

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#25-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: August 17 to 23, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 14 turbine units available for service. (See table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

Table 1. McNary Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
8	8/13	0616	8/22	1431	Strainer repair/maintenance/lubricant replacement.
14	8/13	0956	8/17	1119	Strainer repair/maintenance.
4	8/20	0743	8/23	1632	Annual maintenance.
1	8/21	1004	8/21	1034	ESBS camera inspections.
13	8/21	1055	8/21	1130	ESBS camera inspections.

Comments: The saw tooth unit priority for warm water temperature abatement continued.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on August 17, 19 and 22. Temperature probe data was downloaded on August 22. Adult fish counting and video review of night time lamprey passage continued.

Fish Ladder Exits:

Yes	No	Location	Criteria	Comments
	X	Oregon Exit	Head over weir 1.0' to 1.3'	0.8' on August 17
X		Oregon Count Station Differential	0.0' to 0.5'	
X		Washington Exit	Head over weir 1.0' to 1.3'	
X		Washington Count Station Differential	0.0' to 0.5'	

Comments: Debris loads were light to moderate near the Oregon exit and minimal to very light near the Washington exit. Picketed leads were cleaned by the general maintenance staff as needed, including Saturday.

On August 17, no apparent cause of the out of criterion issue at the Oregon ladder exit could be found. The reading may have been related to previous debris or weir issues. The exit was in criteria later in the day and no set point adjustment was noted. On August 18, the general maintenance staff had to remove man made debris from the trash rack. On August 21 and 22, they had to clean the picketed leads at the beginning of their shift. Multiple exit and high water alarms on August 22 were related to the debris issue.

On August 22, at the Washington ladder exit, one regulating weir alarm was reset.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
X			NFEW2 Weir Depth	≥ 8.0'	
X			NFEW3 Weir Depth	≥ 8.0'	
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.8 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: On August 22, scheduled maintenance occurred on the north Oregon powerhouse entrances (NFEW1, NFEW2 and NFEW3).

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
		X	WA shore Wasco County PUD Turbine Unit
X	X		WA shore Wasco PUD Bypass
X			Oregon Ladder Fish Pump 1, Blade angle: 22.
X			Oregon Ladder Fish Pump 2, Blade angle: 22.
X			Oregon Ladder Fish Pump 3, Blade angle: 22.
X			OR North Powerhouse Pool supply from juvenile fishway

Comments: On August 20, from 0402 to 1512 hours, the Wasco county PUD unit was out of service due to brush issues. The bypass functioned well but there was a 20 to 30 minute delay in the bypass valves opening. On August 22, at 1830 hours, the unit tripped off line. This time bypass opened on time. The unit will remain out of service until August 29 for brush and control repairs. The bypass system will continue to provide auxiliary water to the Washington ladder unit the unit returns to service.

On August 22, from 1518 to 1529 hours, fish pumps 2 and 3 were out of service to allow testing of the cooling water supply lines backflow preventers. During the outage, the blade angle was increased on fish pump 2.

**Juvenile Fish Passage Facility**

The sampling season continued.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to light near powerhouse.
X			Trash rack differentials measured this week?	Daily.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
	X		Any oil seen in gatewells?	

Comments: The forebay debris load near the powerhouse was minimal to light. Debris accumulation along the spillway was very light to light. New incoming debris loads were minimal. Winds move woody material and aquatic vegetation for the Oregon shore to the powerhouse and back.

No trash racks were cleaned this week. No problems were noted in the gatewell slots.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (VBSs):

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
X			ESBSs inspected this week?
X			ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?

Comments: On August 21, the brush cycle for the ESBS in 14C slot was returned to automatic mode. On August 23, all three brush cycles for the ESBSs in unit 3 were found in timer mode. The operator returned the cycle functions to automatic mode. On August 21, ESBS camera inspections in units 1, 4 and 13 revealed no issues. Unit 4 was out of service during the inspections.

VBS differential monitoring occurred daily. No high differentials were measured and no VBSs were cleaned. On August 20, the prototype VBS in 4C slot was moved to 4A slot. The standard VBS from 4A slot was then installed in 4C slot. This should reduce the number of VBS cleanings occurring at unit 4. Also, the large slot cover at 4A slot will not have to be removed as often due to the reduction in VBS cleaning that is anticipated. Unit 4 was out of service during this exchange.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe:

Yes	No	NA	Item	Number of orifices in service
X			Orifices operating satisfactory?	42
X			Dewatering and cleaning systems operating satisfactory?	

