

# The Dalles Dam Fishway Status Report

5/20/2017

Inspection Period: 05/14/2017-05/20/2017

## 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: 21		Temperature: 53.9 °F
			Comments		Secchi: 3.0 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'	1.4		
Entrance weir N1	0	depth (≥ 8')	10.8		
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	Work cleaning circuit boxes performed.	
Weir 158-159 differential	0	1.0' ± 0.1'	158	callibrated and adjusted.	
Count station differential	0	≤ 0.3'		Picket leads raked as needed. Debris load light.	
Weir crest depth	0	1.0' ± 0.1'			
Junction pool weir JP6	0	depth (≥ 7')	19.2		
East entrance differential	0	1.0' - 2.0'	1.7		
Entrance weir E1	0	No criteria	8.1		
Entrance weir E2	0	depth (≥ 8')	10.8		
Entrance weir E3	0	depth (≥ 8')	10.9		
Collection channel velocity	0	1.5 - 4 fps	2.71		
Transportation channel velocity	0	1.5 - 4 fps	2.65		
North channel velocity	0	1.5 - 4 fps	2.08		
South channel velocity	0	1.5 - 4 fps	3.28		
West entrance differential	0	1.0' - 2.0'	1.5		
Entrance weir W1	0	depth (≥ 8')	12.4		
Entrance weir W2	0	depth (≥ 8')	12.4		
Entrance weir W3	0	depth (>8')	0.0	Closed	
South entrance differential	0	1.0' - 2.0'	1.4		
Entrance weir S1	0	depth (≥ 8')	10.1		
Entrance weir S2	0	depth (≥ 8')	10.1		
<b>JUVENILE PASSAGE</b>					
Sluicgate operation	0	Units 1, 8, 18			
Turbine trashrack drawdown	0	<1.5', wkly	range: 0.1-0.8'		
Spill volume/pattern	14			Exceeding 40% due to high flows	
Turbine Unit Priority	10	per FPP	MU 2, 3, 6, 9, 12, 15, 16, 21 out of service		
Turbine 1% Efficiency	1	per FPP	MU 21 at speed w/ no load		

## OTHER ISSUES:

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

Sea lions (C014, 1-31) observed daily near sluiceway and east entrance eating salmon. USDA hazing attempted. 1-31 observed below Bonneville High gull predation over island downstream of spillway upstream of bridge. USDA hazing by boat downstream of bridge. Refer to Avian Zone map and bird count.

### **Operations:**

North and east in full operation.  
Spillway open with involuntary spill.  
Sluiceway open with 6 gates (units 1, 8 and 18)  
Lost E3 HOBO temperature monitor probe (South Entrance). Replacement on progress.

### **Current Outages;**

MU2 out for hydraulic diagnosis. Return 6/1/17  
MU12 out for hydraulic diagnosis and overhaul. Return 6/23/17.  
T8 (MU15 & MU16) out for transformer failure. Transformer replacement 2018.  
MU19 out for annual. Returned 5/18/17

