

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#03-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: March 16 to 22, 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	
9	3/19	0659	3/21	1714	Cooling water strainer upgrade.
1	3/21	0751	3/21	1054	Trash rack cleaning.
2	3/21	1058	3/21	1322	Trash rack cleaning.
3	3/21	1325	3/21	1546	Trash rack cleaning.
4	3/21	1549	3/21	1629	Trash rack cleaning.
4	3/22	0711	3/22	1355	Trash rack cleaning.
5	3/22	1358	3/22	1420	Trash rack cleaning.

Comments: The hard constraint will begin on April 1.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on March 16, 19, and 22. Temperature monitoring will begin on April 1. A broken water drain near the Washington ladder PIT-tag station was repaired on March 21. The exits count and mussel stations were inspected for the upcoming season on March 22.

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 exit and minimal to light near the Washington exit. Picketed leads will be lowered on March 29.

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

Comments: NFEW3 and SFEW2 elevation dial indicators still require calibration. At WFE3, the encoder shaft was replaced, which resolved the calibration issue.

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

Comments: The juvenile facility will return to service on March 26.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Moderate to heavy. New debris was light.
X			Trash rack differentials measured this week?	Five times.
X			Trash rack differentials acceptable?	
	X		Any debris seen in gatewells? (% coverage)	
X			Any oil seen in gatewells?	Hydraulic fluid in 9A slot.

Comments: Trash rack cleaning occurred on March 21 and 22. We removed 120 yards of woody material and tumbleweeds. No fish were observed. One cup of hydraulic fluid was removed from 9A slot on March 22. The head gate line bleeder was replaced.

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: ESBS installation will begin on April 2. VBS differential monitoring will begin with ESBS installation.

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

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

Comments: The south side dewatering valve lower limit was adjusted on April 19, which allowed the system program to communicate to the valve. Also, that day, district personnel inspected the supply line to the new transition screen air zone, which is labeled number 6. It was determined the line protruded into the water flow. The line was removed the next day. Rerouting the supply line to zone 6 will be scheduled for next winter.

Bypass Facility:

Yes	No	NA	Item
		X	Sample gates on?
		X	PIT-tag sampling system on?

Comments: All systems are out of service for winter maintenance. The first sample will be collected on April 2. This week: The fisheries staff completed sample gate rehabilitation. An "A" side flume gasket downstream of the separator was replaced. Several airline leaks were repaired. A leak in the truck loading line was repaired. The slope on the GBT line running from the separator to the wet lab was checked.

TSW Operations: The TSWs will be installed before April 10.

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
195.1	179.4	0.0	0.0	43	41	5.2	3.8

Comments: The above data is supplied by the control room.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on April 3.

Avian Activity: Avian counts will begin on April 1. An occasional small group of gulls or cormorants was noted this week along with a blue heron. The outfall hazing water sprinklers were returned to service on March 22.

Invasive Species: None have been seen during the winter outages. Mussel stations will be examined on March 29.

Fish Rescue/Salvage: None occurred.

Research: None is occurring.

Project: Ice Harbor

Biologist: Ken Fone

Dates: March 16 – March 22, 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

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	12/17/17	1342	---	---	Initially to investigate oil leak. Also fixing governor pump

Comments: None.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on March 19, 20, and 21.

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 (Criteria	\geq 8.0' or on sill	7.0'
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: The NEW-1 weir gate depth was out of criteria on the March 20 inspection. The gate is being operated in manual mode to reduce the wear and tear of the gate operating machinery trying to adjust to fluctuating tailwater levels from spill. On March 22 at approximately 1045 hours, SFE-1 weir gate was closed and SFE-2 weir gate was opened in its place, due to problems with controlling SFE-1 in automatic mode. A faulty limit switch was replaced, and SFE-1 was returned to operation on March 26 at about 0810 hours.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5-6 pumps	2-3 pumps		Status of the 8 South Shore AWS Pumps
2 pumps	1 pump		Status of the 3 North Shore AWS Pumps

Comments: South shore AWS pump #1 was shut down on March 21 at 1320 hours due to a high gearbox temperature alarm. For the most part, south shore fish ladder criteria was met with five pumps running through the weekend, plus the excess water from the juvenile fish collection channel. On March 26 at approximately 0810 hours, all of the south shore AWS pumps were turned off for a few minutes to reduce the water pressure against SFE-1 weir gate so that it could be opened and returned to operation. Six pumps were then turned back on, including pump #1.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
	X		Forebay debris load acceptable? (amount)	500 square yards
		X	Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	STSs blocking view into slots
	X		Any oil seen in gatewells?	

