

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#04-2018**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: March 23 to 29, 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	
5	3/23	0819	3/23	1357	Trash rack cleaning.
6	3/23	1400	3/23	1620	Trash rack cleaning.
10	3/26	0657	3/28	1513	Cooling water strainer upgrade.
7	3/27	0708	3/27	0831	Trash rack cleaning.
8	3/27	0834	3/27	1013	Trash rack cleaning.
9	3/27	1016	3/27	1108	Trash rack cleaning.
11	3/27	1308	3/27	1356	Trash rack cleaning.
12	3/27	1358	3/27	1536	Trash rack cleaning.
13	3/27	1542	3/27	1609	Trash rack cleaning.
13	3/28	0711	3/28	0751	Trash rack cleaning.
14	3/28	0753	3/28	0831	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 25, 28, and 29. The PIT tag stations heat pumps were service on March 28. The temperature probes will be deployed on March 31 with monitoring beginning on April 1. The Oregon and Washington ladders exists picketed leads will be lowered on March 30 and 31, respectively. Adult fish counting will resume on April 1.

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. At the Oregon exit, weirs 335 and 338 tripped an alarm and were reset on March 25 and 27, respectively.

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 2.4 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.

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		X	OR North Powerhouse Pool supply from juvenile fishway

Comments: The juvenile facility returned to service on March 26.

Juvenile Fish Passage Facility

On March 25, shift work began. On March 26, from 0820 to 1020 hours, the juvenile channel was watered up and the system was placed into primary bypass.

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?	

Comments: Trash rack cleaning occurred on March 23, 27 and 28. We removed 107 yards of woody material and tumbleweeds. No fish were observed. All trash racks have been cleaned.

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?	42
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: The channel was watered up on March 26 using unit 10, which was out of service, orifices. One smolt mortality may have occurred but there was no way to verify the species. One rectangular screen cleaner proximity switch required adjustment. System control programming and alarms were verified on March 26 and 27, respectively.

Orifices were adjusted for trash rack cleaning as required. On March 27, one low water alarm occurred during trash rack cleaning. On March 29, the orifice at 2A slot was found closed. We estimate it had been closed for 5.5 hours. The fisheries staff was reminded to do orifice exchanges and cycling in a timely and proper manner. Orifice lights and operator air leaks were replaced and repaired as required. Wall lighting in the dewatering area was repaired on March 29.

Bypass Facility:

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

Comments: On March 26, the facility was watered up and prepared for the season. Systems were flushed and cleaned. On March 29, from 1322 to 1352 hours, the facility was switched into and out of secondary bypass three times for training. The sample gates remained off. The first sample will be collected on April 2.

TSW Operations: The TSWs installation will be completed on March 31. The spring spill program will begin on 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
190.5	170.3	0.0	0.0	43	43	4.8	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 an osprey. The outfall hazing water sprinklers have been operating well. Preparations to deploy the bird distress calls have begun.

Invasive Species: On March 29, the mussel station examinations revealed no problems.

Fish Rescue/Salvage: None occurred.

Research: None is occurring.

Project: Ice Harbor

Biologist: Ken Fone

Dates: March 23 – March 29, 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
4	12/17/17	1342	---	---	Initially to investigate oil leak. Also fixing governor pump

Comments: Units 6, 5, 3, and 1 were taken out of service one at a time on March 26, 27, and 28 to install STSs and remove debris from the gateway slots. Unit 5 was operated ahead of unit 6 (deviation from unit operating priority) on March 27, from 1448 hours to 1637 hours, while unit 6 was turned off to investigate an electrical noise. Unit 6 was noted to be operating well above the 1% peak efficiency range during the March 28 and 29 fishway inspections.

Adult Fish Passage Facility

Ice Harbor fish facility staff inspected the adult fishways on March 26, 28, and 29.

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	1.4, 1.4 fps
	X		North Powerhouse Entrance (NFE-2) Weir Depth	\geq 8.0' or on sill	7.4'
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	7.4'
X			North Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments: 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. The NFE-2 and NEW-1 weir gate depths were out of criteria on the March 26 inspection. The powerhouse operator was informed and he lowered the gates to

meet the depth criteria. These two gates are 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.

The south shore channel velocity was slightly below criteria on the March 28 and 29 inspections. A calibration check will be performed on the velocity meter to determine the accuracy of the readings.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
5-7 pumps	1-3 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 first half of the reporting period, 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.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
x			Forebay debris load acceptable? (amount)	13 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	Baseline readings were obtained for this season
X			Any debris seen in gatewells (% coverage)	0 to 100% (before debris removed)
	X		Any oil seen in gatewells?	

Comments: Spill gate #2 has been open to facilitate spilling forebay debris through the RSW. Debris was dipped out of the gatewell slots on March 26, 27, and 28.

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)? Cycle-run mode
		X	STSs inspected this week?
		X	STSs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: Unit 6, 5, 3, and 1 STSs were installed on March 26, 27, and 28.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	NA	Item	Number open and in service
X			Orifices operating satisfactory?	17-20
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: 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. On March 28, less than 20 orifices were open to accommodate the installation of the STSs and removal of gatewell debris.

Juvenile Fish Facility: The raw water lines in the fish facility were filled on March 29.

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
74.1	60.7	18.9	2.9	45	44	4.6	3.8

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Turbine cooling water strainer inspections occurred on March 26, 27, and 28. A total of 1 live juvenile lamprey, 10 dead juvenile lamprey, 1 dead adult shad, and 5 dead Siberian prawns were identified.

