0		
3/16	GJF	PM	FB	0	5	1	0	0	0	0	0	0	0	0	6			
			PH1	0	2	0	0	0	0	0	0	0	0	0	0	2		
			PH2	0	1	1	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	0	9	0	0	0	0	0	0	0	0	9		
			SW4	0	2	0	0	0	0	0	0	0	0	0	0	2		
3/17	JWR	AM	FB	0	0	0	38	0	0	0	0	0	0	0	38		COME	
			PH1	0	0	0	0	0	0	0	0	0	0	1	0	1		
			PH2	0	0	1	0	0	0	0	0	0	0	0	0	1		
			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	0	7	0	0	0	0	0	0	0	0	7		
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0		
3/18	JWR	PM	FB	0	0	0	0	0	0	0	0	0	0	0	0			
			PH1	0	0	0	0	0	0	0	0	0	0	0	0	0		
			PH2	0	0	0	0	0	0	0	0	0	0	0	0	0		
			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	0	9	0	0	0	0	0	0	0	0	9		
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0		

Key: BAEA = Bald Eagle; GBH = Great Blue Heron; COME = Common Merganser

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



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



## The Dalles Dam Adult Fish Ladder/River Temperatures



USGS: <http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201703.lcol.html>

Secchi:		Temperatures
4.0	Sun	40.9
3.0	Mon	41.1
3.0	Tue	41.3
3.0	Wed	41.3
3.0	Thurs	41.6
3.0	Fri	42.2
2.5	Sat	42.8
3.1	AVG	41.7

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

= Out of criteria

Date:	North Ladder							East Ladder						
	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
3/12			1.3	9.9	12.9	12.9	18.6	1.8		12.0	12.0	1.2	11.3	11.3
	1.3	9.9	1.3	9.9	12.9	12.9	18.6	1.7		12.1	12.1	1.1	11.4	11.4
	1.3	9.9	1.3	9.9	12.9	12.9	18.9	1.7		12.1	12.1	1.2	11.4	11.4
3/13			2.8	9.9	12.9	12.9	16.1	1.5		12.0	12.0	1.4	9.0	9.0
	1.3	10.1	2.5	14.4	14.4	13.5	15.4	1.3		12.1	12.1	1.2	8.9	8.9
	1.3	10.1					16.6	1.3		12.4	12.4	1.2	8.4	8.4
3/14			1.5	8.2	11.5	11.5	17.0	1.5		13.6	13.5	1.2	10.9	9.5
	1.4	10.1	1.0	8.2	11.5	11.5	17.5	1.3		12.1	12.2	1.2	10.3	10.3
	1.3	10.2	1.6	8.3	11.6	11.6	17.8	1.8		12.1	12.2	1.3	10.4	10.4
3/15			1.5	8.2	11.5	11.4	18.5	1.9		12.2	12.1	1.1	11.4	10.8
	1.3	10.2	1.5	8.3	11.5	11.6	18.1	1.7		13.5	13.5	1.1	11.3	10.7
	1.3	10.2	1.5	8.3	11.5	11.6	12.3	1.7		13.6	13.6	1.2	10.7	10.7
3/16			1.5	8.2	11.5	11.5	12.6	1.7		13.6	13.6	1.2	10.6	11.1
	1.3	10.2	1.5	8.2	11.4	11.5	12.6	1.7		13.5	13.5	1.1	10.8	11.1
	1.3	10.3	1.4	8.3	11.5	11.6	12.7	1.7		13.6	13.6	1.2	10.6	11.1
3/17			1.4	8.2	11.5	11.6	12.3	1.7		13.4	13.4	1.2	10.6	10.7
	1.4	10.2	1.6	8.2	11.5	11.6	11.5	1.7		13.6	13.5	1.2	10.8	10.2
	1.4	10.2	1.4	8.2	11.5	11.6	12.3	1.7		13.4	13.4	1.2	10.6	10.7
3/18			1.5	7.0	11.6	11.6	13.8	1.7		14.2	14.2	1.5	9.9	9.9
	1.4	10.1	1.5	6.5	11.5	11.5	13.9	1.7		15.5	15.5	1.5	10.0	10.0
	1.3	10.3	1.7	6.4	11.4	11.4	13.8	1.7		14.6	14.6	1.5	9.3	9.2
<b>AVG:</b>	<b>1.3</b>	<b>10.1</b>	<b>1.6</b>	<b>8.6</b>	<b>11.9</b>	<b>11.9</b>	<b>15.3</b>	<b>1.6</b>		<b>13.1</b>	<b>13.1</b>	<b>1.2</b>	<b>10.4</b>	<b>10.3</b>

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





High spill overtopping wall.





Installing AWS 7' pipe sections.