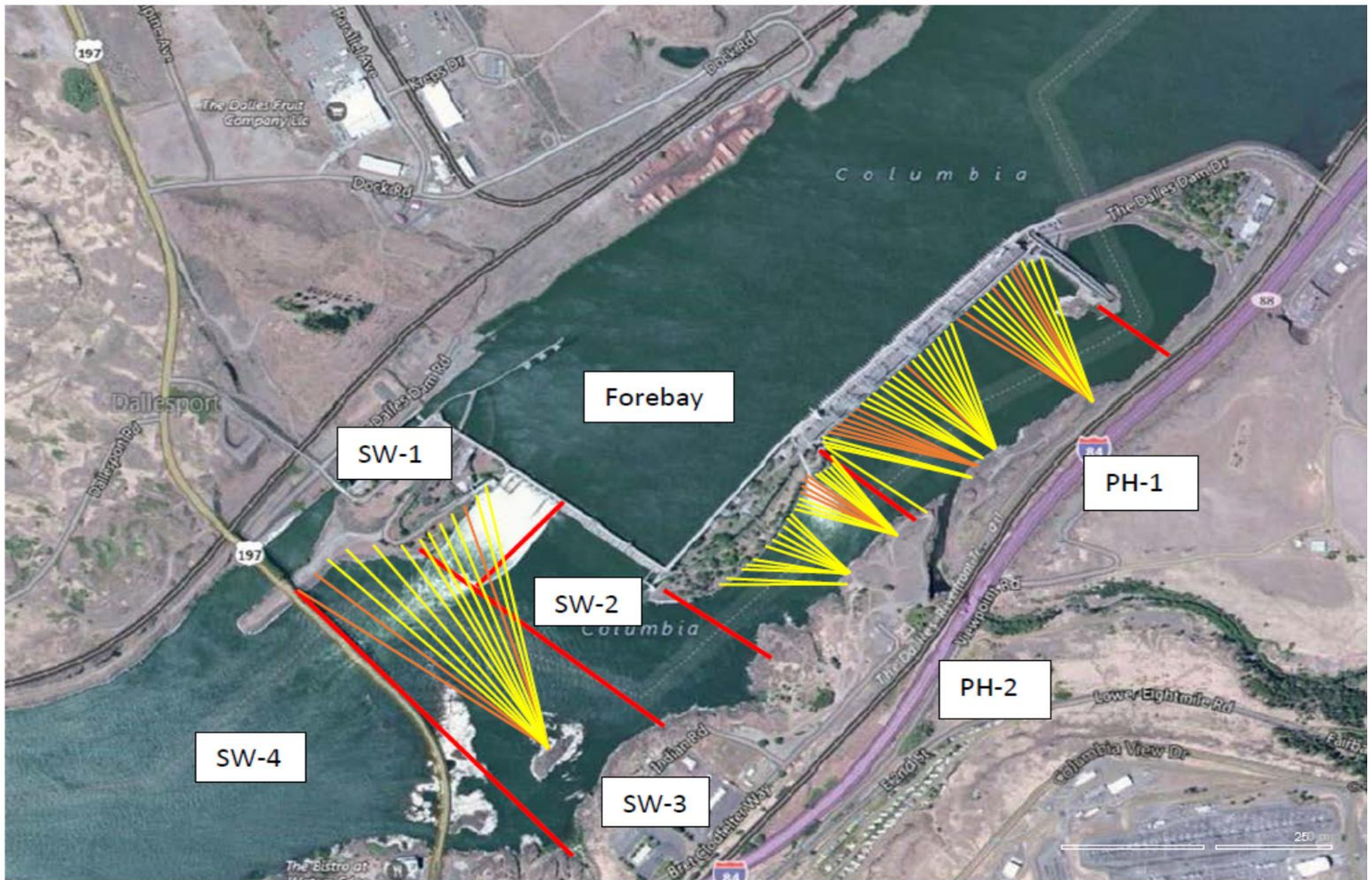
### **Maintenance;**

East exit weir electrical panel FCQ7 installation/design resuming engineering design.  
PUD crane rake repainting to start soon.  
Rebuilding spare entrance weir gearbox.  
Planning crane pad for north ladder improved dewatering access.  
Other repair maintenance plans; 154 -157 rehab/weir wheel replace, diffuser valve overhaul (rehab and decommission).  
Fish related /non-fish funded items; Spillway crane and spillgate 9, both awaiting funding.  
All spillway items on Critical Infrastructure. Spillgate 9 on large cap list, projected for 2022.

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

*AWS construction* - all work complete for season 1. Planning for season 2 and for commissioning procedures.  
*Lamprey minor mods* - Rounded entrance weir cap parts for all entrances ordered. Tribal lamprey trap hoist design 90%. Fab FY17 and install FY18.  
*Railroad track removal* - Intake deck rail removal underway at units 13-18. Lower west powerhouse asphalt section approved outside in water work period.  
*Fish unit breaker replace* - Manufacture this summer. Install fall 2017. Switchover Jan 2018.  
*Fish unit rehab* - Phase 1A report Jan 2018. Award 2020. Completion 2022. Possible increase flow capacity for redundancy. Data collection continues.  
*Transformer replacement* - Install start May 2018.