Comments: There were no problems to report. Orifices were adjusted for the VBS exchange at unit 4 as required.

Bypass Facility:

Yes	No	NA	Item
X			Sample gates on?
		X	PIT-tag sampling system on? (Remain off unless a study is occurring.)

Comments: The sample gates were on during secondary bypass for sample collection. This week, 84 juvenile lamprey and 624 smolts were bypassed. Juvenile shad continue to be the predominate species sampled.

TSW Operations: The TSWs remains out of service. The spill pattern remained as outlined in the Fish Passage Plan, Table MCN-9, without TSWs.

**River Conditions**

Table 2. River Conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
166.2	118.9	83.1	59.7	70.9	69.7	6.0	6.0

Comments: The above data is supplied by Anchor, QEA except water clarity, which is provided by the control room. The summer spill program with fifty percent of river flow being spilled will conclude on September 1 at 0001 hours.

Daily temperature monitoring by Anchor, QEA throughout the juvenile system continued. Temperature data along with probe issues are described in a separate weekly report. Temperature monitoring will conclude on August 31.

## Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur in December.

Avian Activity: Avian tailwater counts continued and are recorded in Table 3 below. Hazy conditions due to regional fires made observations difficult at times.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Aug 17	Spill	52	0	0	11
	Powerhouse	0	0	0	0
	Outfall	0	0	0	3
Aug 18	Spill	6	1	3	10
	Powerhouse	0	0	0	0
	Outfall	3	0	0	0
Aug 19	Spill	24	3	1	5
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
Aug 20	Spill	4	0	0	4
	Powerhouse	0	0	0	0
	Outfall	0	0	0	1
Aug 21	Spill	131	9	3	13
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
Aug 22	Spill	47	0	0	4
	Powerhouse	3	0	0	0
	Outfall	0	0	0	1
Aug 23	Spill	104	2	7	8
	Powerhouse	0	0	0	0
	Outfall	25	0	0	7

Pelicans continued to be observed either feeding or roosting in the spillway and at the bypass outfall. Pelican numbers appeared to fluctuate. Gull numbers appeared to be fluctuating with the juvenile shad outmigration. They were observed in the spillway and outfall areas either feeding or roosting. Tern numbers have declined. They appeared to be feeding in the spillway. The gulls and terns are difficult to distinguish at long distances even with binoculars. Cormorants remained difficult to observe. The ones noted were roosting on the navigation lock wing wall.

An occasional osprey, tern, grebe or gull was observed in the forebay. No grebes were noted in the gateway slots or juvenile fish channel. Gulls were roosting on the rocks by the Washington shore boat dock in low numbers. Though, large gull flocks were noted roosting around the project outside the counting zones.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. The bird distress calls have been adjusted weekly.

PSMFC staff continued recording observations of pelicans feeding at the bypass outfall. They are using a spotting scope for these observations. They intend to continue counting to see how pelicans respond when juvenile shad are the size of subyearling Chinook.

Invasive Species: The mussel station examinations on August 22 revealed no problems. One Siberian prawn was removed for the sample this week bringing the season total to seven.

Fish Rescue/Salvage: None occurred.

Research: The University of Idaho adult lamprey passage telemetry study continued.

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: August 17 – August 23, 2018

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**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	x	All 6 turbine units available for service (see table & comments below for details).		
x		Available turbines operated within 1% peak efficiency? Constraint in effect.	x	

Ice Harbor Unit Outages (OOS) and Return to Service (RTS).

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
2	4/25/16	0606	---	---	Runner replacement
6	7/23/18	1013	---	---	Annual maintenance, doble testing

Comments: None.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on August 21, 22, and 23.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
x		North Ladder Exit Differential	Head $\leq$ 0.3'	
x		North Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
x		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
x		South Ladder Exit Differential	Head $\leq$ 0.3'	
x		South Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
x		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
		x	South Shore Entrance (SFE-1) Weir Depth	$\geq$ 8.0' or on sill	
x			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
x			South Shore Channel Velocity	1.5 – 4.0 fps	
		x	North Powerhouse Entrance (NFE-2) Weir Depth	$\geq$ 8.0' or on sill	
x			North Powerhouse Entrance Channel/Tailwater Differential	1.0' – 2.0'	
		x	North Shore Entrance (NEW-1) Weir Depth	$\geq$ 8.0' or on sill	
	x		North Shore Channel/Tailwater Differential	1.0' – 2.0'	2.8'

Comments: The north shore channel/tailwater differential was above criteria on the August 23 inspection. This reading may have resulted from a visual reading error of the tailwater elevation, which fluctuates with the turbulence from spill.

