

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#15-2018**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: June 8 to 14, 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	6/4	0634	6/13	1642	Annual maintenance and lubricant replacement.
11	6/11	0644	6/14	1459	Annual maintenance.

Comments: There is nothing to report.

**Adult Fish Passage Facilities**

McNary fisheries biologists performed adult fishways measured inspections on June 8, 10 and 13. Temperature probe data was downloaded on June 8 and 13. The probe in the Oregon south tailwater just downstream of the south entrance was replaced on June 8. Adult fish counting continued. Video review of night time lamprey passage will begin on June 15.

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 minimal to very light near the Oregon exit and minimal to moderate near the Washington exit. Picketed leads were cleaned at the Washington exit by the general maintenance staff as needed, including Saturday. New incoming debris loads along the Washington shore line was light and steady with much of the debris collecting on the spillway.

At the Oregon exit, the traveling screens debris trough was cleaned as required.

At the Washington exit, regulating weir reset on June 8.

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'	7.9' on June 8
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
	X		SFEW1 Weir Depth	≥ 8.0'	7.8' on June 8
	X		SFEW2 Weir Depth	≥ 8.0'	7.8' on June 8
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 2.1 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: The readings on June 8 were a result of entrance NFEW3 remaining in manual mode and possibly hydraulic gradients during high tailwater elevations. On June 10, NFEW3 was switched back to automatic mode.

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: There are no problems to report.

**Juvenile Fish Passage Facility**

The sampling season continues.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to moderate 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 increased from light to moderate. However, on June 14, due to wind direction and unit operation, the debris migrated to and passed over the TSWs. New incoming debris loads were light and arrived scattered from the Washington shore line to the powerhouse. Debris accumulation along the spillway was moderate.

No trash rack cleaning occurred this week. The next cleaning is scheduled for June 20. No problems were observed 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 cycle for the ESBS in 1C slot remained in timer mode. No ESBS camera inspections occurred on June 12 due to failure of the backup camera. The electrical staff will examine the backup camera next week. On June 13, the new cable was installed on the primary camera. However, we found the cable was wired improperly and will have to be returned to the manufacture.

VBS differential monitoring occurred daily. No high differentials were measured. On June 9, 11 and 13, a total of eight VBSs were cleaned. No smolt or juvenile lamprey mortalities were observed. The VBS in 10B slot required 14 retainer clip to be replaced.

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: Orifices were adjusted for VBS cleaning. Orifice attraction lights and operator air leaks were replaced or repaired 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, 1,600 juvenile lamprey and 55,001 smolts were bypassed.

On June 12, the sample system circulation pump failed. A spare pump was installed and the sample examination was delayed about one hour.

TSW Operations: The TSWs remain installed in spillbays 19 and 20. TSW removal is scheduled will begin on June 18.

**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
314.6	251.7	166.0	145.0	59.8	58.5	4.0	3.0

Comments: The above data is supplied by Anchor, QEA except water clarity, which is provided by the control room. Spill to gas cap will conclude on June 15. The summer spill program will begin on June 16, at 0001 hours, at which time 50 percent of river flow will be spilled.

Daily temperature monitoring by Anchor, QEA throughout the juvenile system is scheduled to begin June 15. The probes were deployed on June 8. Due to the damage to the outfall walkway, the temperature probe normally installed at the outfall will not be used this year. The digital thermometer installed in unit 1 scrollcase system failed on July 10. It will be replaced in the near future as Anchor, QEA records the data from this sight. The analog thermometer at unit 2 will be used in the interim.

**Other**

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

Avian Activity: Avian tailwater counts continued and are recorded in Table 3 below. As flow volumes continue to decrease, pelicans were noted moving into the zones in greater numbers. Gulls, terns and cormorants remained low in numbers. These birds appear to be feeding mostly in the spillway.

An occasional osprey, pelican or tern was observed in the forebay. As many as 35 grebes were observed. Hazing appears to be working well on the grebes. Pelicans, cormorants and gulls were roosting on the rocks by the Washington shore boat dock. This week, three grebes entered a gatewell slots. Two were removed. The third bird passed to the juvenile collection channel. This grebe along with the bird that entered earlier makes the channel count at two grebes.

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 deployed along the navigation lock wing wall have been functioning well. The calls have been adjusted weekly. USDA Wildlife Services continued with two shifts. Also, boating hazing occurred on Monday through Thursday. Due to the flow volume, the boat has remained below the outfall pipe.

