U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#28-2017

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: September 1 – 7, 2017

Turbine Operation

General Comments: The hard 1% peak efficiency constraint continues. On September 1, units 2 and 9 operated briefly outside the constraint.

Yes	No	Turbine Unit Status
☐	☒	All 14 turbine units available for service throughout the week (see Table 1 for outage details below).
☐	☒	All turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Table 1. Unit Outages at McNary Project.

Units	Outage Dates	Outage Length	Reason
5	Aug 7 to Oct 7	61 days	9-year overhaul.
9, 10 & 11	Sep 5	69 minutes	Extended-length submersible bar screens (ESBSs) camera inspections.
6	Sep 6	6 hours	Hub tapped.
2	Sep 6 to 7	26 hours	Thrust bearing oil pump issue.

Adult Fish Passage Facilities

General Comments: McNary fisheries biologists performed measured inspections of the adult fishways on September 1, 3 and 6. Visual fish counts and video review of lamprey passage continue. Temperature data was collected on September 6.

Fish Ladder Exits:

Yes	No	Location, Criteria and Measurements
☒	☐	Oregon Exit (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	Oregon Count Station Differential (Criteria – Differential 0.0’ to 0.5’)
☒	☐	Washington Exit (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	Washington Count Station Differential (Criteria – Differential 0.0’ to 0.5’)

Comments: The trash racks and picketed leads were cleaned as needed, including weekends, at both exits. Aquatic vegetation is becoming a problem. On September 4, the general maintenance staff was called in to clean the Oregon ladder picketed leads. The count station differential was 0.8 feet even after the regulating and tilting weirs were adjusted. During the early morning of September 7, multiple high water alarms occurred at the Oregon exit. Again, the regulating and tilting weirs were adjusted. The general maintenance staff cleaned the leads just after reporting to work that morning. After both cleanings, the regulating and tilting weirs were readjusted.

Debris loads at the Washington exit and along the shoreline were minimal. The regulating alarmed, was reset and the set point adjusted on September 3.

At the Oregon exit and along the shoreline, debris loads were moderate to heavy. The encoder for tilting weir 339 has not been replaced. This weir rarely moves and will be adjusted manually. In addition to the adjustments mentioned above, the regulating weir set point was also adjusted on September 1, 3 and 6. The tilting weirs tripped an alarm and the set point was adjusted on September 6.

On September 3, while cleaning the Oregon exit traveling screens debris trough, a highly decomposed adult unclipped sockeye was removed.

Fishway Entrances and Collection Channel:

Criteria Met?

Yes	No	Location, Criteria and Measurements
☒	☐	North Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
☐	☒	NFEW2 Weir Depth (Criteria – ≥ 8.0'): 7.5' to 7.7' all week.
☐	☒	NFEW3 Weir Depth (Criteria – ≥ 8.0'): 7.5' to 7.8' all week.
☐	☒	South Oregon Entrance Head Differential (Criteria – 1.0' to 2.0'): 2.1' on September 6.
☐	☒	SFEW1 Weir Depth (Criteria – ≥ 8.0'): 7.0' on September 3 and 7.2' on September 6.
☐	☒	SFEW2 Weir Depth (Criteria – ≥ 8.0'): 7.2' on September 3 and 6.
☒	☐	Oregon Collection Channel Velocities (Criteria –1.5 to 4.0 fps): Averaged 2.1 fps.
☒	☐	Washington Entrance Head Differential (Criteria – 1.0' to 2.0')
☒	☐	WFE2 Weir Depth (Criteria – ≥ 8.0')
☒	☐	WFE3 Weir Depth (Criteria – ≥ 8.0')

Comments: The Oregon ladder out of criteria points were due to fish pump 2 being out of service and entrance weirs set points adjustments having not been completed until after the inspection on September 6.

Auxiliary Water Supply System:

Yes	No	In Service?
☒	☐	Washington shore Wasco County PUD Turbine Unit.
☐	☒	Washington shore Wasco PUD Bypass. Service was not required.
☒	☐	Oregon Ladder Fish Pump 1: Blade angle was 20 to 25 degrees.
☐	☒	Oregon Ladder Fish Pump 2: Blade angle was 21 to 23 degrees when in service.
☒	☐	Oregon Ladder Fish Pump 3: Blade angle was 21 to 26 degrees.
☒	☐	Oregon North Powerhouse Pool supply from juvenile fishway.

