U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#29-2017

Project: McNary
Biologist: Bobby Johnson and Denise Griffith
Dates: September 8 – 14, 2017

Turbine Operation

General Comments: The hard 1% peak efficiency constraint continues.

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.
8	Aug 11 to 14	3.4 days	Annual maintenance.
12, 13 & 14	Sep 12	65 minutes	Extended-length submersible bar screens (ESBSs) camera inspections.

Adult Fish Passage Facilities

General Comments: McNary fisheries biologists performed measured inspections of the adult fishways on September 8, 10 and 12. Visual fish counts and video review of lamprey passage continue. Temperature data was collected on September 12.

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’): 0.7’ on September 12.
☒	☐	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 continues to be a problem.

Debris loads at the Washington exit and along the shoreline were minimal. The regulating weir set point was adjusted on September 8.

At the Oregon exit and along the shoreline, debris loads were moderate. On September 12, the general maintenance staff cleaned the picketed leads, which resolved the out of criterion point mentioned above. The encoder for tilting weir 339 has not been replaced. This weir rarely moves and will be adjusted manually. The regulating weir set point was adjusted on September 10. The tilting weirs set point was adjusted on September 8.

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'): 7.9' on September 8.
☐	☒	NFEW3 Weir Depth (Criteria – ≥ 8.0'): 7.9' on September 8.
☒	☐	South Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
☒	☐	SFEW1 Weir Depth (Criteria – ≥ 8.0')
☒	☐	SFEW2 Weir Depth (Criteria – ≥ 8.0')
☒	☐	Oregon Collection Channel Velocities (Criteria –1.5 to 4.0 fps): Averaged 1.9 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 criterion points were resolved on September 10, when the biologist requested the set points for NFEW2 and NFEW3 be adjusted.

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 22 to 23 degrees.
☒	☐	Oregon Ladder Fish Pump 2: Blade angle was 21 to 22 degrees.
☒	☐	Oregon Ladder Fish Pump 3: Blade angle was 21 to 22 degrees.
☒	☐	Oregon North Powerhouse Pool supply from juvenile fishway.

Comments: There is nothing to report.

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, 64 juvenile lamprey and 648 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 continues to dissipate.
☒	☐	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 light 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.

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

VBS differential monitoring continued. No high differential measurements were recorded. Seventeen screens total were cleaned on September 9, 11, 13 and 14. 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.

During scheduled maintenance, the pulley system for the mast light near the head box failed. Repair will continue into next week. The fisheries staff will use other light sources until repairs are completed.

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. Flows and spill are recorded in one-thousand cubic feet per second (kcfs). Temperatures are recorded in degrees F.

Table 2. River Conditions at McNary Dam.

Daily Average River Flow		Daily Average Spill		Water Temperature		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
121.9	93.8	0.0	0.0	70.1	69.7	6.0	6.0

Comments: There is nothing to report.

Other

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

Invasive Species: The mussel station examinations on September 10 revealed no problems. 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 and cormorant numbers were stable. A large number of gulls were roosting on project outside of the counting zones. Terns and pelicans no longer appear to be on project. Gulls and cormorants were feeding in the powerhouse flow and at the bypass outfall on out-migrating juvenile shad. More gulls appeared to be feeding in the powerhouse zone after the bird counts had been completed. The birds in the spillway zone are roosting on the navigation lock wing wall and other structures.

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

Date	Zone	Gull	Cormorant	Tern	Pelican
Sep 8	Spill	48	7	0	0
	Powerhouse	0	0	0	0
	Outfall	53	0	0	0
Sep 9	Spill	0	0	0	0
	Powerhouse	8	1	0	0
	Outfall	22	0	0	0
Sep 10	Spill	71	9	0	0
	Powerhouse	7	3	0	0
	Outfall	24	0	0	0
Sep 11	Spill	64	21	0	0
	Powerhouse	9	0	0	0
	Outfall	19	0	0	0
Sep 12	Spill	38	5	0	0

	Powerhouse	2	1	0	0
	Outfall	15	5	0	0
Sep 13	Spill	85	14	0	0
	Powerhouse	6	0	0	0
	Outfall	6	0	0	0
Sep 14	Spill	73	0	0	0
	Powerhouse	12	1	0	0
	Outfall	24	11	0	0

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

No birds entered the gatewell slots or 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/Charlie Dennis
Dates: September 8 – September 14, 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 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 all fishway inspections. 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.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on September 11, 12, and 13.

