

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#27-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: August 31 to September 6, 2018

Turbine Operation

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

Comments: On September 4, units 10 through 12 were out of service a total of 1.5 hours for ESBS camera inspections. The saw tooth unit priority for warm water temperature abatement concluded at 0001 hours on September 1 when the spillway is closed.

Adult Fish Passage Facilities

McNary fisheries biologists performed adult fishways measured inspections on August 31, September 3 and 4. Temperature probe data was downloaded on September 4. This week, district limnologists continued installation of permanent water temperature monitoring equipment at both ladders. Also, the fisheries staff manufactured the still wells needed for probe deployment. 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'	0.9' on Sep. 4.
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 light near the Washington ladder exit. Picketed leads and trash racks were cleaned by the general maintenance staff as needed, including Saturday. On September 4, the Oregon exit head over weir issue was resolved by a set point adjustment. This week, the fisheries staff cleaned the travelling screens debris trough as needed. There are no problems to report for the Washington exit.

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: On September 2, for no know reason, the Oregon south entrance weirs (SFEW1 and SFEW2) adjusted themselves high (ran shallow) twice. Each time, the operator resolved the issue by switching the weirs to manual mode. The differential and level indicators appeared to be not functioning properly. On September 3 and 4, the electrical staff resolved the issue, which was related to the control system.

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.
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: There are no problems to report.

Juvenile Fish Passage Facility

The sampling season continued. When the spill program concluded on September 1, at 0001 hours, debris loads in the juvenile collection channel were monitored. No problems were observed.

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. With the spill closure, winds have moved woody material and aquatic vegetation from the Oregon shore to the spillway 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 4, ESBS camera inspections in units 10 through 12 revealed no problems.

VBS differential monitoring occurred daily. No high differentials were measured. On September 2 and 6, a total of eight screens were cleaned. No fish mortalities were observed.

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 cleaning 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, 16 juvenile lamprey and 504 smolts were bypassed. Juvenile shad continue to be the predominate species sampled.

TSW Operations: The TSWs remained out of service.

River Conditions

Table 1. 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
126.9	97.0	63.8	0.0	69.0	67.3	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 concluded on September 1 at 0001 hours.

Daily temperature monitoring by Anchor, QEA throughout the juvenile system concluded on August 31. Temperature data along with probe issues were described in a separate weekly report with a yearend report in progress.

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 2 below.

Pelicans and terns were not observed on project this week. Gull numbers appear to be fluctuating with the juvenile shad outmigration. Gulls moved from the spillway to the powerhouse to feed once the spillway was closed. They were still roosting on structures around the tailwater area and the gulls were roosting or feeding near the outfall. Cormorant numbers have increased. Most were noted roosting on the navigation lock wing wall and Washington shore ladder. Cormorants were observed feeding in the powerhouse flow. An occasional osprey was observed roosting near the navigation lock wing wall.

An occasional osprey or gull was observed in the forebay. No grebes observed anywhere on project. Gulls were roosting on the rocks by the Washington shore boat dock in fairly low numbers. Though, large gull flocks were noted roosting around the project was 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.

On August 31, USDA Wildlife Services personnel launched their drone from the navigation lock wing wall. The behavior of large number of gulls in the area was affected by the drone, which suggest more testing would be worthwhile.

Table 2. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Aug 31	Spill	290	4	0	0
	Powerhouse	0	0	0	0
	Outfall	19	0	0	0
Sep 1	Spill	32	0	0	0
	Powerhouse	12	0	0	0
	Outfall	6	0	0	0
Sep 2	Spill	36	7	0	0
	Powerhouse	50	0	0	0
	Outfall	0	0	0	0
Sep 3	Spill	20	0	0	0
	Powerhouse	30	0	0	0
	Outfall	13	0	0	0
Sep 4	Spill	27	6	0	0
	Powerhouse	11	0	0	0
	Outfall	6	0	0	0
Sep 5	Spill	2	0	0	0
	Powerhouse	42	1	0	0
	Outfall	0	0	0	0
Sep 6	Spill	13	23	0	0
	Powerhouse	76	5	0	0
	Outfall	1	0	0	0

PSMFC personnel concluded outfall observations on September 3.

Invasive Species: The next mussel station examinations will occur in late September. No Siberian prawn were removed for 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: August 31 – September 6, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
	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
5	9/1/18	0937	9/4/18	0940	Generator fault
4	9/1/18	0944	---	---	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 6 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. The oil sheen was documented and reported to the proper authorities.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on September 4, 5, and 6.