Comments: On September 1, the operators reset a fish pump high oil temperature alarm. From 1252 to 1259, fish pump 2 tripped out of service due to a servo pump issue. From 1722 to 1729, the fish pump again tripped off line for the same reason. From September 1 at 2345 hours to September 6 at 0930 hours, fish pump 2 was out of service to allow the servo pump controller issue to be repaired.

Juvenile Fish Passage Facility

General Comments: The fish passage season consists of alternating days of primary and secondary bypass modes, with the switch occurring at 0700 hours each morning. No schedule deviations occurred. This week, 40 juvenile lamprey and 1,598 smolts were bypassed. Juvenile shad are now the predominate species observed in the samples.

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? Debris has dissipated.
☒	☐	Trash rack differentials measured? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.

☐ ☒ Any debris seen in gatewells?

☐ ☒ Any oil seen in gatewells?

Comments: Forebay debris loads near the powerhouse were minimal to moderate as variable winds moved the debris to and from the Oregon shore line. Debris loads at the spillway were minimal. New incoming debris loads were minimal. No trash racks were cleaned. A small number of large sticks were removed from the gatewell slots on September 2.

ESBSs/Vertical barrier screen (VBSs):

Yes	No	Item
☒	☐	ESBSs deployed in all slots?
☒	☐	ESBSs inspected this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A
☒	☐	VBSs differentials checked this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A

Comments: The brush cycles for the screens in 1A, 3B, 7B, 8C, 12B, 14A slots and in unit 11 remained in timer mode. On September 5, after multiple alarms, the brush cycle for the ESBSs in 14B and 14C slots were switched to timer mode. ESBS camera inspections occurred in units 9 through 11 on September 5. No problems were found.

VBS differential monitoring continued. No high differential measurements were recorded. Seven screens were cleaned on September 6 and 7. No mortalities were observed.

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

Yes	No	Item
☒	☐	Orifices operating satisfactory? 42 orifices were open.
☒	☐	Dewatering and cleaning systems operating satisfactory?

Comments: Orifices were adjusted as required for VBS cleaning. We continued to operate the transition screen cleaning brush manually to insure it completes a full cleaning cycle.

Bypass Facility:

Yes	No	Item
☒	☐	Sample gates on? Yes, during secondary bypass only.
☐	☒	PIT tag system on? The system remains off unless a study is occurring. The facility bypass lines provide a superior route for the fish over the PIT tag sample release lines downstream of the PIT tag sample gates.

Comments: During the bypass season, primary and secondary bypass modes return all fish are to the river. PIT tag detection occurs in the full flow pipe during primary bypass and throughout the facility during secondary bypass. Smolt monitoring occurs only on secondary bypass days.

On September 3, two subyearling Chinook mortalities were found on the ground under the count tanks. The best theory is the fish jump from the tanks. This has never happened before. However, on September 5, netting was installed over the two count tanks to insure this does not happen again. The fisheries staff was reminded they need to check the ground for fish while doing their rounds as both fish appeared to have been out of water for quite some time.

The fisheries staff collected aquatic vegetation from the separator for examination by the wildlife biologist for flowering rush on September 5. No flowering rush has been found to date.

River Conditions

General Comments: River conditions were provided by the biological services contractor, Anchor QEA and are outlined in Table 2 below. Water clarity was provided by the McNary control room. The data period runs from 0700 to 0700 hours each day.

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
144.5	102.2	55.3	0.0	71.2	70.1	6.0	6.0

Comments: The spill recorded occurred on August 31 with a data day of September 1.

Other

Inline Cooling Water Strainers: Regional discussion and agreement have moved the next cooling water strainer examinations to December.

Invasive Species: The next mussel station examinations will occur on September 10. No Siberian prawns have been observed at McNary so far this season.

