

The Dalles Dam Fishway Status Report

Date: 9/29/2013
 Inspection Period: 9/22 to 9/28/2013

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. Additional daily monitoring done via automation system in fisheries office.

The Dalles Dam	Inspections Out of Criteria	Criteria Limit	Total Number of Inspections: 21	Temperature: 68.0 F
			Comments	Secchi: 5.4 Ft.
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 1.3	
Entrance weir N1	0	depth (≥ 8')	Average 9.6	
Entrance weir N2		Closed	Bulkhead installed.	
PUD Intake differential	0	≤ 0.5'		
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'	Picketed leads raked daily due to high debris.	
Weir crest depth	0	1.0' ± 0.1'		
Junction pool weir JP6	0	depth (≥ 7')	Manually adjusted as needed.	
East entrance differential	0	1.0' - 2.0'	Average 1.6	
Entrance weir E1	0	No criteria	Average 8.5	Manually adjusted.
Entrance weir E2	0	depth (≥ 8')	Average 12.9	
Entrance weir E3	0	depth (≥ 8')	Average 12.9	
Collection channel velocity	0	1.5 - 4 fps	Average 1.9	See Velocities tab for more complete information.
Transportation channel velocity	0	1.5 - 4 fps	Average 2.2	
North channel velocity	0	1.5 - 4 fps	Average 2.6	
South channel velocity	0	1.5 - 4 fps	Average 2.9	
West entrance differential	0	1.0' - 2.0'	Average 1.4	Daily differentials & weir depths, see AVGS tab.
Entrance weir W1	0	depth (≥ 8')	Average 8.1	
Entrance weir W2	0	depth (≥ 8')	Average 8.1	
Entrance weir W3	0	No criteria	Average closed	
South entrance differential	0	1.0' - 2.0'	Average 1.1	
Entrance weir S1	2	depth (≥ 8')	Average 8.0	7.9' due to low tailwater.
Entrance weir S2	3	depth (≥ 8')	Average 8.0	7.9' due to low tailwater.
JUVENILE PASSAGE				
Sluiceway operation	0	units 1,8,17	MU18 out of service; sluice gates closed. MU17 in service; sluiceways 17-2, 17-3 open.	
Turbine trashrack drawdown	0	<1.5', wkly	Range: 0.2' - 0.4'	
Spill volume	0	40%, 24hr	On seal.	
Spill Pattern	0	per FPP	On seal.	
Turbine Unit Priority	0	per FPP		
Turbine 1% Efficiency	0	per FPP		

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

Bird observation data collected twice daily. Gull numbers low. Cormorant numbers increasing on rocks or towers. See avian zones map and distribution tabs. No sea lion sightings this week.

Operations:

The Dalles north ladder, east fish ladder, and Ice/Trash sluiceway is operational in accordance with the Fish Passage Plan (except sluiceways open at MU17 instead of MU18).

MU18 OOS 0600 8/26/2013 to 1700 10/3/2013 for digital governor installation.

MU15 OOS 0700 9/17/2013 to 1700 10/31/2013 for five year over haul.

MU20 OOS 0600 9/23/2013 to 1700 9/26/2013 for annual.

MU4 OOS 0630 9/25/2013 to 1700 9/26/2013 for DC distribution work - Black Start Unit.

Gatewell drawdown completed 9/27. Values ranged from 0.2-0.4' and were within criteria.

Maintenance:

Fishway winter maintenance dewatering schedule out for review. East fishway Dec to mid Jan. North fishway mid Jan through Feb.

Winter maintenance items include; resecure west entrance diffuser grating, rehab east exit weirs, remove north ladder vegetation.

Studies:

PIT - Temporary Thin Wall PIT tag Antenna continues to work successfully. Most likely to be permanent option.

EFL - NWW VE Alternative - direct burial closed conduit to AWS chamber with orifice plate energy dissipation.

This concept maintains the intake design and location of a 10' steel pipe presented in the 60% DDR submission. The boring would occur perpendicular to the dam face in the horizontal direction and slope downward at 17%. This results in a short exposure of conduit near the toe of monolith 5. The horizontal or plan view alignment of the 10' pipe angles left and continues at the 17% slope until it nears the diffusers of the AWS chamber where it angles right and connects to the alignment of the 8'x8' culvert from the AWS chamber. The 8'x8' culvert needs to be dewatered and expanded to 8'x10' and have the exit into the AWS more adequately formed for high velocity diffusion. A gate valve is placed at the transition of the 10' circular conduit to the 8'x10' culvert. Two orifice plates will be placed upstream of the transition in the straight section of alignment to dissipate excess energy.