Table 3. McNary Project’s Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
June 8	Spill	0	0	0	14
	Powerhouse	0	0	0	0
	Outfall	0	1	0	0
June 9	Spill	10	0	0	7
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 10	Spill	0	0	0	10
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 11	Spill	4	0	1	9
	Powerhouse	0	0	0	2
	Outfall	0	6	0	1
June 12	Spill	1	1	0	18
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 13	Spill	0	0	0	14
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
June 14	Spill	0	0	0	9
	Powerhouse	0	0	0	2
	Outfall	0	0	0	2

Invasive Species: The next the mussel station examinations will occur in late June. No Siberian prawns were observed in the sample this week.

Fish Rescue/Salvage: None occurred.

Research: GBT monitoring occurred three times this week in order to make up for last week, which only had one examination. One smolt exhibited signs of GBT. The University of Idaho adult lamprey passage telemetry study continues.

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: June 8 – June 14, 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	---	---	Investigate oil leak.

Comments: None.

**Adult Fish Passage Facility**

Ice Harbor fish facility staff inspected the adult fishways on June 11, 12, and 13.

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	7.0'
	X		South Shore Channel/Tailwater Differential	1.0' – 2.0'	2.2'
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: The SFE-1 weir depth was below criteria and the SFE channel/tailwater differential was above criteria on the June 12 inspection. This was due to the weir gate motor tripping out on an overload. This is an intermittent problem that electricians have been working on.

Auxiliary Water Supply (AWS) System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
7 pumps		1 pump	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 and #2 were out of service to change the oil from 0709 hours to 1526 hours on June 12, and from 0712 hours on June 13 to 1459 hours on June 14, respectively.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	250 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 to 8%
	X		Any oil seen in gatewells?	

Comments: None.

STs/VBSs:

Yes	No	NA	Item
	X		STs deployed in all slots and in service?
X			STs in continuous-run mode (Note: if not, then STs are in cycle-run mode)?
	X		STs inspected this week?
		X	STs inspection results acceptable?
		X	VBSs differentials checked this week?
		X	VBSs differentials acceptable?

Comments: The STs remained in continuous-run mode due to the presence of subyearling chinook with average fork lengths of less than 120 mm in the Ice Harbor 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, except when collecting fish for sampling.

Fish Sampling: Sampling is occurring on Mondays and Thursdays of each week. See the tables below for a summary of the sampling results. One bluegill and 2 juvenile bridgelip suckers that were put in a bucket of water to recover from the anesthesia during the June 11 sampling were inadvertently left in the bucket and found dead on June 14.

Fish condition sampling results at Ice Harbor Dam:

Date: June 11

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	0	---	---	---
Chinook yearling unclipped	0	---	---	---
Chinook subyearling clipped	14	0	0	0
Chinook subyearling unclipped	12	0	0	0
Steelhead clipped	1	0	0	0
Steelhead unclipped	1	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	1	0	0	0
Total	29	0	0	0

Date: June 14

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	1	0	0	0
Chinook yearling unclipped	0	---	---	---
Chinook subyearling clipped	28	1	0	0
Chinook subyearling unclipped	25	0	0	0
Steelhead clipped	0	---	---	---
Steelhead unclipped	2	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	1	0	0	0
Total	57	1	0	0

Removable Spillway Weir (RSW): Voluntary spill for fish passage, including spill through the RSW, is occurring.

### 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
97.2	70.2	80.1	60.0	60	59	4.0	3.6

\*Unit 1 scroll case temperature.

### Other

Inline Cooling Water Strainers: The turbine cooling water strainers will be inspected later this month.

Avian Activity: Gull and cormorant numbers were very low this week (see the table below). Most of the pelicans were observed foraging downstream of the spillway and around Eagle Island. Contracted land-based hazing of piscivorous birds for 16 hours per day changed to 8 hours per day on June 10. Boat-based hazing for 8 hours per day, 3 days per week, ended on June 9.



Daily maximum piscivorous bird counts at Ice Harbor Dam.

<b>Date</b>	<b>Gulls</b>	<b>Cormorants</b>	<b>Caspian Terns</b>	<b>Grebes</b>	<b>Pelicans</b>
June 8	2	5	0	0	41
June 9	0	0	0	0	0
June 10	---	---	---	---	---
June 11	0	1	0	0	44
June 12	0	4	0	0	21
June 13	0	0	0	0	19
June 14	0	1	0	0	28

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. No Siberian prawns were collected in the sample Ice Harbor Dam Fish Facility for this reporting period.

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

Research: On June 7, PNNL personnel concluded trapping and tagging adult chinook ascending the south fish ladder. The fish were being released back to the river at Levey Park and their movements tracked further upstream for a Little Goose Dam fish passage study.

**Project: Lower Monumental**

Biologists: Chuck Barnes and Raymond Addis

Dates: June 8 - 14, 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		08/2018		Rehabilitation Overhaul

Comments: Units went into Hard Constraint at 0001 on April 1.