Approved by: Ron Twiner  
Operation Project Manager The Dalles Dam



Red lines = avian zones

Yellow lines = current wires

Orange lines = down or missing wires

# 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		
5/14	JWR	AM	FB	0	0	3	21	0	0	0	4	0	0	0	0	28	
			PH1	1	0	0	8	0	0	0	0	0	0	0	0	9	
			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	19	0	0	0	0	0	0	0	0	0	0	0	19	
			SW3	45	134	0	0	0	0	0	0	0	0	0	0	179	
			SW4	58	150	0	0	0	0	0	0	0	0	0	0	208	
5/15	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	0	0	0	0	0	0	0	0	0	0	
			SW4	0	0	0	0	0	0	0	0	0	0	0	0	0	
5/16	BC	PM	FB	0	0	0	7	0	0	0	0	0	0	0	7		
			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	16	0	0	0	0	0	0	0	0	0	0	0	16	
			SW3	8	35	0	0	0	0	0	0	0	0	0	0	43	
			SW4	34	0	0	0	0	0	0	0	0	0	0	0	34	
5/17	GJF	PM	FB	0	0	0	9	0	0	0	0	0	0	0	9		
			PH1	0	0	2	4	0	0	0	0	0	0	0	0	6	
			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	10	0	1	0	0	0	0	0	0	0	0	0	11	
			SW3	19	51	0	0	0	0	0	0	0	0	0	0	70	
			SW4	41	0	0	0	0	0	0	0	0	0	0	0	41	
5/18	GJF	AM	FB	0	0	4	19	0	0	0	0	0	0	0	23		
			PH1	0	0	0	0	0	0	0	0	0	0	0	0	0	
			PH2	14	0	0	0	0	0	0	0	0	0	0	0	14	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	26	0	0	0	0	0	0	0	0	0	0	0	26	
			SW3	74	46	0	0	0	0	0	0	0	0	0	0	120	
			SW4	66	0	0	0	0	0	0	0	0	0	0	0	66	
5/19	GJF	PM	FB	0	0	1	8	0	0	0	0	0	0	0	9		
			PH1	0	0	2	0	0	0	0	0	0	0	0	0	2	
			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	4	0	0	0	0	0	0	0	0	0	0	0	4	
			SW3	13	41	0	0	0	0	0	0	0	0	0	0	54	
			SW4	72	0	0	0	0	0	0	0	0	0	0	0	72	
5/20	GJF	AM	FB	0	0	1	12	0	0	0	0	0	0	0	13		
			PH1	1	0	2	0	0	0	0	0	0	0	0	0	3	
			PH2	15	0	0	0	0	0	0	0	0	0	0	0	15	
			SW1	0	0	0	0	0	0	0	0	0	0	0	0	0	
			SW2	47	0	0	0	0	0	0	0	0	0	0	0	47	
			SW3	52	64	0	0	0	0	0	0	0	0	0	0	116	
			SW4	203	0	0	0	0	0	0	0	0	0	0	0	203	

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

### 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
5/14	1309	1163	146	2	1	1	0	0	0	0	0	0
5/15	1243	1109	134	1	0	1	0	0	0	0	0	0
5/16	1434	1247	187	1	1	0	0	0	0	0	0	0
5/17	1443	1145	298	4	4	0	0	0	0	0	0	0
5/18	1093	907	186	1	1	0	0	0	0	0	0	0
5/19	1357	1082	275	1	1	0	0	0	0	0	0	0
5/20	1820	1573	247	1	1	0	0	0	0	0	0	0
<b>total</b>	<b>9699</b>	<b>8226</b>	<b>1473</b>	<b>11</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### The Dalles North