PUD - "Freedom" turbine proposal out for review. Modification of original FERC license underway.

Lamprey - Planned lamprey passage improvements; weir orifice floor plating in lower ladders for attachment through high velocity zones, possible holding tank for tribal collected lamprey.

Research/Contractors:

Tribal lamprey trap collection at east count station completed for season. All equipment removed from project. Collected lamprey used to reintroduce into various tributaries to reestablish lamprey populations. Total The Dalles catch were; Yakama Nation - 198, Nez Perce - 54, Umatilla - 97.

WDFW Columbia River Northern Pikeminnow Management Program Dam Angling continues with low catch rates. Most fishing primarily from powerhouse deck. Dam angling effort hours - 9.00, Total NPM - 25, NPM \geq 230 - 25. Fishing scheduled through 9/30.

Derelict USGS I-beams on pier noses removed by project maintenance. Plans to remove remaining pier nose antennas this winter by dive.

USFWS plans to remove all of their old equipment this winter dewatering and maintenance period from the fish ladders.

Second phase utilizing goats to remove vegetation around north fish ladder scheduled for 9/30 to 10/4. First attempt had limited results.

One more set of derelict Vertical Barrier Screens (VBS) from 90's research remains in MU 12 gatewell slot. ROV inspection verified location.

VBS previously removed are currently stored on the north side.

University of Idaho adult RT new antennas both fish ladders completed and operating. Plans to clean up unused antennas this winter.

Normandeau fish counters performing video counting through 9/30 and visual counting to 10/31. No winter time counting this year.

Approved by;
Ron D. Twiner
Operation Project Manager
The Dalles Dam

DART The Dalles Adult Ladders Daily Usage with Spill Percent and Outflow

Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye				Coho				Jack Coho				Lamprey				Spill Pct [Right]	Outflow (kcfs)
	Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder		Left Ladder		Right Ladder							
	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#	Pct	#						
9/22/2013	89	11604	11	1426	85	1393	16	256	77	2472	23	733	77	918	23	272	0	0	80	330	20	82	89	58	11	7	67	10	33	5	0	73.5		
9/23/2013	98	9584	1.6	151	98	2232	2.3	52	93	2095	6.7	151	95	716	5.5	42	0	0	98	526	2.4	13	88	37	12	5	86	12	14	2	0	95.5		
9/24/2013	98	10898	2.3	252	96	886	3.8	35	93	5315	7.4	422	93	1849	6.9	138	0	0	94	498	6	32	99	66	1.5	1	80	8	20	2	0	84.4		
9/25/2013	99	10446	0.8	88	99	1722	0.8	14	95	3334	4.7	166	94	1014	5.6	60	0	0	96	616	4.3	28	93	56	6.7	4	80	4	20	1	0	96.2		
9/26/2013	99	10417	0.8	84	98	1054	2.1	23	96	1960	4	82	95	593	4.8	30	0	0	97	319	3	10	97	38	2.6	1	50	1	50	1	0	95.5		
9/27/2013	100	10436	0.4	38	98	1004	1.7	17	94	1769	6.3	119	94	558	5.9	35	0	0	97	636	2.6	17	98	53	1.9	1	100	1	0	0	0	94.3		
9/28/2013	98	7909	1.8	146	95	1038	5	55	92	2082	8.3	188	91	646	8.8	62	0	0	91	314	8.7	30	78	29	22	8	0	0	0	0	95.5			
Weekly Total		71294		2185		9329		452		19027		1861		6294		639	0	0		3239		212		337		27		36		11				
Date	Chinook				Jack Chinook				Steelhead				Steelhead Wild				Sockeye				Coho				Jack Coho				Lamprey				Spill Pct	Outflow
YTD	Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct		Left Ladder Pct		Right Ladder Pct							
	97		3		95.4		4.6		91.1		8.9		90.8		9.2		0		0		93.9		6.1		92.6		7.4		76.6		23.4			

NOTES:

ay, if either the Right Ladder or Left Ladder species count is: negative or null for the day.