**Adult Fish Passage Facility**

The adult fishways were inspected by Corps and Anchor QEA biologists on June 8, 9, 10, 11 and 13.

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

Comments:

South Powerhouse Entrance (SPE-1) was at sill on the June 13 inspection with a reading of 7.0 feet.

South Powerhouse Entrance (SPE-2) was at sill on the June 13 inspection with a reading of 7.1 feet.

South Shore Entrance (SSE-1) was at sill in the June 13 inspection with a reading of 7.6 feet.

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 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)	0 sq yd average
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 50%
	X		Any oil seen in gatewells?	

Comments: Gatewells for unit 3 and 4A were dipped to remove woody debris on June 14 to limit impact on juvenile fish passage.

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 were operating in continuous mode during this reporting period due to average sub-yearling Chinook and sockeye lengths being less 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: Orifice 17 was observed with a log protruding from it on May 31 and orifice 18 was put into service until the obstruction was cleared. Issues with orifice 17 were corrected and it was put back into service on June 11.

Collection Facility: Collection into raceways for transport began at 0700 on April 23.

GBT monitoring sampling began on April 10.

Transport Summary: Every-day barging changed to alternate day barging on May 22. A total of 39,020 fish were collected and 36,348 were transported during this reporting period.

Spillway Weir: RSW went into service when Spring Spill began 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
91.9	63.6	33.0	26.7	61.5	59.8	3.1	2.5

\*Scroll case temperatures.

### Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on June 13. No live fish were recovered. Mortalities included 7 juvenile salmon and 4 juvenile lamprey.

Avian Activity: Tailrace counts of foraging piscivorous birds at Lower Monumental Dam during fish ladder inspections for this reporting period are reported below.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
6/8/2018	1130	0	0	0	0	0
6/9/2018	1230	0	0	0	0	0
6/10/2018	1145	3	0	0	0	0
6/11/2018	1100	6	0	0	0	0
6/12/2018	1200	1	0	0	0	0
6/13/2018	1130	0	0	0	0	1
6/14/2018	1230	0	0	0	0	2

Comments: Bird hazing efforts by USDA personnel ended at 2000 on June 2.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on June 2.

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*
6/8/2018	1	20
6/9/2018	1	20
6/10/2018	0	0
6/11/2018	0	0
6/12/2018	1	20
6/13/2018	1	20
6/14/2018	0	0
Totals	4	80

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

Fish Rescue/Salvage: No fish rescues occurred 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: June 08-14, 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	06/12/18	17:00	06/20/18	17:00	Forced due to VBS damage

Comments: None.

**Adult Fish Passage Facility**

Little Goose fish facility and Anchor QEA staff inspected the adult Fishway on June 10, 12, and 14.

Fish Ladder: None.

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: 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'	
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Adult fishway cooling pump is currently operating in accordance to MOC 18 LGS 04. Adult fishway control system is currently operating in manual mode.

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: Gatewell drawdown differential measurements on units 1 and 6 were taken on June 14 and were in criteria. There is approximately 2,500 square feet of floating woody debris currently inside the trash shear boom in the forebay.

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 units 1 and 6 were taken on June 14 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: The limitorque motor that automatically adjusts weirs for water elevation in the primary dewatering structure is currently running in auto mode and appears to be working well.

Collection Facility: Juvenile fish facility is currently operating. The facility was changed to every other day barging on May 24.

Transport Summary: Daily barging commenced on April 24 and every other day barging commenced on May 24. The collection and transportation facility operated within criteria this report period. A total of 78,381 fish were collected, and 71,656 were transported via barge. The descaling and mortality rates were 0.7% and 0.3% respectively. This weekly report period, 10 adult lamprey were removed from the raceways or sample and released one mile above the Dam at Little Goose Landing.

Spillway Weir: Spring spill operations began on April 03 in accordance to the Fish Passage Plan. Adjustable spillway weir crest height was changed to the high crest position on June 11 at 1410.

### 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
93.0	66.4	29.1	25.2	62.5	61.1	4.0	3.2

\*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	0	0	0	0	0
Tailrace count	0	0	0	0	0

\*modified and unmodified boat barrier section was removed on 7 buoy's 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*
6-08	0	0
6-09	0	0
6-10	0	0
6-11	0	0
6-12	1	25
6-13	0	0
6-14	0	0
<b>Total</b>	<b>1</b>	<b>25</b>

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

Gas Bubble Trauma (GBT): GBT monitoring was performed on June 11. Personnel examined 100 fish and 6 were found to have symptoms of GBT.