Avian Activity: Avian counts continue and tailwater numbers are recorded in Table 3 below. Observations were made every morning. Overall, gull numbers have declined. However, a large number of gulls are roosting on project outside of the counting zones. Gulls were also feeding in the powerhouse zone after the bird counts had been completed. Cormorant numbers were stable. Terns and pelicans no longer appear to be on project. With the spillway closed, the gulls and cormorants appear to be feeding on out-migrating juvenile shad at the bypass outfall and in the powerhouse flow. The birds in the spillway zone are roosting on the navigation lock wing wall. An occasional great blue heron was observed in the tailwater area.

Table 3. McNary Project's Daily Tailwater Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican
Sep 1	Spill	28	2	0	1
	Powerhouse	183	3	0	0
	Outfall	0	0	0	0
Sep 2	Spill	3	2	0	0
	Powerhouse	2	0	0	0
	Outfall	1	0	0	0
Sep 3	Spill	4	6	0	0
	Powerhouse	0	0	0	0
	Outfall	0	0	0	0
Sep 4	Spill	21	9	0	0
	Powerhouse	0	0	0	0
	Outfall	43	0	0	0
Sep 5	Spill	49	12	0	0
	Powerhouse	0	0	0	0
	Outfall	30	5	0	0
Sep 6	Spill	33	7	0	0
	Powerhouse	0	1	0	0
	Outfall	13	3	0	0
Sep 7	Spill	18	4	0	0
	Powerhouse	1	0	0	0
	Outfall	11	0	0	0

In the forebay zone, an occasional gull, cormorant or osprey was observed. A few gulls were occasionally observed on the rocks by the Washington shore boat dock.

No grebes entered the gatewell slots and no pelicans or cormorants were noted in the ladders this week.

The water hazing sprinklers at the outfall and bird distress calls deployed across the project functioned satisfactory.

Fish Salvage/Rescue**:** No fish rescue occurred this week.

Research

Item: No onsite research is occurring at this time.

Project: Ice Harbor
Biologist: Ken Fone
Dates: September 1 – September 7, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☐	☒	Available turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Comments: Unit 2 was taken out of service on April 25, 2016, at 0606 hours for the runner replacement. Unit 4 was removed from service at 1218 hours on March 6, 2017, when it tripped off due to a problem in the 115 kv section 2 bus. That problem was fixed. The unit 4 hub oil drain valve was replaced to address an oil leak. Annual maintenance is now being performed on the unit. Unit 6 was removed from service on September 1 at 1437 hours due to the unit tripping off from a generator rotor ground. The brush rigging was cleaned and the unit was returned to service at 2016 hours the same day. Unit 6 was taken out of service at 0950 hours on September 5 for annual maintenance.

Unit 3 was noted to be operating slightly below the 1% peak operating efficiency range during the September 6 fishway inspection. This was due to the GDACS program needing to be updated with the narrower operating efficiency range of unit 3 since it became a fixed-blade unit. Unit 5 was operated out of priority, ahead of unit 6, from 1355 hours to 1425 hours on September 1, before unit 6 was declared out of service to fix the tripping problem.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on September 5, 6, and 7.

Fish Ladders:

Yes	No	Location, Criteria and Measurements
☒	☐	North Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	North Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	South Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	South Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	South Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)

Comments: A few sticks are visible at the water surface above the north fish ladder exit, against the bulkhead. The debris may extend down into the ladder exit trash rack, as it could not be pulled free by hand. Repairs were made to the lifting beam, so the bulkheads and trash rack will be removed for cleaning soon. The bubblers are operating satisfactorily.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☐	☐	☒	South Shore Entrance (SFE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☒	☐		South Shore Channel Velocity (Criteria: 1.5 – 4.0 fps)
☒	☐	☐	North Powerhouse Entrance (NFE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		North Powerhouse Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☐	☒	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)

☒ ☐ North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')

Comments: The north shore entrance was out of criteria on September 5, 6, and 7 with weir depths of 7.2', 7.4', and 7.3', respectively. This was mainly due to some of the electronic readings at the north shore entrance being out of calibration, which will be reported to electricians.

