

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#28-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: September 7 to 13, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status	Hard	Soft
	X	All 14 turbine units available for service. (See Table 1 & comments below).		
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	
11	9/10	0548	9/13	1539	Transformer maintenance.
12	9/10	0548	9/13	1539	Transformer and annual maintenance.
7	9/11	0953	9/11	1008	ESBS camera inspections.
8	9/11	1012	9/11	1035	ESBS camera inspections.

Comments: There are no problems to report.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on September 7, 9 and 12. Temperature probe data was downloaded on September 12. District limnologists continued installation of permanent water temperature monitoring equipment at both ladders. 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'	
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 ladder exit and minimal to very light near the Washington ladder exit. Picketed leads and trash racks were cleaned by the general maintenance staff as needed, including Saturday. At the Oregon exit, the fisheries staff cleaned the travelling screens debris trough as needed.

At the Washington exit, multiple exit alarms were reset on September 7. Also, one regulating weir alarm was reset on September 9. Finally, the count station window brush was inadvertently left in the down position in the morning on September 12 for two hours, while new air lines were being installed.

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'	7.1' on Sep 12.
	X		NFEW3 Weir Depth	≥ 8.0'	7.1' on Sep 12.
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 1.7 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: On September 12, the Oregon ladder north powerhouse entrances were out of criteria due to only two fish pumps being operational as described below.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
X			WA shore Wasco County PUD Turbine Unit.
	X		WA shore Wasco PUD Bypass.
X			Oregon Ladder Fish Pump 1, Blade angle: 20 to 22, 26.
		X	Oregon Ladder Fish Pump 2, Blade angle: 20, OOS.
X			Oregon Ladder Fish Pump 3, Blade angle: 20 to 22, 24.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: On September 10, from 0607 to 0731 hours, fish pump 2 was out of service (OOS) for bus switching related to the station service system upgrades. On September 12, at 0623 hours, the bus fish pump 2 failed. The fish pump will remain out of service until the bus system is repaired, which is schedule to be completed on September 15. While fish pump 2 is out of service, the blade angles on the other two pumps will be increased.

**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 minimal to very light. New incoming debris loads were minimal. Changes in wind direction continued to move woody material from the Oregon shore to the powerhouse and back repeatedly.

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: The brush cycles for the screens in 3A and 3C slots remained in timer mode. On September 8, after multiple alarms, the brush cycle for the screen in 4A slot was switched to timer mode. On September 11, while doing camera inspections, it was noted the control system for the ESBSs in unit 6 was not communicating to the screens. The electrical staff immediately resolved the issue. ESBSs were inspected in units 7 and 8 with no problems found.

VBS differential monitoring occurred daily. No high differentials were measured and no screens were cleaned.

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. Area lighting was replaced or repaired as needed.

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, 32 juvenile lamprey and 200 smolts were bypassed. Juvenile shad continue to be the predominate species sampled.

TSW Operations: The TSWs remained out of service.

**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
109.4	76.8	0.0	0.0	68.0	67.8	6.0	6.0

Comments: The above data is supplied by Anchor, QEA except water clarity, which is provided by the control room.

**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.

Pelicans were not observed on project this week. Terns were observed just once. Gull numbers appear to be fluctuating with the juvenile shad outmigration. Gulls were feeding in the powerhouse and outfall flows. They were roosting on structures around the tailwater area, including the outfall pipe. Cormorant numbers remained high.

Most were noted roosting on the navigation lock wing wall. An occasional osprey was observed roosting near the navigation lock wing wall.

An occasional osprey, cormorant, gull or small flock of grebes was observed in the forebay. No grebes observed elsewhere. Cormorants and gulls were roosting on the rocks by the Washington shore boat dock in fairly low numbers. 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.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Sep 7	Spill	33	1	0	0
	Powerhouse	32	1	3	0
	Outfall	10	0	0	0
Sep 8	Spill	73	15	0	0
	Powerhouse	5	0	0	0
	Outfall	88	0	0	0
Sep 9	Spill	60	17	0	0
	Powerhouse	0	0	0	0
	Outfall	7	0	0	0
Sep 10	Spill	50	30	0	0
	Powerhouse	0	0	0	0
	Outfall	40	0	0	0
Sep 11	Spill	146	74	0	0
	Powerhouse	28	0	0	0
	Outfall	9	4	0	0
Sep 12	Spill	0	0	0	0
	Powerhouse	61	0	0	0
	Outfall	0	0	0	0
Sep 13	Spill	0	0	0	0
	Powerhouse	5	0	0	0
	Outfall	42	0	0	0

Invasive Species: The next mussel station examinations will occur in late September. No Siberian prawn were removed from the sample this week.

Fish Rescue/Salvage: None occurred.

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

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: September 7-13, 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
4	9/1/18	0944	9/12/18	1215	Investigate possible oil leak

Comments: Unit 3 was noted to be operating a few megawatts below the 1% peak operating efficiency range on the September 10 fishway inspections. This was due to the GDACS program needing to be updated with the narrower operating efficiency range of unit 3 since it became a fixed-blade unit. Unit 4 was removed from service to check for the loss of oil, after an oil sheen was spotted in the stilling basin at 0915 hours on September 1. Upon investigation, there was no oil found to be lost from the unit.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on September 10, 11, and 12.

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	7.3
X			North Shore Channel/Tailwater Differential	1.0' - 2.0'	

Comments: The north shore entrance weir gate depth was out of criteria on September 12, probably due to calibration issues with the automated control system readings of the north shore tailwater elevation. A calibration check will be performed very soon.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
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:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	15 square yard
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 6%
	X		Any oil seen in gatewells?	