Auxiliary Water Supply (AWS) System:

<b>Operating Satisfactory</b>	<b>Standby</b>	<b>Out of Service</b>	<b>Auxiliary Water Supply System (AWS)</b>
5 pumps	3 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: None.

### **Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>	<b>Comments</b>
x			Forebay debris load acceptable? (amount)	1 square yard
x			Gatewell drawdown measured this week?	
x			Gatewell drawdown acceptable	
x			Any debris seen in gatewells (% coverage)	0 to 7%
	x		Any oil seen in gatewells?	

Comments: None.

STSS/VBSs:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>
	x		STSS deployed in all slots and in service?
	x		STSS in continuous-run mode (Note: if not, then STSS are in cycle-run mode)?
	x		STSS inspected this week?
		x	STSS inspection results acceptable?
		x	VBSs differentials checked this week?
		x	VBSs differentials acceptable?

Comments: The STSS are in cycle-run mode, as the average fork length of subyearling Chinook is greater than 120 mm in the Lower Monumental juvenile fish sample.

Orifices, Collection Channel, Dewatering Structure, and Flume:

<b>Yes</b>	<b>No</b>	<b>NA</b>	<b>Item</b>	<b>Number open and in service</b>
x			Orifices operating satisfactory?	20
x			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Juvenile Fish Facility: The fish facility is being operated in primary bypass.

Fish Sampling: Sampling is done for the year.

Removable Spillway Weir (RSW): Voluntary spill for fish passage is occurring. Spill gate #2 (RSW) was closed on August 18 at 0703 hours, due to average daily total project outflows below 30 kcfs, per paragraph 2.3.2.7.v of the Ice Harbor section of the Fish Passage Plan.

### **River Conditions**

River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
29.7	23.8	19.7	14.0	71	70	11.0	6.9

\*Unit 1 scroll case temperature.

### Other

Inline Cooling Water Strainers: Monthly inspections for lamprey ended in June and will start up again in December.

Avian Activity: There were low to moderate amounts of pelicans, gulls, and cormorants observed around the project. Most of the pelicans and gulls were observed foraging downstream of the spillway and roosting on Eagle Island.

Invasive Species: No exotic species that are new to the area have been found.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Anchor, frozen and properly disposed of in a landfill. Sampling is done for the year.

Fish Rescue/Salvage: Unwatering activities that could involve fish rescue did not occur.

Research: There is no on-site research occurring at this time.

**Project: Lower Monumental**

Biologists: Chuck Barnes and Raymond Addis

Dates: August 17 - 23, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

## Lower Monumental Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		09/25/2018	ERTS	Rehabilitation Overhaul
Unit 3	06/25/2018	0700	11/11/2018	ERTS	6 Year Overhaul

Comments: Units went into Hard Constraint at 0001 on April 1.

**Adult Fish Passage Facility**

The adult fishways were inspected by Corps and Anchor QEA biologists on August 17, 18, 20, 21 and 23.

Fish Ladder:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head $\leq$ 0.5'	
X		North Ladder Picketed Lead Differential	Head $\leq$ 0.4'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head $\leq$ 0.5'	
X		South Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Comments:

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 8.0' or on sill	
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	
	X	X	South Powerhouse Entrance (SPE-1) Weir Depth	$\geq$ 8.0' or on sill	
	X	X	South Powerhouse Entrance (SPE-2) Weir Depth	$\geq$ 8.0' or on sill	
	X		South Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
		X	South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	
	X		South Shore Entrance (SSE-2) Weir Depth	$\geq$ 6.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments:

North Shore Channel/Tailwater Differential was out of criteria during the August 23 inspection with a reading of 0.9 feet. This reading was due to fish pump outages.

