

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#09-2020**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith+

Dates: April 24 to 30, 2020

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(s)	OOS		RTS		Outage Description
	Date	Time	Date	Time	
5	5/23/19	0943	6/4/20	NA	Turbine blade packing.
1 & 10	4/28	1000	4/28	1100	ESBS camera inspections. Rotated through units.

Comments: The hard one percent peak efficiency constraint continued. There is nothing more to report.

Adult Fish Passage Facilities

McNary fisheries biologists performed measured inspections of the adult fishways on April 24, 26 and 28.

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 near the Oregon exit and minimal near the Washington exit. The Oregon exit traveling screens debris trough was cleaned as required. There is nothing more to report.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Comments
X			North Oregon Entrance Head Differential	1.0' – 2.0'	
X			NFEW2 Weir Depth	≥ 8.0'	
	X		NFEW3 Weir Depth	≥ 8.0'	7.9' on April 28.
X			South Oregon Entrance Head Differential	1.0' – 2.0'	
X			SFEW1 Weir Depth	≥ 8.0'	
X			SFEW2 Weir Depth	≥ 8.0'	
X			Oregon Collection Channel Velocities	1.5 to 4.0 fps	Averaged 1.7 fps.
X			Washington Entrance Head Differential	1.0' – 2.0'	
X			WFE2 Weir Depth	≥ 8.0'	
X			WFE3 Weir Depth	≥ 8.0'	

Comments: The out of criterion point mentioned above, NFEW3 weir depth, could have possibly been due to low tailwater elevations and/or calibration drifts. There is nothing more to report.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
Yes			WA shore Wasco County PUD Turbine Unit
	Yes		WA shore Wasco PUD Bypass
		Yes	Oregon shore Fish Pump 1, OOS to September 12.
Yes			Oregon Ladder Fish Pump 2, Blade angle: 23°.
Yes			Oregon Ladder Fish Pump 3, Blade angle: 26 to 27°.
Yes			OR North Powerhouse Pool supply from juvenile fishway

Comments: There are no problems to report.

Juvenile Fish Passage Facility

The sampling season, consisting of alternating days of primary and secondary bypass, continued. There were no interruptions in the schedule.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Minimal to heavy.
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: Changes in the weather patterns moved the debris between the Oregon shoreline and the spillway. The debris appears have dissipated and passed over the TSWs. New debris and debris near the spillway would be described as minimal to very light. Debris removal has not yet been required.

No trash racks were cleaned and there are no problems to report this week.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (VBSs):

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

Comments: ESBS's remained deployed in all units, except for unit 5, which is out of service. The ESBS camera inspections in units 1 and 10 revealed no problems on April 28.

Daily VBS differential monitoring continued. No high differentials were measured. The screen in 13A slot was cleaned on April 27. One juvenile lamprey mortality was noted.

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: Orifices were adjusted for VBS cleaning as required. Orifice valve operators were repaired as needed. There are no problems to report.

Bypass Facility:

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

Comments: The sample gates were only operated on secondary bypass days. The PIT-tag system remained out of service as there are no studies requiring its use.

This week, 60 juvenile lamprey and 28,443 smolts were bypassed during secondary bypass.

The B side sample tank crowding device came off its runners on April 27. The device was immediately repaired.

TSW Operations: The TSW's are installed and remain functional in bays 19 and 20.

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
252.0	178.7	166.6	112.0	52.6	51.7	6.0	6.0

Comments: The above data was supplied by the smolt monitoring staff except water clarity, which came from the control room. The spring flex spill season continued. Last week, due to electrical issues, spillbays 2 and 4 were difficult to open and close. When the bays would not reopen until the electrical staff could respond, the spill volume was spread out over the remaining open bays. The issue appeared to be fully resolved on April 24 at 1345 hours.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on May 5.

Avian Activity: Avian counts continued. These counts are reflected in Table 3 below.

No birds were noted in the powerhouse zone.