Comments: None.

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: 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:

Yes	No	NA	Item	Number open and in service
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 done for the year.

## 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
25.7	19.2	0	0	68	68	6.9	6.8

\*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 amounts of pelicans, gulls, and cormorants observed around the project.

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: September 07 - 13, 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	

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		10/26/2018	ERTS	Rehabilitation Overhaul
Unit 3	6/25/2018	0700	10/19/2018	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 September 7, 8, 10 and 12.

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: None.

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	South Powerhouse Entrance (SPE-1) Weir Depth	$\geq$ 8.0' or on sill	
		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		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:

South Powerhouse Entrance (SPE-1) was at sill during all inspections with readings of 6.9, 7.2, 7.9 and 7.1 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 6.9, 7.2, 7.9 and 7.1 feet respectively.

South Powerhouse Entrance Channel/Tailwater Differential was out of criteria during the September 10 inspection with a reading of 0.7 feet. Powerhouse operator was informed and the automated system was adjusted.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 7.6, 7.9, 8.2 and 8.2 feet respectively.

Auxiliary Water Supply System:

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

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	3 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 %
	X		Any oil seen in gatewells?	

Comments: None.

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: STSS's operating on cycle mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm. STSS inspections were conducted September 4 and 5.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: None.

Collection Facility: Collection into raceways for transport ended at 1500 on August 14 because daily collection was less than 50 fish per day for 3 consecutive days per FPP Appendix B section 4.6.6. The sample gates were opened for continuous (100%) sample at that time and the facility set up for truck transport.

GBT monitoring sampling began on April 10 and has ended for the year.

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. 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. A total of 136 fish were collected and 159 were bypassed back into the river and no fish were transported during this reporting period.

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 ended at 00:00:00 on September 1.

### 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
25.0	21.4	0.1	0.0	67.7	67.1	5.7	4.1

\*Scroll case temperatures.

### Other

Inline Cooling Water Strainers: Cooling water strainers are not inspected in September.

Avian Activity: Gulls and pelicans were the piscivorous bird species observed during fish ladder inspections this week foraging in the tailrace. 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 September 1.

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.

Date	Sample (euthanized)	Collection*
9/7/2018	1	1
9/8/2018	2	2
9/9/2018	2	2
9/10/2018	6	6
9/11/2018	1	1
9/12/2018	1	1
9/13/2018	6	6
Totals	19	19

\*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: September 07-13, 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.
4	09/10/18	07:00	09/28/18	17:00	Unit Annual

Comments: None.

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on September 09, 10 and 13.

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 was shut down for the season on September 13 at 1030.

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'	0.4 on 9-13
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. On September 13 FSC board read 0.4 at NSE. Staff gauge reading was 1.2

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 200 sq. ft. of floating woody debris inside the trash shear boom in the forebay. Drawdown measurements were conducted August 26 on unit 1 and were in criteria.

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: VBS differentials were measured August 26 on unit 1 and were in criteria.

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: The collection and transportation facility operated within criteria this report period. A total of 588 fish were collected, and 569 were transported via truck. The descaling and mortality rates were 1.4% and 12.9% respectively. A total of 1 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
24.9	21.2	0	0	76.0	66.2	5.0	4.1

\*Ladder temperature.

### Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted every other week.

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	3	9	0	0	0
Tailrace count	5	1	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*
9-07	155	155
9-08	77	77
9-09	71	71
9-10	70	70
9-11	80	80
9-12	139	139
9-13	64	64
<b>Total</b>	<b>656</b>	<b>656</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 removing hydrophones and associated equipment for the acoustic telemetry study.

**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: September 07 - September 13, 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	
5	Aug 20	0715			Annual Maintenance and Digital Governor Upgrade
6	Sep 10	0731			OPTO – PLC Module Upgrade

Comments: None.

**Adult Fish Passage Facility**

Lower Granite and Anchor QEA staff inspected the adult fishway on September 7, 8, 10, and 12.

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: None.

Fish Ladder Entrances and Collection Channel:

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		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	
X			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	

Comments: 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.

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: None.

**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: None.

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: None.

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 during the winter outage is ongoing.

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: No Spill is occurring.

## 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
26.5	22.9	0	0	67.3	66.5	5.0+	5.0+

\*Cooling water intake temperature.

## Other

Inline Cooling Water Strainers: N/A

Invasive Species: No mussels were present on the September 1 inspection. During the reporting period 2,793 Siberian prawns were euthanized and 539 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	9/07/2018	9/08/2018	9/09/2018	9/10/2018	9/11/2018	9/12/2018	9/13/2018
<b>Euthanized</b>	105	589	339	644	281	584	251
<b>Dead</b>	70	108	23	163	26	132	17

Avian Activity: Biologist daily piscivorous bird counts at Lower Granite Dam are presented in the table below.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
9/07/2018	1514	5	22	0	0
9/08/2018	1400	3	11	0	0
9/09/2018	1501	2	19	0	0
9/10/2018	1010	10	23	0	0
9/11/2018	1225	16	14	0	0
9/12/2018	0912	8	13	0	0
9/13/2018	0740	14	12	0	0

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

Adult Fish Trap Operations: Adult trap sample rate changed to 20% at 1400 hours September 6. The adult trap is operating seven days a week for WDFW (Lyons Ferry) and Nez Perce hatcheries broodstock collection.

Fish Rescue/Salvage: N/A

Research: N/A