Avian Activity: There were very few piscivorous birds seen 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 will be humanely euthanized by 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 23 – 29, 2017

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		07/2018		Rehabilitation Overhaul
Unit 4	2/12/2018	12:18	3/30/2018		Stator Ground
Unit 2	3/29/2018	0708	3/29/2018	1045	STS Installation
Unit 3	3/26/2018	0905	3/26/2018	1405	STS Installation
Unit 5	3/27/2018	0705	3/27/2018	1215	STS Installation
Unit 6	3/27/2018	0815	3/27/2018	1430	Model Validation Testing
Unit 6	3/28/2018	0710	3/28/2018	1100	STS Installation

Comments: None.

Adult Fish Passage Facility

Lower Monumental fish facility staff inspected the adult fishways on March 26, 27, 28 and 29.

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		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'	

Comments: South Powerhouse Entrance weir (SPE-1) was on sill during the March 26, 27, 28 and 29 inspections with readings of 7.3, 7.4, 7.9 and 7.0 feet respectively.

South Powerhouse Entrance weir (SPE-2) was on sill during the March 26, 27, 28 and 29 inspections with readings of 7.3, 7.4, 7.9 and 7.0 feet respectively.

South Shore Entrance weir (SSE-1) was on sill during the March 29 inspection with a reading of 7.9 feet

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)	1175 sq yd average
X			Gatewell drawdown measured this week?	Benchmark measurements
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: A number of Gatewells could not be observed due to STS's hanging over them during this reporting period.

STS installation began on March 23 and the screens were in place and operating on cycle-run mode for all power generating units by March 29. An STS could not be installed into Gatewell 4A; investigation found that the VBS frame for 4A came loose and is obstructing the gatewell. The VBS is scheduled for repair early next week.

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: Orifice 17 had a large branch hanging out of it during the March 27 inspection. The orifice was closed as much as possible and the attractant light was turned off. Orifice 18 was opened and its attractant light was turned on. Powerhouse personnel removed the branch the following day.

Collection Facility: The collection facility was in primary bypass throughout the reporting period.

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
73.6	60.4	4.8	0.0	44.0	44.0	2.9	2.1

*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 begin April 2, 2018.

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 Siberian prawn were collected at Lower Monumental Dam for this reporting period because juvenile fish sampling doesn't begin 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 23-29, 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 25, 28 and 29.

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 16,000 square feet of floating woody debris currently inside the trash shear boom in the forebay. Gatewell drawdown measurements on unit 6 were taken on March 26 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 differential measurements on unit 6 were taken on March 26 and were in criteria.

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 309 fish were collected. The descaling and mortality rates were 0.7% and 0.8% respectively.

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

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
70.0	57.7	0.0	0.0	45.1	44.3	4.0	3.3

*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 23	Forebay count	1	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 24	Forebay count	1	16	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 25	Forebay count	2	11	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 26	Forebay count	2	7	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 27	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 28	Forebay count	3	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 29	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*
3-23	0	0
3-24	3	0
3-25	0	0
3-26	9	0
3-27	0	0
3-28	6	0
3-29	0	0
Total	18	0

*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 23-29, 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	29-Mar	1248	Servo oil supply leak waiting on contractor repair and oil procurement.
3	29-Mar	0649	29-Mar	1115	ESBS Installation
5	29-Mar	1122	29-Mar	1635	ESBS Installation
2, 4, 6	29-Mar	1636	02-April	N/A	Forced Outage, delay in ESBS Installation

Comments: None.

Adult Fish Passage Facility

Lower Granite and Anchor QEA staff inspected the adult fishway on March 24, 25, 28, and 29.

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'	7.2
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.1
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
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	
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	6.7, 5.6, 3.4
			North Shore Entrance (NSE-2) Weir Depth	\geq 7.0' or on sill	OOS
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.4, 0.6
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: SSE-1 and SSE-2 out of criteria readings were due to fish ladder control system tailwater elevation sensor position measuring an area where unit 1 operation creates a boil about one foot higher than the actual tailwater elevation. Unit 1 has been out of service since the fish ladder control system was installed. The problem was reported to operations March 29 and is being investigated. NSE-1 out of criteria readings were due to inaccurate fish ladder control system reading. The problem was reported to operations March 28 and is being investigated.

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)	60.0 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: ESBSs were installed in unit 1 prior to returning the unit to service. ESBSs were installed in units 3 and 5 on March 29. The remaining screens will be installed April 2 and 3. This is a deviation from Lower Granite FPP section 2.3.1.2.vii. requirement to have ESBSs 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?	All 14" orifices (18)
X			Dewaterer and cleaning systems operating satisfactory?	

Comments: The JBS was in emergency bypass operation from 1600 hours March 28 to 0915 hours March 29 when the facility was switched to primary bypass.

Collection Facility: The facility is scheduled to begin collection for condition sampling and kelt reconditioning in secondary bypass mode at 0700 hours April 1 with the first sample April 2.

Transport Summary: No transport IS occurring.

Spill/Spillway Weir: RSW spill operation began at 0001 hours March 25 to provide fish passage due to delay in JBS operation.

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
74.5	55.3	6.9	0	44.2	42.5	4.0	3.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were inspected March 28. Mortalities included 19 juvenile lamprey, 7 juvenile salmon, and 1 juvenile steelhead.

Invasive Species: No mussels were present during on the March 29 inspection.

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