In the spillway zone, gull numbers remained relatively high with most birds feeding though some roosted on the water. Cormorants may be feeding but are difficult to observe. Occasionally, pelicans were noted and one tern was observed.

At the juvenile bypass outfall, gulls roosted on the outfall pipe in fairly high numbers. Cormorant roosting numbers appeared to decline somewhat. Each species occasionally tried to feed at the outfall. Boat hazing reduced numbers of both species greatly.

In the forebay zone, an occasional gull or small gull flock, cormorant, grebe or small flock of grebes, loon or osprey was observed. The gulls appeared to be roosting while the grebes were feeding. A few gulls, cormorants and pelicans were noted on the roosting rocks along the Washington shoreline at times.

So far, the distress call and laser have not reduced gull or cormorant numbers roosting on the juvenile outfall pipe. This issue will continue to be addressed. Deterring feeding appears to be somewhat more successful but this could be due to the spill volume and/or tailwater elevation. Installation of the second laser is currently scheduled for early May. Deployment of the second laser on the outfall walkway should improve the hazing efforts there.

Table 3. McNary Project’s Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
April 24	Spill	46	0	0	0
	Powerhouse	0	0	0	0
	Outfall	29	5	0	0
April 25	Spill	96	0	0	1
	Powerhouse	0	0	0	0
	Outfall	46	8	0	0
April 26	Spill	38	0	0	7
	Powerhouse	0	0	0	0
	Outfall	62	15	0	0
April 27	Spill	80	0	1	0
	Powerhouse	0	0	0	0
	Outfall	42	12	0	0
April 28	Spill	71	0	0	1
	Powerhouse	0	0	0	0
	Outfall	12	1	0	0
April 29	Spill	4	0	0	0
	Powerhouse	0	0	0	0
	Outfall	1	0	0	0
April 30	Spill	66	0	0	0
	Powerhouse	0	0	0	0
	Outfall	2	0	0	0

The bird distress calls deployed calls on the navigation lock wing wall appear to be more successful than the one on the outfall walkway. The laser on the navigation lock wing wall for the juvenile outfall also appeared to be more effective on the wing wall than the outfall pipe. Finally, the forebay grebe distress call remained deployed and appears somewhat effective.

USDA Wildlife Services began the second shift on April 26 and boat hazing began on April 28. They concentrated their efforts in the tailwater area. As mentioned above, boat hazing, which occurred Tuesday through Thursday, was very effective at the juvenile bypass outfall.

Invasive Species: The next mussel station examinations will occur in late May. No Siberian prawns were observed in this week’s samples. None have been observed so far this season.

Fish Rescue/Salvage: None occurred this week.

Research: The gas bubble trauma (GBT) examinations occurred on April 24 and 28. One smolt was observed with signs of GBT. Examinations will occur twice a week.

Project: Ice Harbor

Biologist: Ken Fone

Dates: April 24 – April 30, 2020

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	
3	5/3/19	0641	---	---	Turbine runner replacement and stator rewind

Comments: Units 4 and 6 were observed to be operating approximately 5 megawatts above the 1% operating efficiency range on April 27. The reason for operating out of the 1% operating efficiency range is not certain, but is being looked into.

Adult Fish Passage Facility

Ice Harbor Fish Facility staff inspected the adult fishways on April 27, 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	
	X		North Powerhouse Entrance (NFE-2) Weir Depth	\geq 8.0' or on sill	7.9'
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 north powerhouse entrance weir depth was observed to be slightly below criteria on the April 27 inspection. This may have been due to the difficulty in getting an accurate tailwater staff gauge reading because of the turbulent tailwater conditions from spill.

Auxiliary Water Supply (AWS) System :

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

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	Average of 5 square yards
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0-5%
	X		Any oil seen in gatewells?	

Comments: None.

STSS/VBSs:

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

Comments: None.

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 Juvenile Fish Facility is being operated in primary bypass mode, except when collecting fish for sampling.