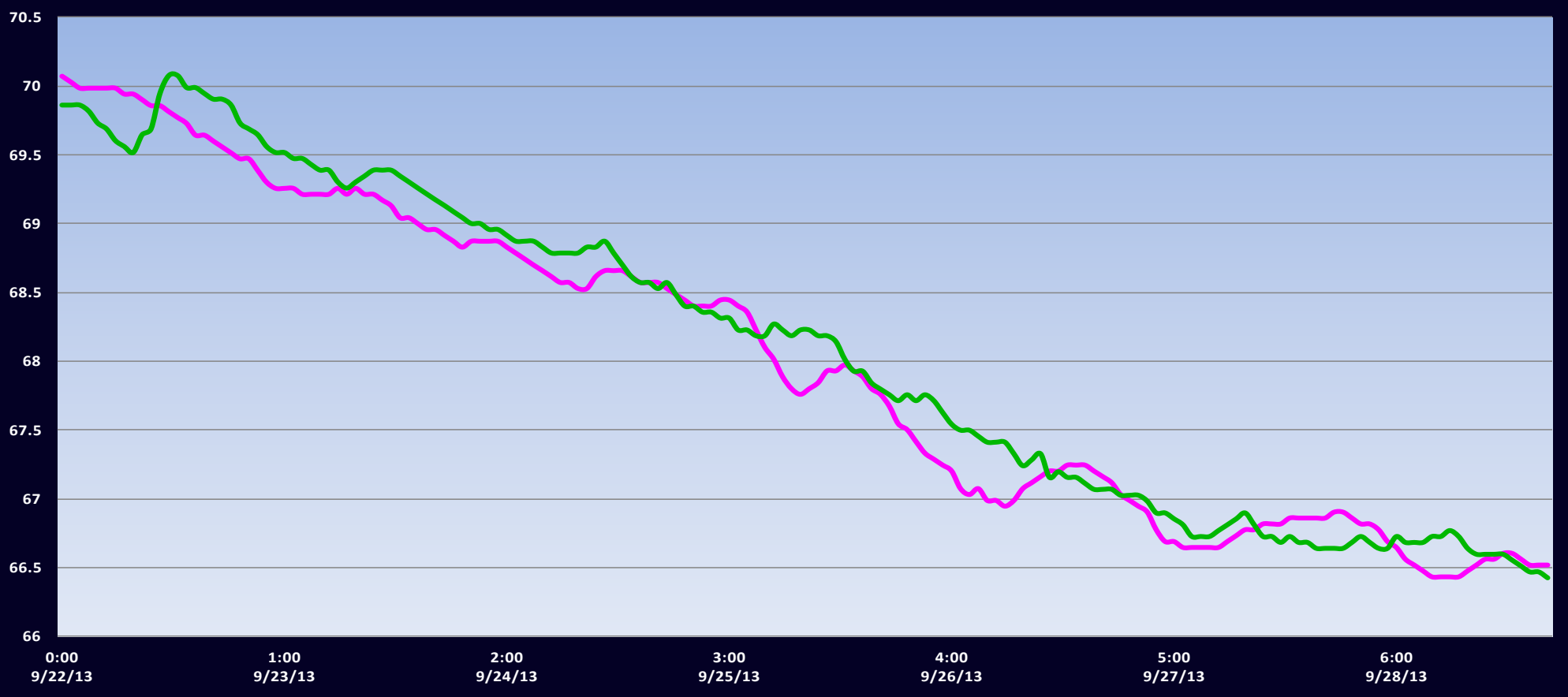
: the side of the river when facing downstream.