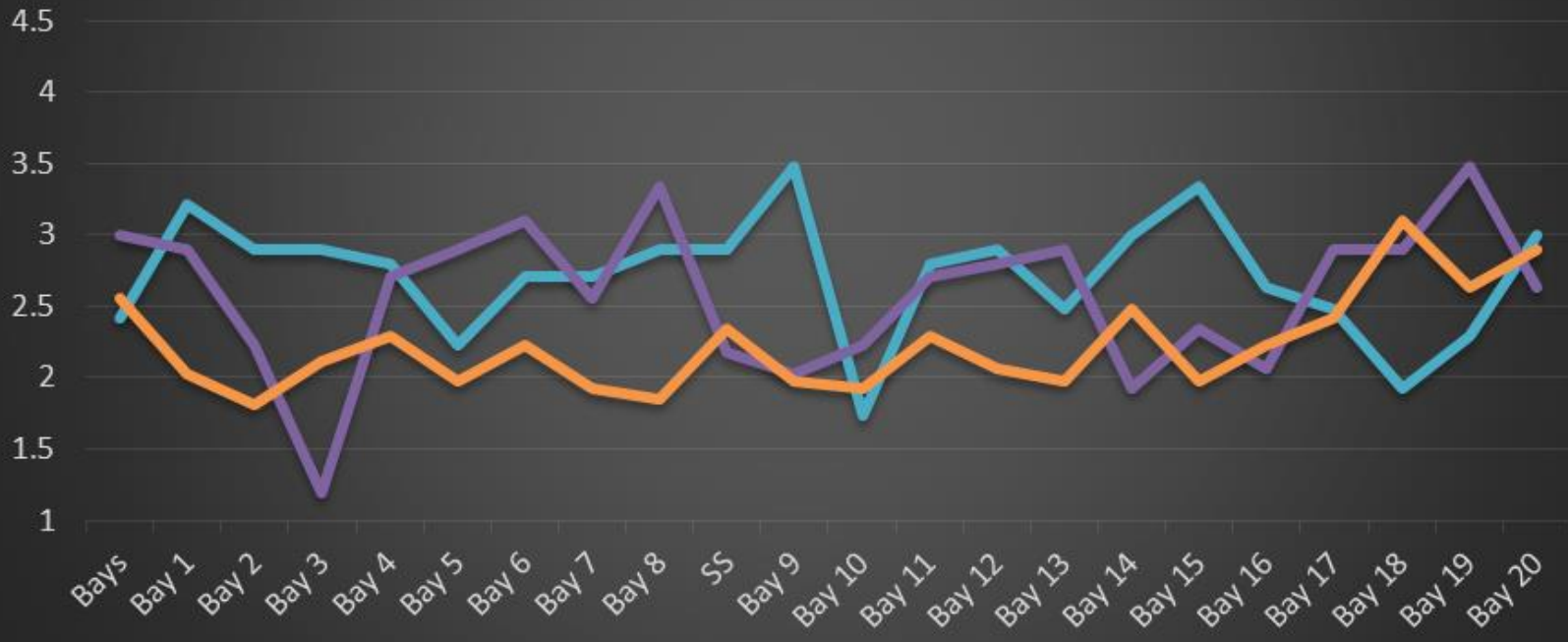
Date	All Chinook	Adult Chinook	Jack Chinook	All Steelhead	Clipped Steelhead	Unclipped Steelhead	All Coho	Adult Coho	Jack Coho	Sockeye	Chum	Pink
5/14	2	2	0	0	0	0	0	0	0	0	0	0
5/15	1	1	0	0	0	0	0	0	0	0	0	0
5/16	0	0	0	0	0	0	0	0	0	0	0	0
5/17	0	0	0	0	0	0	0	0	0	0	0	0
5/18	0	0	0	0	0	0	0	0	0	0	0	0
5/19	1	1	0	0	0	0	0	0	0	0	0	0
5/20	0	0	0	0	0	0	0	0	0	0	0	0
<b>total</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>% North</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

[http://www.fpc.org/environment/fcounts.asp?fr\\_cdy=2017&fr\\_cdm=5&fr\\_cdd=14&to\\_cdm=5&to\\_cdd=20&subbtn=salmon&op=sdaily](http://www.fpc.org/environment/fcounts.asp?fr_cdy=2017&fr_cdm=5&fr_cdd=14&to_cdm=5&to_cdd=20&subbtn=salmon&op=sdaily)