South Powerhouse Entrance (SPE-1) was at sill during the August 17, 18, 20 and 21 inspections with readings of 5.8, 6.2, 6.1 and 5.4 feet respectively. South Powerhouse Entrance (SPE-1) was out of criteria on the August 23



inspection with a reading of 5.0 feet. SPE-1 was partially closed in an attempt to maintain channel to tailwater differentials due to fish pump outages. South Powerhouse Entrance Channel/Tailwater Differential was out of criteria during the August 23 inspection with a reading of 0.9 feet. This reading was due to fish pump outages. South Powerhouse Entrance (SPE-2) was at sill during the August 17, 18, 20 and 21 inspections with readings of 5.8, 6.2, 6.1 and 5.4 feet respectively. South Powerhouse Entrance (SPE-2) was closed during the August 23 inspection in an attempt to maintain channel to tailwater differentials due to fish pump outages. South Shore Entrance (SSE-1) was at sill during all inspections with readings of 7.1, 7.1, 6.7, 6.9 and 7.3 feet respectively. South Shore Entrance (SSE-2) was closed during the August 23 inspection in an attempt to maintain channel to tailwater differentials due to fish pump outages.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
No		X	AWS Fish Pump 1
No		X	AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: AWS Fish pump 1 is out of service for seized Wicket Gate Bushings. There is no current estimated return to service date.

AWS Fish pump 2 was removed from service at 0840 on August 22 to re-tighten the thrust bearing collar. After returning to service at 1340 the same day, the fish pump started overheating and tripped the circuit breaker. Another attempt to restart fish pump 2 had the same result. Fish pump 2 remained out of service for the remainder of the reporting period.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	0 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 2 %
	X		Any oil seen in gatewells?	

Comments.

STSs/VBSs:

Yes	No	NA	Item
X			STSs deployed in all slots and in service?
	X		STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
	X		STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: STS's operating on cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	19 or 20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments:

Collection Facility: Collection into raceways for transport ended at 1500 on August 14. The sample gates were open for continuous (100%) sample at that time and the facility set up for truck transport.

GBT monitoring sampling began on April 10.

Transport Summary: Barging ended with the last barge departing on August 14. Alternate day trucking began on August 14 with the first truck departing on August 16. A total of 234 fish were collected of which 131 were bypassed back into the river and 78 were transported during this reporting period. Per 2018 Fish Passage Plan, the Lower Monumental trucking schedule is contingent upon fish numbers. Saturday, 18 August, was the third consecutive day with less than 50 smolts collected, therefore trucking was ceased after the second trip.

Spillway Weir: RSW went into service when Spring Spill began at 0001 on April 3. RSW was closed at 1245 on August 8 due to TMT decision. Summer Spill began at 00:00:00 on June 21.

### River Conditions

River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (°F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
27.2	20.2	11.4	6.9	70.0	69.3	5.9	4.5

\*Scroll case temperatures.

### Other

Inline Cooling Water Strainers: Cooling water strainers were not inspected in August. Next inspection will be during December.

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam.

Gulls and pelicans were the piscivorous bird species observed during fish ladder inspections this week.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans

Comments: Bird hazing efforts by USDA personnel ended at 2000 on June 2.

Tailrace observations for bird hazing effectiveness ended with the June 30 observation.

Outfall pipe bird water cannons were turned off on June 11, due to a damaged water cannon at pipe exit. The standby set of cannons had a missing water cannon and were already out of service.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on August 5.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Lower Monumental Dam for this reporting period are reported below.

<b>Date</b>	<b>Sample (euthanized)</b>	<b>Collection*</b>
8/17/2018	4	4
8/18/2018	11	11
8/19/2018	1	1
8/20/2018	9	9
8/21/2018	13	13
8/22/2018	3	3
8/23/2018	5	5
Totals	46	46

\*Collection and sample numbers are the same as the facility when sampling at 100%

Fish Rescue/Salvage: No fish rescue during this reporting period.

Research: No onsite research is in progress at this time.

**Project: Little Goose**

Biologists: Scott St. John and Richard Weis

Dates: August 17 - 23, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 6 turbine units available for service (see table & comments below for details).		
X		Available turbines operated within 1% peak efficiency? Constraint in effect.	X	

**Little Goose Unit Outages (OOS) and Return to Service (RTS)**

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	04/14/17	14:11	11/16/18	17:00	Spider and upper guide bearing repair.