tesy of U.S. Army Corps of Engineers

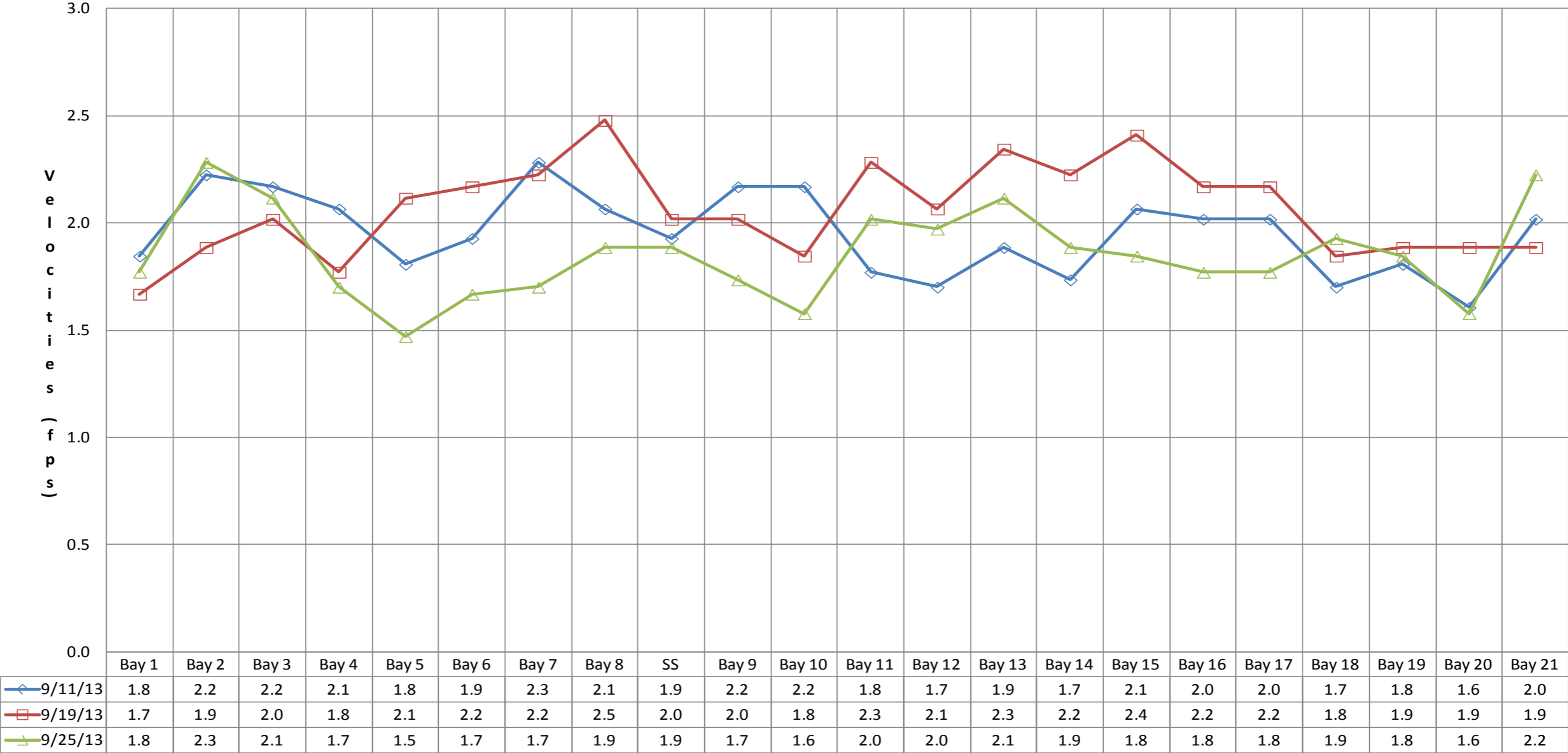
The Dalles Dam Adult Fish Ladder River/Water Temperatures