Auxiliary Water Supply (AWS) System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	South Shore AWS Pumps. Six of the eight south shore AWS pumps were in service.
☒	☐	North Shore AWS Pumps. Two of the three north shore AWS pumps were in service.

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? An average of 720 square yards of debris was observed.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐N/A
☐	☒	Any debris seen in gatewells (i.e: over 10% coverage)? Surface coverage ranged from 0% to 7%.
☐	☒	Any oil seen in gatewells?

Comments: None.

STSs/VBSs:

Yes	No	Item
☐	☒	STSs deployed in all slots and in service?
☐	☒	STSs in continuous-run mode (If not, then STSs are in cycle-run mode)?
☐	☒	STSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A

Comments: Unit 2 STSs are not installed since the unit will not be returned to service this year. STSs are in cycle-run mode due to the average fork length of subyearling chinook in the Lower Monumental juvenile fish sample being over 120 mm.

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

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 20.
☒	☐	Dewaterer and cleaning systems operating satisfactory?

Comments: None.

Juvenile Fish Facility: The fish facility is in bypass operation.

Fish Sampling: Sampling is done for the year.

Removable Spillway Weir (RSW): Voluntary spill for fish passage is done for the season.

River Conditions

River conditions during the week are outlined in Table 1 below.

Table 1. River conditions at Ice Harbor Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (ºF)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
23.3	17.0	0	0	70	69	7.6	7.0

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Turbine cooling water strainer inspections for lamprey are no longer required from July to November.

Invasive Species: No exotic species that are new to the area have been found.

Avian Activity: There were low numbers of piscivorous birds observed around the project. There has been less gull activity since the spill was shut off. Some pelicans and cormorants were observed foraging in the areas downstream of the powerhouse.

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

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis
Dates: September 1 - 7, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☒	☐	Available turbine units operated within 1% peak efficiency constraint.

Constraint in effect: ☒ Hard ☐Soft. Hard constraint began at 0000 hour on April 1.

Comments: Unit 1 was removed from service on December 10, 2014 for Unit Rehabilitation with an estimated return to service date of May 31, 2018. Unit 5 was removed from service on January 17, 2017 due to a turbine oil leak with an estimated return to service of June 30, 2018. Unit 2 was removed from service on August 2 to investigate a leaking blade seal with an estimated return to service of January 1 2018. Unit 4 was removed from service at 0700 on August 21 for the installation of a digital governor with an estimated return to service of September 30, 2017. Unit 3 was removed from service at 0715 on September 5 for an oil leak investigation with an estimated return to service of September 15.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Anchor QEA biologists on September 1, 2, 3 and 6.

Fish Ladders:

Yes	No	Location, Criteria and Measurements
☒	☐	North Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	North Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.4’)
☒	☐	North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)
☒	☐	South Fish Ladder Exit Differential (Criteria – Head ≤ 0.5’)
☒	☐	South Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3’)
☒	☐	South Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0’ to 1.3’)

Comments: None

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☒	☐	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☐	☒	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☒	☐	☒	South Powerhouse Entrance (SPE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐	☒	South Powerhouse Entrance (SPE-2) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐		South Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)
☐	☒	☒	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0’ or on sill)
☒	☐	☐	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 6.0’ or on sill)
☐	☒		South Shore Channel/Tailwater Differential (Criteria: 1.0’ – 2.0’)

Comments: North Shore Entrance weir (NSE-2) was out of criteria on the September 2 inspection with a reading of 7.9 feet. The operator was informed and they made adjustments to bring it back into criteria.
South Powerhouse Entrance weirs (SPE-1 and SPE-2) were on sill during all inspections. While on sill SPE-1 had readings were 7.2, 6.5, 7.8 and 7.3 feet and SPE-2 had readings of 7.2, 6.6, 7.8 and 7.3 feet.
South Shore Entrance weir (SSE-1) was out of criteria on the September 1 inspection with a reading of 7.74 feet. The operator was informed and they made adjustments to bring it back into criteria. While on sill, SSE-1 readings were 7.5, 8.1 and 8.1 feet.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☐	☒	AWS Fish Pump 1.
☒	☐	AWS Fish Pump 2.
☒	☐	AWS Fish Pump 3.