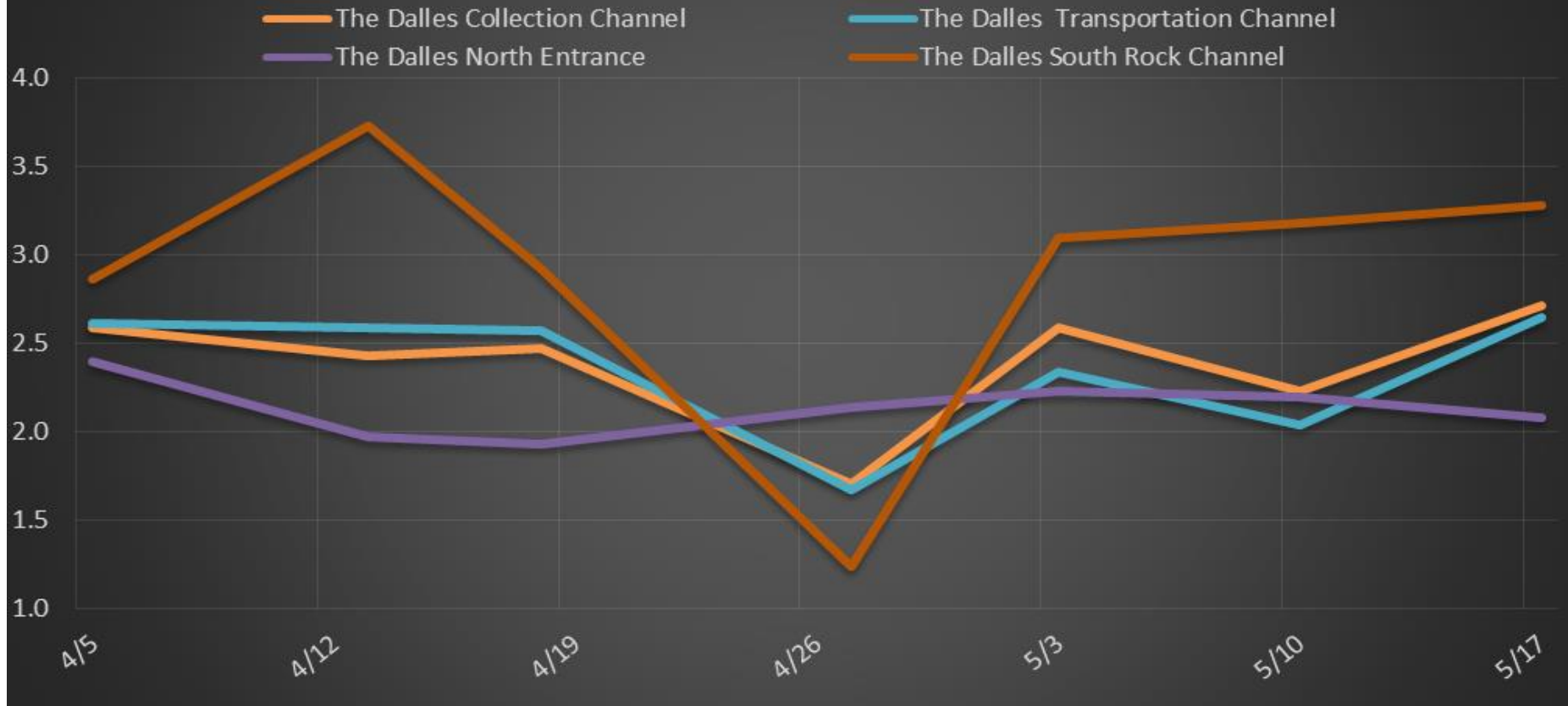


# The Dalles Dam Collection Channel Velocities (In Criteria 1.5 - 4.0 fps)

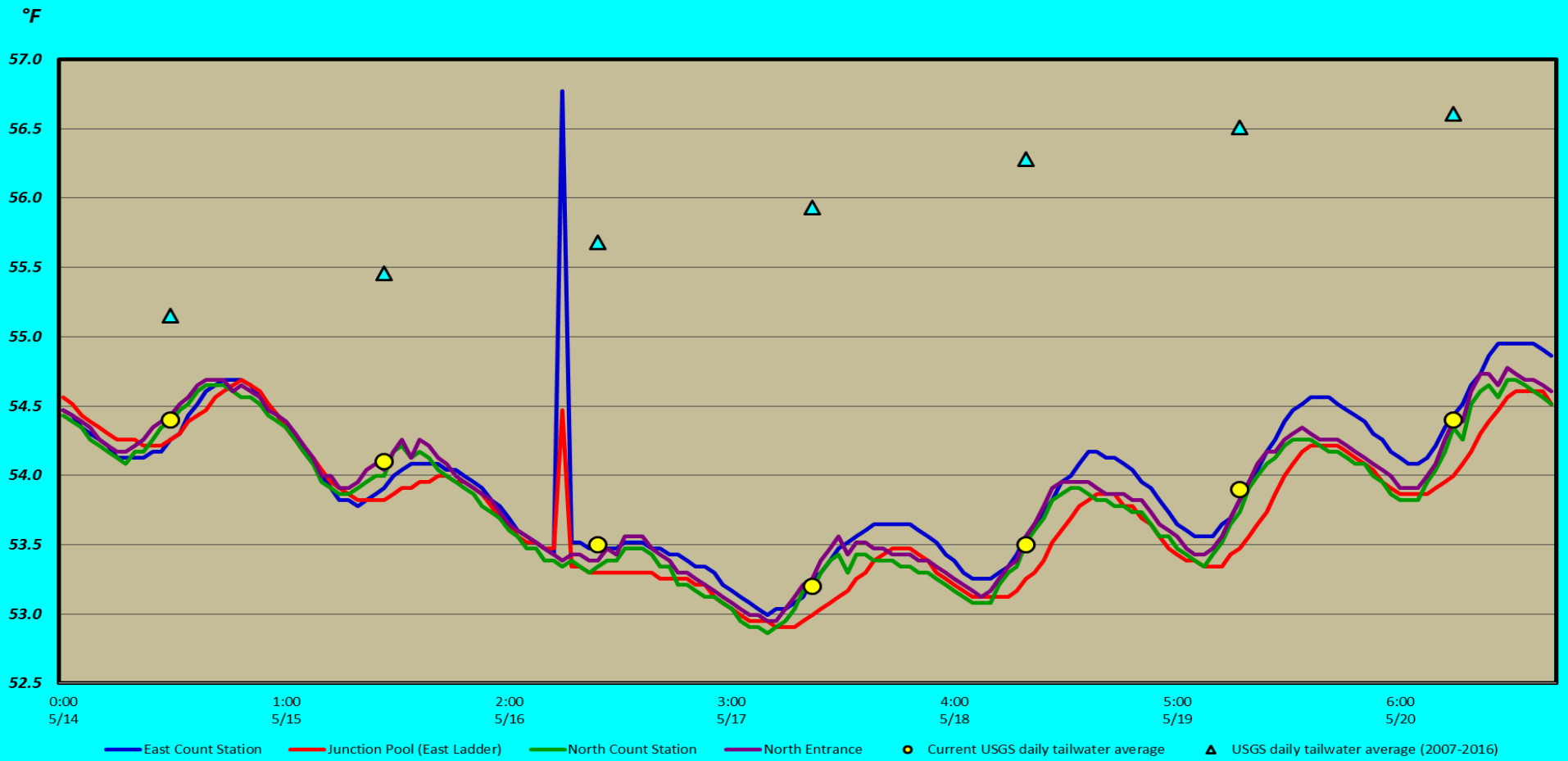
17-May 3-May 10-May



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



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





Secchi:		Temperatures
3.0	Sun	54.4
3.0	Mon	54.1
3.0	Tue	53.5
3.0	Wed	53.2
3.0	Thurs	53.5
3.0	Fri	53.9
3.0	Sat	54.4
3.0	AVG	53.9