°F

East Fish Ladder North Fish Ladder



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



The Dalles Dam Avian Zones

Washington Shore

FB1

PH-T1

PH-T2

SW-T1

PH-T3

SW-T3

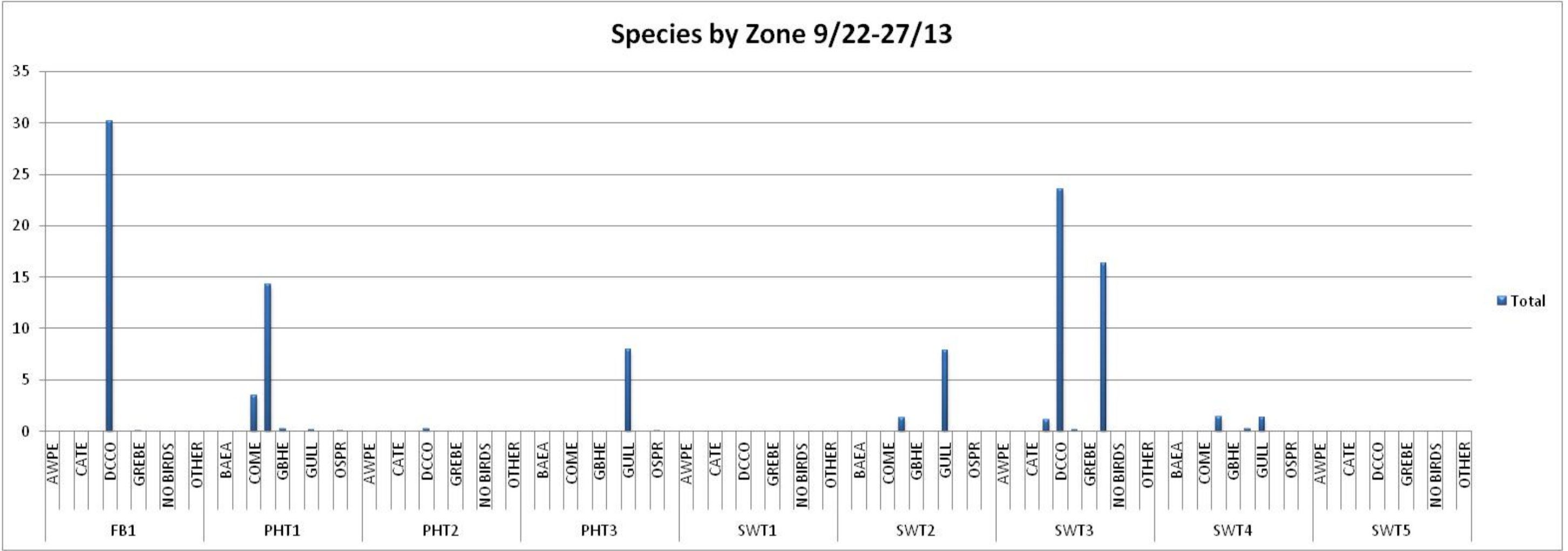
SW-T2

SW-T4

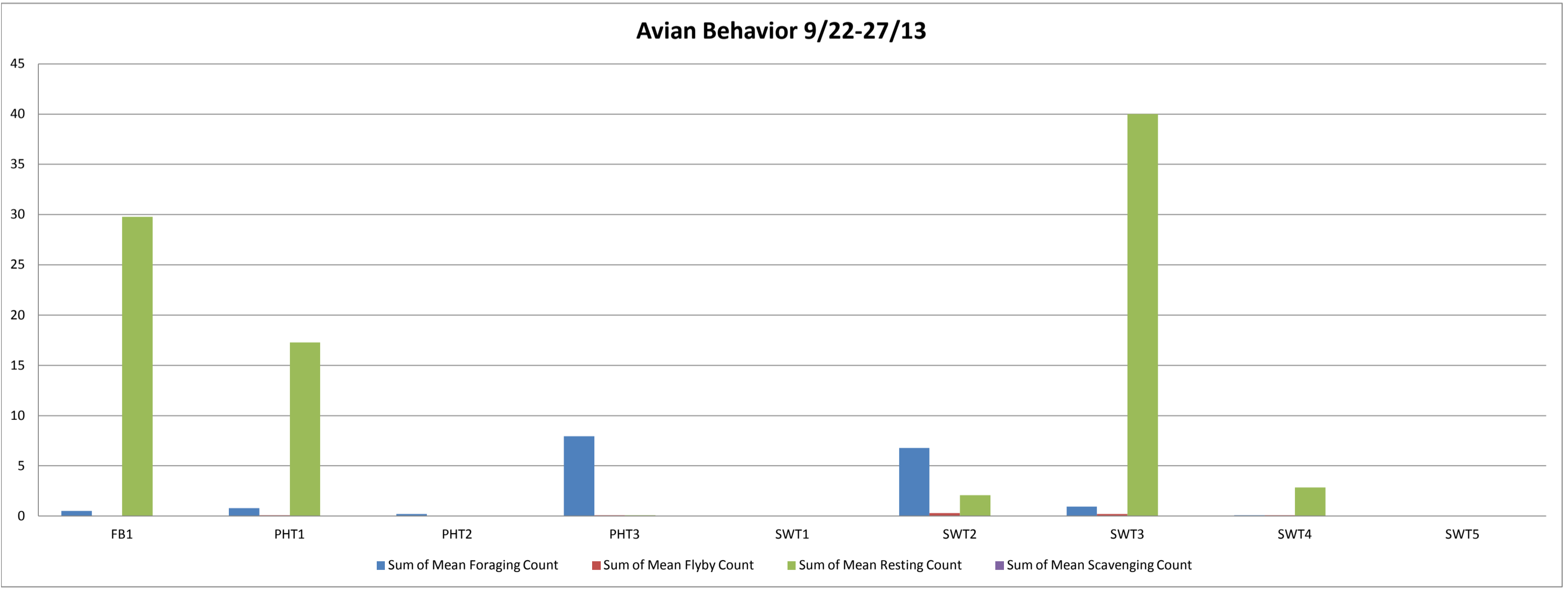
SW-T5

Oregon Shore





AWPE - American White Pelican; BAEA - Bald Eagle; CATE - Caspian Tern; COME - Common Merganser; DCCO - double crested cormorant; GBHE - Great Blue Heron; GREBE - Grebe; Gull- Gull (all species); OSPR - Osprey