Comments: Pump 1 will be out of service throughout this season unless an emergency occurs.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? An average of 134 square yards of debris observed in forebay.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☒	☐	Any debris seen in gatewells?
☐	☒	Any oil seen in gatewells?

Comments: Gatewell debris ranged from 0 to 10% during inspections.

STSs/VBSs:

Yes	No	Item
☒	☐	STSs deployed in all slots and in service?
☐	☒	STSs in continuous-run mode (Note: if not, then STSs are in cycle-run mode)?
☐	☒	STSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A

Comments: STS's were operating on cycle mode due to CH0 lengths being over the 120 mm criteria point.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 18 or 19.
☒	☐	Dewaterer and cleaning systems operating satisfactory?

Comments: Orifice checks were conducted every six hours during this reporting period.

Collection Facility: Collection into raceways for barge transport ended at 1500 on August 14 and collection of all fish into holding tanks for truck transport began.

Transport Summary: Barging ended with the last barge departing on August 14. Alternate day trucking began on August 14 with the first truck departing on August 16. The September 5 and 7 truck transportation runs were cancelled because wild fires in the Columbia Gorge area closed I-84. The September 5 fish were transported and released at Windust Park and the September 7 fish were returned to the river via the JFF bypass pipe. Trucking is scheduled to continue through 0700 on October 1. A total of 96 fish were collected, 83 were transported and 20 fish were bypassed.

River Conditions

General Comments.

Table 1. 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
22.5	19.4	3.0	0	71.3	69.0	7.1	5.1

*Scrollcase temperatures.

Spill: The RSW spill was closed on August 18. Summer spill ended at 0000 on September 1. The dam returned to intermittent spill on September 5 to keep up with the river flow with only one unit running.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 16. There were zero live fish. Mortalities included 14 Siberian prawns and 13 YOY American shad.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on September 3. During this reporting period, SMP personnel euthanized 84 Siberian prawns with a total weight of 164 grams.

Avian Activity: Gulls were the predominant piscivorous bird species observed during fish ladder inspections this week. Tailrace counts ended on July 13.

Research: No onsite research is in progress at this time.

Project: Little Goose
Biologists: Scott St. John & Richard Weis
Dates: September 1-7, 2017

Turbine Operation

Yes No Turbine Unit Status
☐ ☒ All 6 turbine units available for service throughout the week (see Table 1 for outage details).
☒ ☐ Available turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Table 1. Little Goose Unit Outages

Unit	OOS Date	OOS Time	RTS Date	RTS Time	Outage Description
5	14-Apr	14:11	ERTS Feb 2018	17:00	Forced: Excessive Vibration
4	14-Aug	07:50	09-Sep	17:00	Unit Annual

Comments: None

Adult Fish Passage Facility

The adult fishway was inspected by Corps biologists and Anchor QEA staff on September 03, 05 and 07.

Fish Ladder:

Yes	No	Location, Criteria and Measurements
☒	☐	Fish Ladder Exit Differential (Criteria – Head ≤ 0.5')
☒	☐	Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3')
☒	☐	Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')
☐	☒	Emergency Ladder Exit Cooling Water Pumps in Service
☐	☒	Emergency Ladder Exit Cooling Water Pumps Operating Satisfactorily.

Comments: Emergency cooling pump permanent power is scheduled to be installed during the winter maintenance outage.

Fishway Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☐	☒	☐	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0')
☐	☒	☐	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 8.0')
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☐	☐	☒	North Powerhouse Entrance (NPE-1) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☐	☒	North Powerhouse Entrance (NPE-2) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☒		North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☐	☒	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 6.0' or on sill)
☐	☒	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 6.0' or on sill)
☒	☐		North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐		Collection Channel Surface Velocity (Criteria: 1.5 – 4.0 fps)

Comments: NSE 1 and 2 were out of criteria on 9/7 inspection. Returned to criteria within the hour.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	AWS Fish Pump 1 (operating).
☒	☐	AWS Fish Pump 2 (operating).
☒	☐	AWS Fish Pump 3 (operating).