Comments: The turbine unit trash racks were raked on March 19, 20, and 21. Spill gate #2 was opened up towards the end of the reporting week and during the weekend to facilitate spilling forebay debris through the RSW.

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 removed for annual maintenance.

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: During the winter, one of the regulating weirs in the dewatering structure was discovered to have its stem broken off. The weir was found to be corroded and seized in place in its guide slot. The weir was cut out and a new weir was fabricated, with installation occurring this week. An airline was installed to one of the water level sensor stilling wells in the dewatering structure to help keep the sensor clean and maintain proper functioning of the dewatering system. The juvenile fish channel was watered up and orifices were opened on March 22, at

approximately 0830 hours. On March 22, the light for orifice 4CN was found to be burned out. That orifice was closed and orifice 4CS was opened in its place until the light was replaced on March 26.

Juvenile Fish Facility: The fish facility is unwatered for annual maintenance.

Fish Sampling: Sampling begins on April 2.

Removable Spillway Weir (RSW): Voluntary spill for fish passage begins on April 3.

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
75.2	55.0	25.4	0	44	42	7.0	4.5

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections will take place later in March.

Avian Activity: There were very few piscivorous birds seen around the project. Three avian deterrent lines that attach to the spillway upper pier noses were recently discovered to be broken and in the water, with two of the wires caught on the fish bypass outfall pipe. On March 16, the wires were successfully cut loose from the outfall pipe, and removed from the water to the extent possible.

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 will be humanely euthanized by PSMFC and Anchor, frozen and properly disposed of in a landfill.

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

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: March 16 – 22, 2017

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

Unit	OOS		RTS		Outage Description
	Date	Time	Date	Time	
Unit 1	12/10/2014		07/2018		Rehabilitation Overhaul
Unit 4	2/12/2018	12:18	3/30/2018		Stator Ground
Unit 2	3/20/2018	0701	3/20/2018	1107	Trash Rack Raking
Unit 3	3/20/2018	0701	3/20/2018	1612	To Tap the Hub
	3/21/2018	1224	3/21/2018	1635	Trash Rack Raking
Unit 5	3/21/2018	1111	3/21/2018	1656	Trash Rack Raking
	3/22/2018	0957	3/22/2018	1219	
	3/22/2018	1612	3/22/2018	1728	Oil Leak Investigation and Repair
Unit 6	3/21/2018	0702	3/21/2018	1444	Trash Rack Raking

Comments: Unit 5 oil leak investigation from March 22 found leak on a copper line at the headcover. Leak was within the containment area with no oil found in the drainage sump.

Adult Fish Passage Facility

Lower Monumental fish facility staff inspected the adult fishways on March 19, 20, 21 and 22.

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'	

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		X	South Powerhouse Entrance (SPE-1) Weir Depth	≥ 8.0' or on sill	See comments
X		X	South Powerhouse Entrance (SPE-2) Weir Depth	≥ 8.0' or on sill	See comments
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
	X		South Shore Entrance (SSE-1) Weir Depth	≥ 8.0'	See comments
X			South Shore Entrance (SSE-2) Weir Depth	≥ 6.0'	
	X		South Shore Channel/Tailwater Differential	1.0' – 2.0'	See comments

Comments: South Powerhouse Entrance weir (SPE-1) was on sill during the March 20, 21 and 22 inspections with readings of 7.0, 7.1 and 7.5 feet, respectively.

South Powerhouse Entrance weir (SPE-2) was on sill during the March 20, 21 and 22 inspections with readings of 7.1, 7.2 and 7.6 feet respectively.

South Shore Entrance weir (SSE-1) was out of criteria during the March 20 inspection with a reading of 6.1 feet. Powerhouse operator was informed and adjusted the automatic system to correct.

South Shore Collection Channel to Tailwater differential was out of criteria on the March 19 inspection, with a reading of 0.8 feet. Powerhouse operator was informed and adjusted the automatic system to correct.

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

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
		X	Forebay debris load acceptable? (amount)	1563 sq yd average
		X	Gatewell drawdown measured this week?	
		X	Gatewell drawdown acceptable	
		X	Any debris seen in gatewells (% coverage)	
		X	Any oil seen in gatewells?	

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: Gatewells could not be observed during this reporting period due to STS's hanging over them. STS's were inspected on the deck on March 22 and found in good working order and ready for installation. STS installation will begin on March 23.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	14 - 18
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: Collection Channel was watered up at 1000 on March 19.

Collection Facility: The collection facility was watered up at 1100 on March 19.

Transport Summary: No transport at this time.

Spillway Weir: RSW scheduled to go into service at 0001 on April 3.