Temp:			Secchi:	
	69.9	SUN		5.0
	69.2	MON		5.0
	68.6	TUES		5.0
	68.1	WED		7.0
	67.2	THUR		5.5
	66.7	FRI		5.0
	66.6	SAT		5.0
AVG:	68.0	AVG:		5.4

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

= out of criteria

Date:	North Fish Ladder		East Fish Ladder					East Fish Ladder			South Entrance			KCFS	
	North Entrance		East Entrance					West Entrance			South Entrance			% Spill	
	Differential	N1 Depth	Differential	E1Depth	E2 Depth	E3 Depth	JP 6	Differential	W1Depth	W2 Depth	W3 Depth	Differential	S1 Depth	S2 Depth	
22-Sep-13	1.2	9.5	1.5	8.0	12.4	12.5	7.5	1.3	8.1	8.1		1.1	7.9	8.0	O n s e a l
22-Sep-13	1.2	9.4	1.5	8.0	12.4	12.5	7.3	1.3	8.0	8.0		1.1	8.0	7.9	
22-Sep-13			1.5	8.0	13.0	13.1		1.3	8.2	8.2		1.0	8.0	8.1	
23-Sep-13	1.3	9.6	1.8	9.0	13.0	12.9	8.7	1.5	8.1	8.1		1.1	8.0	8.1	
23-Sep-13	1.3	9.5	1.7	7.9	12.9	13.0	8.6	1.5	8.2	8.2		1.2	8.0	7.9	
23-Sep-13			1.6	8.1	12.5	12.6		1.3	8.1	8.1		1.1	8.0	8.1	
24-Sep-13	1.3	9.6	1.8	9.0	13.0	12.9	8.7	1.5	8.1	8.1		1.1	8.0	8.1	
24-Sep-13	1.2	9.5	1.5	8.0	12.4	12.5	7.5	1.3	8.1	8.1		1.1	7.9	8.0	
24-Sep-13			1.4	8.9	13.0	12.9		1.4	8.0	8.0		1.1	8.0	8.0	
25-Sep-13	1.3	9.6	1.8	9.1	13.1	13.0	9.0	1.5	8.1	8.1		1.2	8.0	8.0	
25-Sep-13	1.3	9.7	1.7	11.0	12.9	12.9	9.1	1.6	8.0	8.0		1.2	8.0	8.0	
25-Sep-13			1.7	9.0	13.0	12.9		1.5	8.1	8.1		1.2	8.0	8.0	
26-Sep-13	1.4	9.5	1.6	11.0	12.9	12.8	8.8	1.6	8.0	8.1		1.1	8.0	8.0	
26-Sep-13	1.3	9.6	1.5	11.1	13.1	13.0	8.3	1.5	8.1	8.1		1.1	8.0	8.0	
26-Sep-13			1.5	11.0	13.0	12.9		1.4	8.1	8.1		1.1	8.0	8.0	
27-Jun-13	1.2	9.6	1.6	8.9	13.0	13.1	8.3	1.5	8.5	8.5		1.3	8.0	8.1	
27-Jun-13	1.3	9.5	1.5	6.0	12.9	13.0	8.0	1.4	8.0	8.0		1.1	8.0	7.9	
27-Jun-13			1.3	8.0	13.0	13.0		1.2	8.1	8.1		1.1	8.0	8.0	
28-Sep-13	1.3	9.6	1.5	6.0	13.1	13.1	8.3	1.3	8.2	8.2		1.1	8.0	8.0	
28-Sep-13	1.3	9.5	1.5	6.0	12.9	12.9	7.7	1.3	8.1	8.1		1.1	8.0	8.0	
28-Sep-13			1.4	5.9	13.0	12.9		1.3	8.1	8.2		1.1	8.0	7.9	
AVG:	1.3	9.6	1.6	8.5	12.9	12.9	8.3	1.4	8.1	8.1	closed	1.1	8.0	8.0	

Third fish way inspection for east fish ladder, east, west, and south entrances completed via automation system in fisheries office (SCADA).



Pair of Red-Necked Grebes in front of east exit.