Comments: None.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☐	☒	Any debris seen in gatewells (i.e: over 10% coverage)?
☐	☒	Any oil seen in gatewells?

Comments: None

Spillway Weir: Out for the season.

ESBS/VBS:

Yes	No	Item
☒	☐	ESBSs deployed in all slots and in service?
☐	☒	ESBSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☒	☐	VBSs differentials checked this week? If so, were results acceptable? ☒ Yes ☐ No ☐ N/A

Comments: None

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 21 open.
☒	☐	Dewaterer and cleaning systems operating satisfactory? N/A

Comment: Orifices and primary dewatering structure are being back flushed every 8 hours.

Collection Facility: Juvenile Fish Facility is currently operating.

Transport Summary: The collection and transportation facility operated in criteria this report period. A total of 335 fish were collected with 256 bypassed due to fires along the Columbia River near Bonneville Dam. Truck transportation commenced on August 16 and occurred every other day. The descaling and mortality rates were 1.6% and 1.7% respectively. This weekly report period saw 7 adult lamprey removed from the raceways or sample and released one mile above the Dam at Little Goose Landing.

River Conditions

River conditions during the week are outlined in Table 2 below.

Table 2. River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
31.0	18.8	0	0	70.6	70.1	6.0	6.0

*Ladder temperature.

Comment: Spill ended at midnight August 31.

Other

Inline Cooling Water Strainers: Cooling water strainers will be inspected again starting in December.

Invasive Species: No invasive species have been observed on the mussel station.

Avian Activity: USDA bird hazing ended on June 25. See table 3 for USACE counts.

Table 3. Daily Piscivorous bird counts at Little Goose Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
09-01	1300	22	12	0	0
09-02	1130	10	6	0	0
09-03	1300	7	9	0	0
09-04	1100	19	14	0	0
09-05	1330	14	8	0	0
09-06	1400	6	5	0	0
09-07	1200	6	5	0	0

Gas Bubble Trauma: Ended for season.

Research: No research is currently being conducted at this time.

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. There were 3,771 prawns collected in the sample and euthanized during this report period. Prawn numbers are outlined in Table 4 below.

Table 4. Daily Siberian prawn sample.

Date	Sample	Collection
09-01		528
09-02		509
09-03		365
09-04		420
09-05		785
09-06		412
09-07		752
Total		3771

Project: Lower Granite
Biologists: Elizabeth Holdren and Stephen Hampton
Dates: September 1 – September 7, 2017

Turbine Operation

Yes	No	Turbine Unit Status
☐	☒	All 6 turbine units available for service throughout the week (see comments below for outage details).
☒	☐	Available turbine units operated within 1% peak efficiency constraint. Constraint in effect: ☒ Hard ☐Soft.

Comments: Unit 1 remains out of service for blade/runner repair. Unit 2 currently has hydraulically locked blades that limit operation to the upper end of 1% peak efficiency constraint. Unit 6 remains out of service for annual maintenance. Unit 2 remained in standby mode from 0001 hours September 1 to 0610 hours September 5 due to confusion related to multiple teletypes being received by operation. During unit 2 startup the AC turbine bearing oil pump failed to develop flow requiring it to be removed from service between 0745-0945 hours to test and prime the AC oil pump and not risk tripping the unit. Unit 2 is currently the priority operating unit.

Adult Fish Passage Facility

General comments: Adult fish facilities were inspected by Corps or Anchor QEA biologists September 2, 5, 6, and 7.

Fish Ladder:

Yes	No	Location, Criteria, and Measurements
☒	☐	Fish Ladder Exit Differential (Criteria – Head ≤ 0.5')
☒	☐	Fish Ladder Picketed Lead Differential (Criteria – Head ≤ 0.3')
☒	☐	Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')
☒	☐	Ladder Temperature Pumps in Service.
☒	☐	Ladder Temperature Pumps Operating Satisfactorily.

Comments: Fish ladder temperature control system pumps remain in operation.