USGS: <http://www.nwd-wc.usace.army.mil/tmt/documents/ops/temp/201704.lcol.html>

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

= Out of criteria

Spill link  
[http://www.nwd-wc.usace.army.mil/dd/nwdp/project\\_hourly/webexec/rep?r=tda&ago=0](http://www.nwd-wc.usace.army.mil/dd/nwdp/project_hourly/webexec/rep?r=tda&ago=0)

Date:	North Ladder		East Ladder										24 hr avg		
	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	
5/14			1.5	6.5	10.9	10.9	20.0	1.4	13.1	13.1		1.6	9.0	9.0	59.7
	1.4	10.9	1.5	6.5	11.1	11.1	20.0	1.5	12.9	12.9		1.5	9.8	9.8	
	1.4	10.9	1.5	6.5	11.1	11.1	20.0	1.5	12.9	12.9		1.5	9.8	9.8	
5/15			1.6	5.9	11.1	11.1	19.4	1.4	12.8	12.8		1.5	9.7	9.7	64.3
	1.4	10.9	1.6	6.1	11.9	11.9	19.6	1.4	12.3	12.3		1.5	9.8	9.8	
	1.4	10.8	1.5	5.6	11.8	11.8	19.1	1.4	12.4	12.4		1.5	9.8	9.8	
5/16			1.5	56.0	11.9	12.0	19.1	1.5	12.3	12.3		1.4	9.9	10.0	66.2
	1.4	10.7	1.5	5.6	11.9	12.0	19.1	1.5	12.3	12.3		1.4	9.9	10.0	
	1.5	10.8	1.7	5.3	10.4	10.5	18.8	1.5	12.3	12.3		1.5	10.1	10.1	
5/17			1.6	5.7	10.5	10.6	19.2	1.6	12.4	12.4		1.4	10.4	10.3	66.7
	1.4	10.8	1.8	5.0	10.4	10.4	18.5	1.6	12.4	12.4		1.4	10.4	10.4	
	1.4	10.8	1.7	5.4	10.7	10.6	18.9	1.5	12.4	12.3		1.4	10.4	10.3	
5/18			1.9	6.4	10.6	10.6	19.9	1.8	12.3	12.3		1.3	10.5	10.5	65.8
	1.4	10.8	1.8	5.4	10.4	10.5	18.9	1.5	12.2	12.2		1.2	10.5	10.6	
	1.7	10.6	1.6	6.4	10.4	10.5	19.9	1.6	12.4	12.4		1.4	10.3	10.3	
5/19			1.6	6.3	10.4	10.4	19.8	1.5	12.3	12.3		1.5	10.3	10.3	59.7
	1.4	10.8	1.7	5.1	10.4	10.5	18.6	1.6	12.1	12.1		1.4	10.2	10.2	
	1.4	10.8	1.9	4.9	10.5	10.5	18.4	1.2	12.4	12.4		1.3	10.4	10.4	
5/20			1.8	4.9	10.5	10.4	18.4	1.5	12.1	12.1		1.4	10.2	10.2	58.9
	1.5	10.7	1.8	4.8	10.4	10.5	18.3	1.5	12.4	12.3		1.3	10.4	10.4	
	1.5	10.8	1.8	5.0	10.4	10.4	18.5	1.5	12.2	12.3		1.4	10.2	10.2	
<b>AVG:</b>	<b>1.4</b>	<b>10.8</b>	<b>1.7</b>	<b>8.1</b>	<b>10.8</b>	<b>10.9</b>	<b>19.2</b>	<b>1.5</b>	<b>12.4</b>	<b>12.4</b>		<b>1.4</b>	<b>10.1</b>	<b>10.1</b>	<b>63.0</b>

Fishways are inspected twice daily plus one SCADA inspection.



Spill turbulence near south entrance. Still very passable.



Eddy at closed spillbays 9, 10 and 11