Fish Rescue/Salvage: None.

Research: PNNL is currently monitoring hydrophones and associated equipment for an acoustic telemetry study.



**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: June 8- June 14, 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	

Comments: None.

**Adult Fish Passage Facility**

Lower Granite and Anchor QEA staff inspected the adult fishway on June 8, 9, 10, and 13.

Fish Ladder:

Yes	No	NA	Location	Criteria	Measurements
X			Fish Ladder Exit Differential	Head $\leq$ 0.5'	
X			Fish Ladder Picketed Lead Differential	Head $\leq$ 0.3'	
X			Fish Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
	X		Fish Ladder Cooling Water Pumps in Service		
		X	Fish Ladder 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'	7.5
	X		South Shore Entrance (SSE-2) Weir Depth	$\geq$ 8.0'	7.4
	X		South Shore Channel/Tailwater Differential	1.0' – 2.0'	0.9
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	

Comments: SSE weir gates were recalibrated June to address the out of criteria readings. NPE1 gate operating limits were adjusted June 11.

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 will be tested and returned to service from guide bearing repair June 19.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	122 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 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 in collection for transport mode.

Transport Summary: Every other day barging continues.

Spill/Spillway Weir: Spring spill operation continues at court ordered gas cap levels.

## 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
95.8	68.0	37.2	33.7	61.5	59.6	4.4	3.6

\*Cooling water intake temperature.

## Other

Inline Cooling Water Strainers: Cooling water strainers were not inspected during this reporting period.

Invasive Species: No mussels were present during the June 3 inspection.

Siberian Prawn:

Date	6/8/2018	6/9/2018	6/10/2018	6/11/2018	6/12/2018	6/13/2018	6/14/2018
<b>Euthanized</b>	0	0	0	0	0	1	0
<b>Dead</b>	0	0	0	0	0	0	0

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
6/8/2018	1609	0	0	0	38
6/9/2018	1330	0	0	0	22
6/10/2018	1345	0	0	0	28
6/11/2018	1225	2	0	0	28
6/12/2018	1420	3	0	0	22
6/13/2018	1008	0	0	0	21
6/14/2018	0825	5	2	0	27

Gas Bubble Trauma (GBT) Monitoring: Fish are collected from the separator and examined for GBT Thursdays. No symptoms of GBT were observed this week.

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

Fish Rescue/Salvage: N/A

Research:

Idaho Fish and Game (IDFG) Genetic Stock Identification

Fish collected as part of the Lower Granite condition sample are used to enumerate and characterize age composition and genetic stock profiles of naturally producing yearling chinook and juvenile steelhead. IDFG will sample Monday through Friday through mid-June with a goal of collecting 2,000-5,000 yearling chinook and juvenile steelhead genetic samples.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study  
Collection of adult steelhead kelt from Lower Granite juvenile separator for NPT rehabilitation program began April 1 with the first collection being worked up April 2. This research investigates steelhead kelt physiology and

endocrinology to evaluate the feasibility and success of rehabilitating strategies. Selected kelts collected at Granite are transported by NPT to Dworshak National Fish Hatchery for reconditioning and later release as part of this study.

National Marine Fisheries Service (NMFS)-Monitoring the Migrations of Wild Snake River Spring/Summer

Chinook: This study is monitoring the migration behavior and survival of wild spring/summer Chinook salmon. The goals are to characterize migration timing and estimate parr-to-smolt survival to LGR of wild Chinook populations as they migrate from their natal rearing areas and determine migration patterns and what environmental factors influence those patterns. Fish were PIT-tagged during the summer of 2017 in natal streams and are diverted to the Sort-By-Code tanks at LGR.

National Marine Fisheries Service (NMFS) In-River Survival: NMFS PIT-tag Chinook and steelhead smolts for their Survival Study April through early June to compare smolt to adult returns of in-river migrating smolts to the smolt to adult returns of transported smolts. PIT-tagged fish are held for 24 hours before being bypassed to the LGR tailrace.

National Marine Fisheries Service (NMFS) Transportation Study: NMFS staff is collecting and PIT-tagging yearling Chinook salmon and steelhead smolts for the Transportation Evaluation Study to compare smolt-to-adult returns of transported smolts to the smolt-to-adult returns of in-river migrating smolts.

PNNL System Survival Study

This study will evaluate the effects of increased spill on the passage and in-river survival of yearling Chinook salmon and juvenile steelhead migrating through the Snake and Columbia River hydro-system. The study will also evaluate the effects of increased spill on the passage of adult Chinook salmon and steelhead at Little Goose Dam during 2018 spring gas cap spill. Collection of yearling chinook and juvenile steelhead at Lower Granite began April 15.