Fish Sampling: Sampling is taking place on Mondays and Thursdays each week. See the tables below for a summary of the sampling results. The clipped Chinook mortality in the April 30 sample appeared to have already been dead for several days. Three of the Chinook and one of the steelhead in the April 30 sample had eye hemorrhaging.

Fish condition sampling results at Ice Harbor Dam:

Date: April 27

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	79	1	0	0
Chinook yearling unclipped	19	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	48	3	0	0
Steelhead unclipped	5	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	151	4	0	0

Date: April 30

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	76	2	1	0
Chinook yearling unclipped	25	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	52	0	0	0
Steelhead unclipped	6	1	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	159	3	1	0

Removable Spillway Weir (RSW): Voluntary spill for fish passage 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
96.0	76.1	66.9	51.5	53	51	5.3	3.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: The next monthly turbine cooling water strainer inspections will occur in May.

Avian Activity: There were low to moderate numbers of piscivorous birds seen around the project (see table below). The higher number of birds on April 26 were counted before bird hazing started for the day. Land-based hazing of piscivorous birds for 16 hours per day is occurring. Boat-based hazing is occurring for 8 hours per day, 5 days per week. The hazing has been effective at reducing bird numbers around the dam.

Daily maximum piscivorous bird counts at Ice Harbor Dam.

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
April 24	3	3	0	0	2
April 25	0	2	0	0	5
April 26	0	29	0	0	44
April 27	6	1	0	0	1
April 28	2	0	0	0	0
April 29	0	0	0	0	2
April 30	14	0	0	0	15

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 fish condition sampling personnel, frozen and properly disposed of in a landfill. No Siberian prawns were collected in the Ice Harbor Dam sample for this reporting period.

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

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: April 24 - 30, 2020

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 2	7/15/2019	0720	7/17/2020	ERTS	Annual, Draft Tube Liner

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS/Anchor QEA biologists on April 24, 25, 26 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'	

Comments: None.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			North Shore Entrance (NSE-1) Weir Depth	\geq 8.0' or on sill	
X			North Shore Entrance (NSE-2) Weir Depth	\geq 8.0' or on sill	
X			North Shore Channel/Tailwater Differential	1.0'–2.0'	
		X	South Powerhouse Entrance (SPE-1) Weir Depth	\geq 8.0' or on sill	
		X	South Powerhouse Entrance (SPE-2) Weir Depth	\geq 8.0' or on sill	
X			South Powerhouse Entrance Channel/Tailwater Differential	1.0'–2.0'	
		X	South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	
X			South Shore Entrance (SSE-2) Weir Depth	\geq 6.0'	
	X		South Shore Channel/Tailwater Differential	1.0' – 2.0'	

Comments:

South Powerhouse Entrance weir (SPE-1) was on sill during all inspections with readings of 6.8, 6.9, 6.8 and 7.0 respectively.

South Powerhouse Entrance weir (SPE-2) was on sill during all inspections with readings of 6.8, 6.9, 6.8 and 7.0 respectively.

South Shore Entrance weir (SSE-1) was on sill during all inspections with readings of 6.5, 6.1, 6.4 and 6.4 feet respectively.

South Shore Channel/Tailwater differential was out of criteria on the April 29 inspection with a reading of 2.3 feet. This may have been caused by a calibration issue. Powerhouse operators were informed and cause is being investigated.

Auxiliary Water Supply System:

Operating Satisfactory	Standby	Out of Service	Auxiliary Water Supply System (AWS)
Yes			AWS Fish Pump 1
Yes			AWS Fish Pump 2
Yes			AWS Fish Pump 3

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	26 yds ²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 12%
	X		Any oil seen in gatewells?	

Comments: None.

STSS/VBSs:

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

Comments: STS's were in continuous-run mode during the April 5 inspection and were changed to cycle-run mode on April 8, mode due to average sub-yearling Chinook and sockeye lengths being greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comments: None.

Collection Facility: The Juvenile collection facility was watered up at 10:00 on March 26.

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

Transport Summary: Every-day barge transport began on April 24.