Fish Ladder Entrances and Collection Channel:

Yes	No	Sill	Location, Criteria and Measurements
☒	☐	☐	South Shore Entrance (SSE-1) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐	☐	South Shore Entrance (SSE-2) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐		South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐	☒	North Powerhouse Entrance (NPE-1) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐	☒	North Powerhouse Entrance (NPE-2) Weir Depth (Criteria: ≥ 8.0' or on sill)
☒	☐		North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐	☐	North Shore Entrance (NSE-1) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☒	☐	North Shore Entrance (NSE-2) Weir Depth (Criteria: ≥ 7.0' or on sill)
☐	☒		North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
☒	☐		Collection Channel Velocity (Criteria: 1.5 – 4.0 fps)

Comments: NSE2 has been out of service since 2011 and remains set with a chain fall hoist in the closed position to improve channel/tailwater head differential. NPEs depth elevation over the weir remain at 628.0 feet (sill) until the gates are returned to service. NPE1 repairs were completed August 30 and will be returned to service following operational checks. NPE2 repairs are ongoing. North shore channel/tailwater differential was out of criteria on

September 7 with a reading of 0.5 feet. NSE1 was set to hand operation earlier this season due to the gates inability to automatically adjust during spill. The north shore channel/tailwater reading of 0.5 feet was likely due to the gate depth not being adjusted after MOP operation ended.

Collection Channel Velocity: Collection channel velocities were in criteria on all inspections.

Auxiliary Water Supply System:

Yes	No	In Service and Operating Satisfactory?
☒	☐	AWS Fish Pump 1 (operating).
☐	☒	AWS Fish Pump 2 (operating).
☒	☐	AWS Fish Pump 3 (operating).

Comments: AWS pump 2 is in standby mode.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes	No	Item
☒	☐	Forebay debris load acceptable? Debris was observed in the powerhouse forebay this week.
☒	☐	Trash rack differentials measured this week? If so, were differentials acceptable? ☒ Yes ☐ No ☐ N/A.
☐	☒	Debris in gatewells (i.e.: over 10% coverage)?
☐	☒	Oil in gatewells?

Comments: Forebay debris in front of the powerhouse averaged about 152.7 square yards this week.

ESBSs/VBSs:

Yes	No	Item
☐	☒	ESBSs deployed in all slots and in service?
☐	☒	ESBSs inspected this week? If so, were results acceptable? ☐ Yes ☐ No ☒ N/A
☐	☒	VBSs differentials checked this week? If so, were results acceptable? ☐ Yes ☐ No ☐ N/A

Comments: ESBS were removed and dogged off in gatewell slots August 1-3 as part of early dewatering for Phase 1a.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes	No	Item
☐	☒	Orifices operating satisfactory? There are 18 orifices operating.
☐	☒	Dewaterer and cleaning systems operating satisfactory?

Comments: Dewatered.

Collection Facility: Dewatered.

Transport Summary: No transport from Granite.

River Conditions

General Comments.

Table 1: 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
26.5	19.6	3.6	3.3	69.5	66.9	5.0+	4.8

*Cooling water intake temperature.

Other

Adult Fish Trap Operations: The adult trap is in 24 hour operation with a 20% sample rate.

Inline Cooling Water Strainers: N/A.

Invasive Species: The Zebra mussel trap was inspected September 5. No signs of mussels were present.

Avian Activity: N/A

Table 2. Daily piscivorous bird counts at Lower Granite Dam.

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
September 1	13:30	2	21	0	0
September 2	13:30	2	12	0	0
September 3	11:46	3	29	0	0
September 4	08:01	8	27	0	0
September 5	15:12	4	24	0	1
September 6	15:25	1	33	0	1
September 7	14:40	4	25	0	1

Spill: Lower Granite extended spill operation for phase 1a began with the RSW open at 0600 hours September 1. Spill was changed to spillways 6 and 8 open 2 stops each for a combined spill of 6.8 kcfs at 1357 hours September 1 due to forebay temperatures. Spill was again shifted to spillways 2 and 3 open 2 stops each for a combined spill of 6.8 kcfs per the TMT coordination September 6.

Gas Bubble Trauma (GBT) Monitoring: N/A.

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