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'	

Comments: None.

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)	12 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:

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 ended on August 31 at 2344 hours.

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
31.5	20.4	21.5	0	68	67	6.6	6.6

*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: After spill was shut off, 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: August 31 – September 06, 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 2	9/4/2018	0700	9/4/2018	1246	STS Inspection & Hub Tapping
Unit 3	6/25/2018	0700	10/11/2018	ERTS	6 Year Overhaul
Unit 4	9/5/2018	0710	9/5/2018	1400	STS Inspection & Hub Tapping
Unit 5	9/5/2018	1020	9/5/2018	1230	STS Inspection
Unit 6	9/4/2018	1300	9/4/2018	1520	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 August 31, September 1, 2, 3 and 5.

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	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 6.2, 6.7, 6.2, 6.6 and 6.3 feet respectively.

South Powerhouse Entrance (SPE-2) was at sill during all inspections with readings of 6.2, 6.7, 6.2, 6.6 and 6.3 feet respectively.

South Shore Entrance (SSE-1) was at sill during all inspections with readings of 6.6, 7.5, 7.3, 7.5 and 7.4 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)	8 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. STS 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 - 20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: None

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.

Gas Bubble Trauma (GBT): 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. 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 217 fish were collected of which 192 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
30.3	21.2	16.9	0.0	68.2	67.9	6.1	4.6

*Scroll case temperatures.

Other

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

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam. 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*
8/31/2018	0	0
9/1/2018	1	1
9/2/2018	0	0
9/3/2018	7	7
9/4/2018	0	0
9/5/2018	3	3
9/6/2018	0	0
Totals	11	11

*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 31-September 06, 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.
1 & 2	09/04/18	08:00	09/04/18	15:00	PNNL acoustic sled removal
1 & 2	09/05/18	08:25	09/05/18	11:30	PNNL equipment removal
4 & 6	09/05/18	11:45	09/05/18	17:00	PNNL equipment removal
1 & 2	09/06/18	08:45	09/06/18	13:30	PNNL equipment removal

Comments: Unit priority was impacted during this report period (MOC 18LGS18 Gas Cap Spill Study demob).

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on August 31, September 02, 04 and 06.

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: None.

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'	0.8 on 9-6
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 except on September 06. Northshore was found at 0.8 for channel to tail water.

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. 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: Every other day trucking commenced on August 16. The collection and transportation facility operated within criteria this report period. A total of 924 fish were collected, and 856 were transported via truck.

The descaling and mortality rates were 0.9% and 2.1% respectively. A total of 5 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. All other spill ended on August 31 at midnight.

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
29.7	20.8	10.3	10.3	67.9	67.1	5.1	4.5

*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	7	6	0	0	0
Tailrace count	2	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. Sample rates were 100%.

Date	Sample (euthanized)	Collection*
8-31		135
9-01		127
9-02		134
9-03		106
9-04		119
9-05		141
9-06		131
Total		893

*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: August 31- September 06, 2018

Turbine Operation

Yes	No	Turbine Unit Status		
	X	All 6 turbine units available for service (see table & comments below for details).	Hard	Soft
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
2	Aug 27	0714	Sep 05	0655	EAL Grease Replacement

Comments: None.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on August 31, September 1, 5, and 6.

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	6.4' and 6.7'
X		X	North Powerhouse Entrance (NPE-2) Weir Depth	\geq 8.0' or on sill	6.2' and 6.5'
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 ²
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 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: Spill bays 5 and 6 were removed from service at 0714 hours August 27 for annual spillway inspection and cleaning. Summer spill ended September 1 at 0001 hours.

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
32.1	21.7	17.9	0	66.5	64.9	5.0 ⁺	5.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Invasive Species: No mussels were present during the September 1 inspection. During the reporting period 2,850 Siberian prawns were euthanized and 491 Siberian prawn mortalities were collected in the condition sample.

Siberian Prawn:

Date	8/31/2018	9/01/2018	9/02/2018	9/03/2018	9/04/2018	9/05/2018	9/06/2018
Euthanized	349	244	462	210	619	438	528
Dead	76	30	113	12	117	12	131

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
8/31/2018	1500	2	14	0	0
9/01/2018	1230	1	21	0	0
9/02/2018	1353	1	19	0	0
9/03/2018	0839	1	26	0	0
9/04/2018	0835	5	21	0	0
9/05/2018	1225	4	25	0	0
9/06/2018	1630	1	25	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