A total of 136,360 fish were collected with 137,136 fish being transported and 0 fish bypassed back to the river during this reporting period

Spillway Weir: RSW went 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
91.2	70.0	64.2	48.6	52.8	49.9	4.9	2.9

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on April 2. Mortalities included 7 juvenile lamprey, 11 Chinook salmon smolts and 2 Siberian prawns.

Avian Activity: Highest counts of foraging piscivorous birds in tailrace (SWT1+PH1+PH2) at Lower Monumental Dam.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans
4/24/2020	1100	8	0	0	0	0
4/25/2020	1300	4	0	0	0	0
4/26/2020	1300	0	0	0	0	0
4/27/2020	1100	30	1	0	0	0
4/28/2020	1100	5	0	0	0	0
4/29/2020	1230	2	0	0	0	0
4/30/2020	1300	4	0	0	0	0

Comments: Bird hazing efforts by USDA personnel began on April 1.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on April 11.

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 prawns were collected at Lower Monumental Dam for this reporting period.

Fish Rescue/Salvage: No Fish Rescue/Salvage took place during this reporting period.

Research: No research is occurring at this time.

Project: Little Goose

Biologists: Scott St. John and Richard Weis

Dates: April 24-30, 2020

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	03/31/21	17:00	Spider and upper guide bearing repair.
6	04/04/20	05:21	04/28/20	07:13	XJ Breaker opening without valid input signal

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility staff inspected the adult fishway on April 26, 28 and 30.

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'	7.7, 7.9
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.7, 7.9
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	4.3, 5.6
	X		North Shore Entrance (NSE-2) Weir Depth	\geq 6.0' or on sill	4.3, 5.6
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	0.9
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: The adult fishway continues to operate in manual mode. Project staff have struggled to maintain entrance criteria during spring spill. The fish control system still has a faulty I/O module for the NSE weirs and is currently being repaired. The NSE weirs are in criteria and rest about 6 feet below tailwater according to manual measurement. The weir depths at the SSE and NSE were found out of criteria on April 26 and 30. The NSE channel to tailwater differential was found out of criteria on April 28.

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 2,775 square feet of floating woody debris currently inside the trash shear boom in the forebay. Drawdowns inspections were performed April 30 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?
		X	ESBSs inspection results acceptable?
X			VBSs differentials checked this week?
X			VBSs differentials acceptable?
	X		VBSs inspected this week?

Comments: VBS differentials were conducted April 30 on Units 1, 2, 3 and 4 and were in criteria.

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: None.

Collection Facility: Collection for condition sampling began on April 01 and every other day sampling occurred until transport began.. Every day sampling for transportation began on April 23.

Transport Summary: Everyday barge transport began on April 24. The collection and transportation facility operated within criteria this report period. A total of 153,969 fish were collected. Of those collected, 153,863 were transported via barge. The descaling and mortality rates were 1.3% and 0.1%, respectively. No adult lamprey were removed from the separator this reporting period.

Spillway Weir: Spring spill operations began on April 03 with the ASW set at high crest.

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
92.9	72.6	61.1	45.6	53.4	51.8	4.7	4.0

*Ladder temperature.

Other

Inline Cooling Water Strainers: Inline cooling strainers are being inspected and results submitted to district operations every other week for FPOM distribution.

Avian Activity: Daily piscivorous bird counts at Little Goose Dam began on April 01.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
4-24	0800	0	0	0	0
4-25	0730	0	1	0	0
4-26	0800	0	0	0	0
4-27	1200	0	0	0	0
4-28	1315	6	4	0	0
4-29	1400	0	0	0	0
4-30	0900	14	0	0	0

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	Collection*
4-24	0	0
4-25	0	0
4-26	0	0
4-27	1	100
4-28	1	50
4-29	1	50
4-30	1	50
Totals	4	250

Gas Bubble Trauma (GBT): GBT monitoring was performed on April 26. There were 0 fish with signs of GBT.

Fish Rescue/Salvage: None

Research: None.