Comments:

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult fishway on August 17, 18 and 23.

**Fish Ladder:**

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5'	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
	X		Fish Ladder Cooling Water Pumps in Service		
	X		Fish Ladder Exit Cooling Water Pumps Operating Satisfactorily		

Comments: The adult ladder cooling pump failed on August 10 at 07:45 and remains out of service (MFR 18 LGS 16).

**Fishway Entrances and Collection Channel: None.**

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0'	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
		X	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 7.0' or on sill	
		X	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 7.0' or on sill	
X			North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
X			North Shore Entrance (NSE-1) Weir Depth	$\geq$ 6.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 6.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. Fishway is currently operating within criteria.

**Auxiliary Water Supply System:**

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			AWS Fish Pump 1
X			AWS Fish Pump 2
X			AWS Fish Pump 3

Comments: None.

### Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comment
X			Forebay debris load acceptable? (amount)	
	X		Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: There is currently no floating woody debris inside the trash shear boom in the forebay.

ESBS/VBS:

Yes	No	NA	Item
X			ESBSs deployed in all slots and in service?
	X		ESBSs inspected this week?
		X	ESBSs inspection results acceptable?
	X		VBSs differentials checked this week?
		X	VBSs differentials acceptable?
	X		VBSs inspected this week?

Comments: None.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None.

Collection Facility: Juvenile fish facility is currently operating. The facility was changed to every other day trucking with the first truck leaving on August 16.

Transport Summary: Every other day trucking commenced on August 16. The collection and transportation facility operated within criteria this report period. A total of 1,641 fish were collected, and 1,423 were transported via truck. The descaling and mortality rates were 0.8% and 0.6% respectively. A total of 05 adult lamprey were removed from the separator and sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Adjustable spillway weir was closed for the season on August 03 at 15:30.

### River Conditions

River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
27.8	22.0	8.7	7.0	70.2	68.2	5.5	5.0

\*Ladder temperature.

## Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted every other week. No juvenile lamprey were seen this reporting period.

Avian Activity: Average daily piscivorous bird counts by zone for the report period at Little Goose Dam.

Zone	Gull	Cormorant	Tern	Pelican	Grebe
Unmodified boat barrier	0	0	0	0	0
Modified boat barrier*	0	0	0	0	0
Forebay debris	0	0	0	0	0
Trash/shear boom	0	0	0	0	0
Forebay count	5	4	0	0	0
Tailrace count	6	0	0	0	0

\*modified and unmodified boat barrier section was removed on 7 buoys directly upstream of the ASW.

Invasive Species: No invasive species have been observed on the mussel station.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by Oregon Department of Fish and Wildlife and Anchor, frozen and properly disposed of in a landfill. Daily and total Siberian prawn counts at Little Goose Dam for this reporting period are reported below.

Date	Sample (euthanized)	Collection*
8-17		120
8-18		161
8-19		69
8-20		97
8-21		82
8-22		74
8-23		58
<b>Total</b>		<b>661</b>

\*Collection and sample numbers are the same as the facility when sampling at 100%

Gas Bubble Trauma (GBT): GBT monitoring ended for the year.

Fish Rescue/Salvage: None.

Research: PNNL is currently monitoring hydrophones and associated equipment for an acoustic telemetry study.

**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: August 17- August 23, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	x	All 6 turbine units available for service (see table & comments below for details).		
x		Available turbines operated within 1% peak efficiency? Constraint in effect.	x	

## Lower Granite Unit Outages (OOS) and Return to Service (RTS)

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
6	July 9	0700	Aug 24	1518	Annual Maintenance and Digital Governor Upgrade
5	Aug 20	0715			Annual Maintenance and Digital Governor Upgrade

Comments:

**Adult Fish Passage Facility**

Lower Granite and Anchor QEA staff inspected the adult fishway on August 17, 18, 19, 20, 21, 22, and 23.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
x			Fish Ladder Exit Differential	Head $\leq$ 0.5'	
x			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
x			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
x			Fish Ladder Cooling Water Pumps in Service		
x			Fish Ladder Cooling Water Pumps Operating Satisfactorily		

Comments:

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
	x		South Shore Entrance (SSE-1) Weir Depth	$\geq$ 8.0'	7.9
	x		South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0'	7.9
x			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
x		x	North Powerhouse Entrance (NPE-1) Weir Depth	$\geq$ 8.0' or on sill	
x		x	North Powerhouse Entrance (NPE-2) Weir Depth	$\geq$ 8.0' or on sill	
x			North Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
	x		North Shore Entrance (NSE-1) Weir Depth	$\geq$ 7.0' or on sill	6.9
			North Shore Entrance (NSE-2) Weir Depth	$\geq$ 7.0' or on sill	OOS
x			North Shore Channel/Tailwater Differential	1.0'–2.0'	
	x		Collection Channel Surface Velocity	1.5 – 4.0 fps	1.4

Comments: The inability to operate AWS pump 1 in fast mode with current tailwater elevations may be influencing collection channel velocities. NSE-1 weir depth is being sacrificed for channel/tailwater differential. NPE 2 gate set point for the sill position is 628.2 feet to prevent cable spooling though the actual gate elevation is on sill at 628.0 feet. North shore and South Shore out of criteria readings are likely related to fish ladder control system calibration issues or reading being taken prior to gates responding to tailwater conditions.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
x			AWS Fish Pump 1
x			AWS Fish Pump 2
	x		AWS Fish Pump 3

Comments:

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	0 yd <sup>2</sup>
x			Gatewell drawdown measured this week?	
x			Gatewell drawdown acceptable	
	x		Any debris seen in gatewells (% coverage)	
	x		Any oil seen in gatewells?	

Comments:

ESBSs/VBSs:

Yes	No	NA	Item
x			ESBSs deployed in all slots and in service?
	x		ESBSs inspected this week?
		x	ESBSs inspection results acceptable?
x			VBSs differentials checked this week?
x			VBSs differentials acceptable?

Comments:

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	NA	Item	Number open and in service
x			Orifices operating satisfactory?	18
	x		Dewaterer and cleaning systems operating satisfactory?	

Comments: Primary dewaterer floor screen brushes, side screen brushes, and the pneumatic screen cleaners are being operated in manual mode by powerhouse operators due to mechanical and programming issues with the new system. Overflow weirs in groups A, B, and C remain in auto; weir group D continues to be operated in manual to achieve optimal flow from the PDW to the transport flume. Problems are being investigated and troubleshooting the system for needed repairs is ongoing. Oil was observed in headgate slot 6C at 1640 hours August 22. At 1730 hours, the problem was identified as a ruptured hydraulic hose for the gate cylinder. Oil absorbent booms were deployed in both the gatewell and headgate slots. No changes in fish collection operations were needed while the issue was resolved due to the oil being in the headgate slot not the gatewell slot.

Collection Facility: Operational modifications continue as needed. The facility is operating at 50% to 100% sample rate.

Transport Summary: Every other day truck transport to below Bonneville Dam continues.



Spill/Spillway Weir: Summer spill began June 21 at 0000 hours. Spill is distributed according to Table LWG-8 with the RSW closed.

### River Conditions

River conditions at Lower Granite Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
27.7	24.7	14.5	12.0	67.3	65.7	5.0 <sup>+</sup>	5.0 <sup>+</sup>

\*Cooling water intake temperature.

### Other

Inline Cooling Water Strainers: Inspections have been discontinued until December.

Invasive Species: No mussels were present during the August 12 inspection. During the reporting period 4,977 Siberian prawns were euthanized and 875 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	8/17/2018	8/18/2018	8/19/2018	8/20/2018	8/21/2018	8/22/2018	8/23/2018
<b>Euthanized</b>	858	658	775	513	990	415	768
<b>Dead</b>	194	76	172	29	192	49	163

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
8/17/2018	1305	3	14	0	0
8/18/2018	1344	0	23	0	0
8/19/2018	1400	1	15	0	0
8/20/2018	1400	5	26	0	0
8/21/2018	0745	9	14	0	0
8/22/2018	1315	27	27	0	0
8/23/2018	1120	2	21	0	0

Gas Bubble Trauma (GBT) Monitoring: N/A.

Adult Fish Trap Operations: Adult trap began seven days a week operation August 17 at 1400 with a 70% sample rate to support fall Chinook broodstock collection for WDFW (Lyons Ferry) and Nez Perce hatcheries.

Fish Rescue/Salvage: N/A

Research: N/A