

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#10-2020**

Project: McNary

Biologist: Bobby Johnson and Denise Griffith

Dates: May 1 to 7, 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.
2	5/2	0630	5/11	NA	Governor issue.
6, 7 & 8	5/4	1000	5/5	1700	Transformer 3 and 4 relay replacement.
11 & 12	5/5	1000	5/5	1100	ESBS camera inspections. Rotated through units.
9 to 12	5/6	0630	5/6	1700	BPA transmission line testing.
3	5/6	0630	5/6	1700	Unit 2 testing.

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 May 1, 3 and 6.

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 very light near the Washington exit. Tumbleweeds continued to be monitored at the Washington exit. The Oregon exit traveling screens debris trough was cleaned as required.

At the Washington exit, one regulating weir alarm came in and was reset on May 6. 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'	
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 1.4 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, the Oregon collection channel velocity, could have possibly been low due to tailwater elevations. 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.
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. 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 11 and 12 revealed no problems on May 5.

Daily VBS differential monitoring continued. No high differentials were measured and no screens were cleaned.

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: Orifice valve operators were repaired as needed. There are no other 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, 300 juvenile lamprey and 122,842 smolts were bypassed during secondary bypass.

There are no problems to report.

TSW Operations: The TSW's are installed and operating 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
272.2	239.0	193.6	156.7	53.3	52.1	6.0	4.8

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. There are no problems to report.

Other

Inline Cooling Water Strainers: The cooling water strainer examinations revealed five juvenile lamprey and four yearling Chinook (one unclipped) mortalities on May 5. All of the Chinook came from unit 1.

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, a pelican was noted but no terns were observed.

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

In the forebay zone, an occasional flock of grebes, bald eagle or osprey was observed. No birds appeared to be feeding. Gulls and pelicans in fairly high numbers were noted on the roosting rocks along the Washington shoreline at times.

To address the issue of gulls and cormorants roosting on the juvenile outfall pipe and to improve feeding prevention at the outfall, preparation were made to install a laser on the outfall walkway on May 4 and the bird distress call was removed. Also, that day, the new laser was install on the navigation lock wing wall and the older laser removed so it could be installed on the outfall walkway on May 7. Attempts to program the lock wall laser, which will be pointed at the outfall, failed on May 6. Both lasers will be programmed next week.

McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
May 1	Spill	15	0	0	0
	Powerhouse	0	0	0	0
	Outfall	47	1	0	0
May 2	Spill	19	0	0	1
	Powerhouse	0	0	0	0
	Outfall	26	1	0	0
May 3	Spill	76	0	0	1
	Powerhouse	0	0	0	0
	Outfall	67	3	0	0
May 4	Spill	34	0	0	0
	Powerhouse	0	0	0	0
	Outfall	39	0	0	0
May 5	Spill	2	0	0	0
	Powerhouse	0	0	0	0
	Outfall	16	0	0	0
May 6	Spill	168	0	0	0
	Powerhouse	0	0	0	0
	Outfall	7	0	0	0
May 7	Spill	0	0	0	0
	Powerhouse	0	0	0	0
	Outfall	1	0	0	0

The bird distress calls deployed calls on the navigation lock wing wall appear to be successful. The call from the outfall walkway may be installed on the lock wall in the near future. The forebay grebe distress call remained deployed and appears somewhat effective.

USDA Wildlife Services continued hazing with two shifts from shore. Also, boat hazing trips occurred Tuesday through Thursday. When the wind speed did not allow for boat hazing, the crew hazed from the shore. Almost all efforts were concentrated in the tailwater area.

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 May 2 and 4. No smolts were observed with signs of GBT. Examinations will occur twice a week.

Project: Ice Harbor

Biological Science Tech (Fisheries): Tim DeKoster

Dates: May 1 – May 7, 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 four, five, and six were observed to be operating at one megawatt above the 1% operating efficiency range on May 6, 2020. Operations personal is currently investigating why there have been infrequent occurrences of slightly elevated megawatt production outside the 1% operation efficiency range.

