

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#31-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: September 28 to October 4, 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	
9 to 12	9/26	0638	9/28	1738	BPA section outage.
6	10/01	0740	12/04	NA	Nine year overhaul.
3 to 5	10/02	1000	10/02	1115	ESBS camera inspections.

Comments: There are no problems to report.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on September 29, 30 and October 3. The last temperature probe data was downloaded on September 29, at which time, the probes were removed. Adult fish counting continued. Video review of night time lamprey passage concluded on September 30.

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'	0.8' on Sep 30.
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 moderate near the Oregon ladder exit and minimal near the Washington ladder exit. Picketed leads and trash racks were cleaned by the general maintenance staff as needed, including the weekend. Due to aquatic vegetation and woody material, at the Washington and Oregon ladder exit picketed leads, respectively, the leads were cleaned multiple times, including calling the general maintenance staff in to clean.

At the Oregon exit, on September 30, the picketed leads were cleaned and multiple lead differential alarms were reset, which resolved the out of criterion issue. The exit traveling screens debris trough was cleaned as needed.

At the Washington exit, other than multiple cleaning of the picketed leads, there are no other problems to report.

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 1.9 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: There are no problems to report.

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: 21 to 22.
X			Oregon Ladder Fish Pump 2, Blade angle: 20.
X			Oregon Ladder Fish Pump 3, Blade angle: 20 to 22.
X			OR North Powerhouse Pool supply from juvenile fishway.

Comments: On September 28, from 2215 to 2258 hours, all three fish pumps were out of service for bus switches related to the BPA outage mentioned above.

**Juvenile Fish Passage Facility**

The sampling season concluded on September 30 at 0700 hours, at which time, stray fish were evacuated from the juvenile fish facility and partial winterization began.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal 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. Debris accumulation along the spillway was minimal. New incoming debris loads were minimal. Most woody material remained along the Oregon shore.

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

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, 3C and 4A slots remained in timer mode. ESBSs were inspected in units 3 through 5 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: Area lighting was replaced or repaired as needed. With the conclusion of sampling, the channel will be monitored more frequently. With that being the case and with debris loads being down, the air burst/brush cycle sequence interval was increased from every three to every four hours on October 4.

Bypass Facility:

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

Comments: Until September 30, at 0700 hours, the sample gates were on during secondary bypass for sample collection. On September 28 and 30, no juvenile lamprey and no smolts were observed in the sample. Juvenile shad continued 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
99.7	76.0	0.0	0.0	65.0	63.0	6.0	6.0

Comments: With the sampling season completed, the above data is supplied by McNary control room. Spillway hoist maintenance was performed this week.

**Other**

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

Avian Activity: With avian tailwater counts concluded, only casual observations were made during other inspections.

Pelicans and terns were not observed on project this week. Gull and cormorant numbers appeared to fluctuate with the juvenile shad outmigration. Gulls were feeding in the powerhouse flow along with cormorants at the outfall. Both species were roosting on structures around the tailwater area.

No birds were noted in the forebay except 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 observation zones.

The outfall hazing water sprinklers remain out of service due to system damage, which will require a contract to repair/replace. On October 4, the bird distress calls were removed for the season.

Invasive Species: The next mussel station examinations will occur in late October. No Siberian prawn were removed from the last two samples.

Fish Rescue/Salvage: On October 2, four adult channel catfish were removed from the scroll case at unit 6. On October 3, eight channel catfish (from one to three feet long) and one sturgeon (three to four feet long) were removed from the draft tube.

Research: The University of Idaho adult lamprey passage telemetry study continued. On September 28, PNNL removed an estimated 3,696 juvenile shad from the sample for off sight barometric trauma testing.

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: September 28 – October 4, 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
4	9/20/18	1619	---	---	Investigate for possible oil leak

Comments: None.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on October 1, 3, and 4.

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'	0.4'
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	7.4'
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: The differential at the south shore picketed leads was out of criteria on the October 3 inspection, due to algae buildup on the leads. The leads were cleaned later that day. The NEW-1 depth was out of criteria on October 3, when NEW-1 was slightly above sill. The operator was informed and he lowered the gate to sill.

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)	36 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:

<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 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
23.1	14.9	0	0	65	64	8.7	8.1

\*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 and gulls, and moderate amounts of cormorants observed around the project. Most of the cormorants were observed roosting on Eagle Island, with some foraging downstream of the powerhouse.

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 28 – October 4, 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		10/26/2018	ERTS	Rehabilitation Overhaul
Unit 2	10/2/2018	0700	10/2/2018	1138	STS Inspection and Brush Cleaning
Unit 3	6/25/2018	0700	10/19/2018	ERTS	6 Year Overhaul
Unit 4	9/19/2018	1600	12/28/2018	ERTS	Inspection of Oil Governor System/Blade Seal Replacement
Unit 5	10/3/2018	0730	10/3/2018	1011	STS Inspection
Unit 6	10/3/2018	1026	10/3/2018	1250	STS Inspection

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 28, 29, October 1 and 3.

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: North Ladder Picketed Lead Differential was out of criteria on the October 1 inspection with a reading of 0.5 feet. JFF personnel cleaned the pickets and the readings went back into criteria.



Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	≥ 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	≥ 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 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	≥ 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	≥ 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 7.6, 7.6, 7.5 and 6.7 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 7.6, 7.6, 7.5 and 6.7 feet respectively.

South Shore Entrance (SSE-1) was at sill during the September 29, October 1 and 3 inspections with readings of 8.0, 8.1 and 7.8 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)	0 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: 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?	18
	X		Dewaterer and cleaning systems operating satisfactory?	

Comments: PDW mechanical cleaning brush started faulting out on September 30. From the position of the brush at the time of the fault, it is believed to be an issue with the electrical break on the motor.

Collection Facility: Condition sampling ended at 0700 on October 1 and the facility operation was changed to primary bypass. The facility was dewatered at 1230 on October 3 for cleaning and winter maintenance.

Transport Summary: Alternate day collection for transport ended at 0700 on October 1. Per 2018 Fish Passage Plan, the Lower Monumental trucking schedule is contingent upon fish numbers, the fish were bypassed back into the river. A total of 23 fish were collected, 22 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
23.0	13.5	0	0	64.9	63.4	5.4	4.5

\*Scroll case temperatures.

**Other**

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

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam for bird hazing effectiveness ended with the June 30. Gulls and pelicans were the piscivorous bird species observed during fish ladder inspections this week. Bird hazing efforts by USDA personnel ended at 2000 on June 2.

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 have 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. No prawns were collected during this reporting period.

Date	Sample (euthanized)	Collection*
Totals	0	0

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 28-October 04, 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	09/27/18	15:39	Unit Annual

Comments: None.

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on September 30, October 01 and 04.

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'	0.9 on 10-1
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway control system is currently operating in manual mode. North shore entrance was out of criteria and measured at 0.9 feet on October 01. 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 105 sq. ft. of floating woody debris inside the trash shear boom in the forebay. Drawdown measurements were conducted October 04 on units 1 and 3 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 October 04 on units 1 and 3 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. Every other day transport has ended with the last truck leaving on September 15. Little Goose is now operating in primary bypass with condition sampling every third day with sample fish being returned to the river. (MFR 18 LGS 19).

Transport Summary: The collection and transportation facility operated within criteria this report period. A total of 55 fish were collected, and 55 were by-passed back to river. The descaling and mortality rates were 1.7% and 0.0% respectively. A total of 0 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
23.4	15.3	0	0	64.1	63.2	5.5	4.3

\*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	15	15	0	0	3
Tailrace count	13	2	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*
9-28		0
9-29		0
9-30		79
10-01		0
10-02		0
10-03		51
10-04		0
<b>Total</b>		<b>130</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: None.

**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: September 28 – October 4, 2018

**Turbine Operation**

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	<b>Hard</b>	<b>Soft</b>
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	Sep 28	1110	Annual Maintenance and Digital Governor Upgrade
3	Oct 01	0700			Annual Maintenance and Digital Governor Upgrade

Comments: None.

**Adult Fish Passage Facility**

Lower Granite and Anchor QEA staff inspected the adult fishway on September 28, 29 and October 1, 3.

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'	1.4
	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	
			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: NPE 2 gate set point for sill position is 628.2 feet to prevent cable spooling though the actual gate elevation is on sill at 628.0 feet. SSE-1 and SSE-2 weir depths were out of criteria on the September 29<sup>th</sup> inspection with readings of 7.9 and 7.8, respectively.

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)	5.25 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. Due to current forebay levels the 14 inch orifices in Unit 4 gatewells were closed and 10 inch orifices were opened October 3 at 0545 hours.

Collection Facility: Operational modifications continue as needed. The facility sample rate is currently 100%.

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
22.5	16.8	0	0	63.5	62.6	5.0 <sup>+</sup>	5.0 <sup>+</sup>

\*Cooling water intake temperature.

## Other

Inline Cooling Water Strainers: Unit cooling water strainers were inspected October 4. There were no species collected.

Invasive Species: No mussels were present on the October 1 inspection. During the reporting period 388 Siberian prawns were euthanized and 155 Siberian prawn mortalities were collected in the condition sample.

### Siberian Prawn:

Date	9/28/2018	9/29/2018	9/30/2018	10/01/2018	10/02/2018	10/03/2018	10/04/2018
<b>Euthanized</b>	36	15	40	2	124	131	40
<b>Dead</b>	45	25	15	6	20	31	13

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
9/28/2018	1540	1	36	0	0
9/29/2018	0956	4	14	0	0
9/30/2018	1444	7	27	0	0
10/01/2018	1005	18	35	0	0
10/02/2018	1600	8	23	0	0
10/03/2018	1315	10	41	0	0
10/04/2018	1125	8	34	0	0

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

Adult Fish Trap Operations: The adult trap is operating seven days a week with a 20% sample rater for WDFW (Lyons Ferry) and Nez Perce hatcheries broodstock collection.

Fish Rescue/Salvage: Unit 3 scroll case dewatering occurred October 2; 2 suckers and 1 crawfish were rescued. Unit 3 draft tube dewatering occurred October 3; 6 channel catfish, 12 sturgeon, and 1 northern pike minnow were rescued. All rescued fish were released to tailrace.

Research: N/A