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
69.2	55.6	3.9	0.0	44.0	44.0	2.6	2.2

*Scroll case temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on March 5. No live fish were recovered. Mortalities included 99 juvenile lamprey.

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam will start in April.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on March 6.

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 counts of Siberian prawns have been sampled during this reporting period because sampling doesn't start until April.

Fish Rescue/Salvage: No Fish Rescue/Salvage took place 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: March 16-March 22, 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	07/31/18	17:00	Spider and upper guide bearing repair.
1 & 2	03/16/18	08:00	03/16/18	17:00	PNNL trolley pipe install.
1 & 2	03/19/18	10:00	03/19/18	13:00	PNNL trolley pipe install.

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on March 19, 20 and 22.

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		

Fishway 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	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: None.

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 approximately 13,500 square feet of floating woody debris currently inside the trash shear boom in the forebay. Drawdown measurements were taken March 18 on units 1, 2, 3 and 4 and were in criteria.

ESBS/VBS:

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

Comments: VBS differentials were measured March 18 on units 1, 2, 3 and 4 and were in criteria. VBS camera inspections were conducted on March 12 and 14 and screens were in good condition.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: Primary dewatering structure weir elevation is currently operating in manual mode. The limitorque motor that automatically adjusts weirs for water elevation failed upon watering up the juvenile fish collection system. A new limitorque has been ordered and is expected to be installed upon delivery.

Collection Facility: The collection and transportation facility operated within criteria this report period. A total of 225 fish were collected. The descaling and mortality rates were 0.7% and 0.6% respectively.

Transport Summary: Fish transportation is scheduled to begin in April or May.

Spillway Weir: Spring spill operations will begin on April 03.

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
67.8	53.6	0.0	0.0	44.2	44.1	2.8	2.2

*Ladder temperature.

Other

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

Avian Activity: Daily piscivorous bird counts at Little Goose Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
March 16	Forebay count	0	1	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 17	Forebay count	0	0	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 18	Forebay count	0	6	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 19	Forebay count	0	12	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0

	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 20	Forebay count	0	0	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 21	Forebay count	0	1	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0
March 22	Forebay count	0	0	0	0	0
	Unmodified boat barrier	0	0	0	0	0
	Modified boat barrier*	0	0	0	0	0
	Boat barrier debris	0	0	0	0	0
	Trash/shear boom	0	0	0	0	0
	Tailrace count	0	0	0	0	0

*modified boat barrier section has weights and bird spike removed.

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*
3-16	8	8
3-17	0	0
3-18	5	5
3-19	0	0
3-20	11	11
3-21	0	0
3-22	12	12
Total	36	36

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

Gas Bubble Trauma (GBT): GBT monitoring is not being conducted at this time.

Fish Rescue/Salvage: None.

Research: PNNL is currently installing temporary trolley pipes, hydrophones and associated equipment for an acoustic telemetry study.

Project: Lower Granite

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: March 16-22, 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	
1	05-Mar	1936	2-Apr	N/A	Servo oil supply leak waiting on contractor repair and oil procurement.

Comments: None.

Adult Fish Passage Facility

Lower Granite biological staff inspected the adult fishway on March 19, 20, 21, and 22.

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		North Powerhouse Entrance (NPE-2) Weir Depth	\geq 8.0' or on sill	7.8
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	6.4
			North Shore Entrance (NSE-2) Weir Depth	\geq 7.0' or on sill	OOS
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.9, 0.8
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: SSE-2 and NPE-2 out of criteria readings were due to the fish ladder control system gate synchronization. Electricians identified programming glitch causing gate faults with no identifying alarm. The problem was resolved following the March 19 inspection and recalibrated following the March 19 inspection.

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: AWS pump 2 is out of service for drive shaft bearing repair.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	108.8 yds 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: ESBSs are scheduled to be installed the week of March 26. This will be a deviation from Lower Granite FPP section 2.3.1.2.vii. requirement to have ESBS installed in at least four units by March 24.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

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

Comments: None.

Collection Facility: The facility is in bypass commissioning mode.

Transport Summary: No transport is occurring.

Spill/Spillway Weir: Debris spill through the RSW occurred March 19 from 1000 hours to 1045 hours.

River Conditions

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
70.2	61.9	0.2	0	42.5	42.2	3.5	2.5

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: N/A

Invasive Species: N/A

Siberian Prawn: N/A

Avian Activity: N/A

Gas Bubble Trauma (GBT) Monitoring: N/A

Adult Fish Trap Operations: Adult trap is operating Monday through Friday with a 28% sample rate.

Fish Rescue/Salvage: N/A

Research: N/A