Adult Fish Passage Facility

Ice Harbor Fish Facility Staff inspected the adult fishways on May 4, 5, and 6.

Fish Ladders:

Yes	No	Location	Criteria	Measurements
X		North Ladder Exit Differential	Head \leq 0.3'	
X		North Ladder Picketed Lead Differential	Head \leq 0.3'	
X		North Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	
X		South Ladder Exit Differential	Head \leq 0.3'	
X		South Ladder Picketed Lead Differential	Head \leq 0.3'	
X		South Ladder Depth over Weirs	Head over weir 1.0' to 1.3'	

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location	Criteria	Measurements
X			South Shore Entrance (SFE-1) Weir Depth	\geq 8.0' or on sill	
X			South Shore Channel/Tailwater Differential	1.0' – 2.0'	
X			South Shore Channel Velocity	1.5 – 4.0 fps	
	X		North Powerhouse Entrance (NFE-2) Weir Depth	\geq 8.0' or on sill	7.7'
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 below criteria on the May 6 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 5.5 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 for available units?
	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: Fish sampling is being conducted on Mondays and Thursdays each week. Please see the tables below for a summary of the fish sampling results for May 4 & 7. One clipped Chinook and one clipped Steelhead were the only mortalities that was observed when we conducted the fish sampling on May 4, 2020. Both fish were already dead before reaching the fish separator and the cause of death is unknown. One unclipped Chinook mortality was observed in the fish sampling conducted on May 7, 2020, and it was already partially decomposed.

Fish condition sampling results at Ice Harbor Dam:

Date: May 4

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	38	0	1	0
Chinook yearling unclipped	13	0	0	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	86	0	1	0
Steelhead unclipped	23	0	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	160	0	2	0

Date: May 7

Species, Run, Rear type	Sampled	#Descaled	Morts	Avian Marks
Chinook yearling clipped	22	0	0	0
Chinook yearling unclipped	7	0	1	0
Chinook subyearling clipped	0	---	---	---
Chinook subyearling unclipped	0	---	---	---
Steelhead clipped	80	2	0	0
Steelhead unclipped	13	4	0	0
Sockeye clipped	0	---	---	---
Sockeye unclipped	0	---	---	---
Coho clipped	0	---	---	---
Coho unclipped	0	---	---	---
Total	122	6	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
107.1	90.3	102.4	79.9	53	53	5.4	5.3

*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 high numbers of piscivorous birds seen around the project (see table below). The higher number of birds on May 2 and 3 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
May 1	7	0	4	0	36
May 2	0	11	0	0	133
May 3	2	28	0	0	195
May 4	0	1	0	0	1
May 5	1	2	0	0	0
May 6	0	1	0	0	4
May 7	0	2	0	0	1

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 sample at Ice Harbor Dam 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.

If you have any questions please contact the Ice Harbor Fish Facility Biologist Ken Fone for more information and updates.

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: May 1 - 7, 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
Unit 1	5/5/2020	0652	5/5/2020	0900	STS inspections
Unit 3	5/5/2020	0913	5/5/2020	1110	STS inspections
Unit 4	5/6/2020	0659	5/6/2020	1220	STS inspections
Unit 5	5/5/2020	1115	5/5/2020	1320	STS inspections
Unit 6	5/5/2020	1325	5/5/2020	1500	STS inspections

Comments: None.

Adult Fish Passage Facility

The adult fishways were inspected by Corps and EAS/Anchor QEA biologists on May 1, 2, 3 and 6.

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:

North Shore Entrance (NSE-1) weir depth was out of criteria on the May 6 inspections with a reading of 7.8 feet. North Shore Entrance (NSE-2) weir depth was out of criteria on the May 6 inspections with a reading of 7.9 feet. Tailwater conditions made it difficult to read staff gauge 6N and digital staff gauge were fluctuating due to river, spill and weather conditions.

South Powerhouse Entrance weir (SPE-1) was on sill during the May 1 and 6 inspections with readings of 8.7 and 7.5 feet respectively.