Project: Lower Granite

Biologists: Elizabeth Holdren and David Miller

Dates: April 24-30, 2020

Turbine Operation

Yes	No	Turbine Unit Status	Hard	Soft
X		All 6 turbine units available for service (see table & comments below for details).		
		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	
1-6	April 26-27	1100	April 27		ESBS Inspection

Comments: unit 1-6 were rotated out of service April 26-27 for ESBS inspections.

Adult Fish Passage Facility

Lower Granite and EAS/Anchor QEA staff inspected the adult fishway on April 10, 11, 13, and 15.

Fish Ladder:

Yes	No	NA	Location	Criteria	Comments
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	Comments
	X		South Shore Entrance (SSE-1) Weir Depth	\geq 8.0'	7.7, 7.6
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.9, 7.7, 7.7
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'	0.8
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	Closed
	X		North Shore Channel/Tailwater Differential	1.0'–2.0'	2.5, 2.7, 3.4
X			Collection Channel Surface Velocity	1.5 – 4.0 fps	

Comments: Depth over weir out of criteria reading are likely due to the gate not completed adjusting to tailwater elevation or related to flex spill operation. FOGs 1 and 10 are in operation. NSE channel tailwater differentials are due to spill volume creating a significant drawdown at the end of the north shore collection channel.

Auxiliary Water Supply System:

Operating Satisfactorily	Standby	Out of Service	Auxiliary Water Supply (AWS)
Yes			AWS Fish Pump 1
Yes			AWS Fish Pump 2
No		OOS guide bearing	AWS Fish Pump 3

Comments: AWS pump 3 return to service is delayed until mechanic report back to LWG and will require all AWS pumps be removed from service for about 4 hours while stoplogs are swapped.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	NA	Item	Comments
X			Forebay debris load acceptable? (amount)	
X			Trash rack differentials measured this week?	
X			Trash rack differentials acceptable	
	X		Any debris seen in gatewells (% coverage)	
	X		Any oil seen in gatewells?	

Comments: Gatewell drawdowns were completed April 19.

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: VBS differentials were completed April 19.

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: Juvenile collection channel water level and flow is being adjusted using 10” orifices depending on forebay elevations.

Collection Facility: The sample rate is being adjusted based on the expanded sample counts. The facility is in collection for transport mode. Total fish facility collection and transport for April 24-30 was 165,141 juvenile salmonids. Of these, 118 were bypassed directly back to the river (101 GBT and 17 fry). All salmonids sampled were examined for condition. Collection for transport began at 0700 hours April 23.

Transport Summary: Everyday barge transport at LWG began April 24.

Spillway Weir: Spring spill and RSW operation began at 0001 hours April 3.

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
94.8	73.1	59.2	47.4	51.0	49.5	4.9	3.2

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainer inspections were conducted on April 1.

Invasive Species: No zebra/quagga mussels were detected on the trap substrate. There was 2 Siberian prawn collected in the sample and euthanized for disposal.

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

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
April 24	1025	0	0	0	0
April 25	1200	0	0	0	0
April 26	0931	2	0	0	0
April 27	1030	0	0	0	2
April 28	1210	7	0	0	1
April 29	1058	0	0	0	0
April 30	1349	2	0	0	0

Gas Bubble Trauma (GBT) Monitoring: GBT monitoring April 30 showed no signs of GBT in the 100 juvenile salmonids sampled.

Adult Fish Trap Operations: Adult trap operations are suspended until further notice due to COVID-19. LWG staff dewatered the adult trap at 0700 on April 28. There were 34 mortalities observed that appeared to be salmonids and approximately 250 live incidentals species that were returned to the river alive. See MFR 20 LWG 03.

Fish Rescue/Salvage: N/A

Research:

Collection for research projects has been suspended until further notice as of March 24 due to COVID-19 with the exception of Kelt collection for NPT.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study

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. Corps biological technicians began collecting kelts off the juvenile fish separator for NPT at 1800 hours March 8 and continues collecting for transport.