South Powerhouse Entrance weir (SPE-2) was on sill during the May 1 and 6 inspections with readings of 8.7 and 7.5 feet respectively.

South Shore Entrance weir (SSE-1) was on sill during the May 1, 2 and 6 inspections with readings of 9.0, 5.8 and 7.3 feet respectively.

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)	28 yds ²
X			Gatewell drawdown measured this week?	
X			Gatewell drawdown acceptable	
X			Any debris seen in gatewells (% coverage)	0 – 10%
	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, 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 129,700 fish were collected with 129,579 fish being transported and 100 fish bypassed back to the river during this reporting period. The 100 fish bypassed back to the river were estimated based on 1 fry being collected for condition sampling at a 1% sample rate.

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
112.6	84.7	76.0	57.8	52.2	51.7	4.8	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
5/1/2020	1300	1	0	0	0	0
5/2/2020	1230	5	0	0	0	0
5/3/2020	1130	30	0	0	0	0
5/4/2020	1200	15	0	0	0	0
5/5/2020	1300	2	0	0	0	0
5/6/2020	1300	6	0	0	0	0
5/7/2020	1250	2	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 May 1.

Siberian Prawn: Siberian prawns collected in the sample at the Juvenile Fish Facility are humanely euthanized by PSMFC and EAS/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: May 01-07, 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.
1	05/02/20	15:26	05/02/20	17:34	Fish screen trouble
1	05/05/20	11:56	05/05/20	14:19	Debris removal orifice 1A2

Comments: None.

Adult Fish Passage Facility

Little Goose fish facility staff inspected the adult fishway on May 03, 05 and 07.

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: 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.

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 1,275 square feet of floating woody debris currently inside the trash shear boom in the forebay. Drawdowns were performed May 07 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 May 07 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. 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 186,452 fish were collected. Of those collected, 186,355 were transported via barge and 4 were by-passed. The descaling and mortality rates were 1.8% and 0.05%, 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. The ASW was set in low crest on May 01 at 13:46.

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
113.4	86.1	64.2	57.4	53.1	51.3	4.2	3.2

*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
5-01	0800	10	1	0	0
5-02	0800	0	3	0	0
5-03	1340	27	0	0	0
5-04	1400	19	1	0	0
5-05	1310	15	2	0	0
5-06	1120	4	0	0	0
5-07	0900	89	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 EAS/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*
5-01	2	400
5-02	0	0
5-03	0	0
5-04	0	0
5-05	0	0
5-06	0	0
5-07	3	300
Totals	5	700

Gas Bubble Trauma (GBT): GBT monitoring was performed on May 03. There were 3 fish with signs of GBT.

Fish Rescue/Salvage: None

Research: None.

Project: Lower Granite

Biologists: Elizabeth Holdren and David Miller

Dates: May 1-7, 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	

Comments: No turbine units at Lower Granite were out of service (OOS) during this reporting period.

Adult Fish Passage Facility

Lower Granite and EAS/Anchor QEA staff inspected the adult fishway on May 1, 2, 4, and 6.

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'	7.8, 7.3, 7.5
	X		South Shore Entrance (SSE-2) Weir Depth	\geq 8.0'	7.9, 7.2, 7.5
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'	0.7
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'	3.1, 2.8, 2.5
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 May 2.

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 May 1-7 was 352,890 juvenile salmonids. Of these, 6 fry were bypassed directly back to the river. 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
115.7	86.9	61.7	55.9	51.0	49.0	4.1	2.5

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling strainer inspections were conducted on April 29.

Invasive Species: No zebra/quagga muscles were detected on the trap substrate. There was 1 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
May 1	1323	26	0	0	0
May 2	1145	0	0	0	0
May 3	1350	34	0	0	0
May 4	1124	0	0	0	0
May 5	1240	7	0	0	0
May 6	1044	3	1	0	0
May 7	1345	11	0	0	0

Gas Bubble Trauma (GBT) Monitoring: GBT monitoring May 7 showed no signs of GBT in the 102 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.

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.