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. Bulkheads and trash rack were removed for cleaning on September 14. 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 12, with weir depth of 7.7'. This was mainly due to some of the electronic readings at the north shore entrance being out of calibration, which was reported to electricians on September 14.

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 700 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 5%.
☐	☒	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
29.4	17.0	0	0	69	69	8.6	5.8

*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. Three of the avian deterrent wires, which broke off during high flows earlier in the year, were replaced by APHIS Wildlife Services on September 13.

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

Project: Lower Monumental
Biologists: Chuck Barnes and Raymond Addis
Dates: September 8 - 14, 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 and returned to service at 1620 on September 13. Unit 3 was removed from service at 0715 on September 5 for an oil leak investigation and returned to service with hydraulically blocked blades at 0742 on September 12.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Anchor QEA biologists on September 8, 9, 10 and 13.

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: South Powerhouse Entrance weirs (SPE-1 and SPE-2) were on sill during all inspections. While on sill, readings for both were 7.9, 7.7, 7.1 and 7.7 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 468 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. Unit 3 and Unit 4 STSs were inspected on September 11. No issues were found.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 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 truck transportation runs were cancelled during the recording period because wild fires in the Columbia Gorge area closed I-84. The fish were returned to the river via the JFF bypass pipe. Trucking is scheduled to continue through 0700 on October 1. A total of 78 fish were collected and 59 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
30.7	20.4	11.3	0	70.0	68.7	7.1	5.9

*Scrollcase temperatures.

Spill: The RSW spill was closed on August 18. Summer spill ended at 0000 on September 1. The dam utilized intermittent spill to keep up with the river flow when needed.

Other

Inline Cooling Water Strainers: Cooling water strainers were last inspected on August 16. Inspections will continue December.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on September 3.
During this reporting period, SMP personnel euthanized 149 Siberian prawns with a total weight of 220 grams.

Avian Activity: Gulls were the predominant piscivorous bird species observed during fish ladder inspections this week.

Table 2. Tailrace counts of foraging piscivorous birds at Lower Monumental Dam.

Date	Time	Gulls	Cormorants	Terns	Grebes	Pelicans

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 8-14, 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	Excessive Vibration
4	14-Aug	07:50	15-Sep	14:30	Unit Annual & Vacuum Breaker Failure
3	11-Sep	08:13	29-Sep	17:00	Unit Annual

Comments:

Adult Fish Passage Facility

The adult fishway was inspected by Corps biologists and Anchor QEA staff on September 10, 13 and 14.

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: None

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: Trash rack differentials were measured on units 1 and 2 on September 8 and were in criteria.

Spillway Weir: Temporary spillway weir was closed for the season on July 19 at 09:00.

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: VBS differentials were measured on units 1 and 2 on September 8 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes	No	Item
☒	☐	Orifices operating satisfactory? How many are open and in service? 20 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 425 fish were collected and bypassed due to Columbia River Gorge fires (MFR 17 JFT 03). The descaling and mortality rates were 1.6% and 1.0% respectively. This weekly report period saw 3 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* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
33.5	20.2	0	0	69.3	68.5	6.0	5.0

*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
09-08	08:00	4	3	0	0
09-09	12:30	15	16	0	0
09-10	12:15	20	20	0	0
09-11	13:00	23	17	0	0
09-12	13:30	14	19	0	0
09-13	13:30	18	15	0	0
09-14	13:00	19	11	0	0

Gas Bubble Trauma: Final GBT sampling for the season was conducted on August 21.

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 1943 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
09-08	333	333
09-09	236	236
09-10	265	265
09-11	200	200
09-12	257	257
09-13	233	233
09-14	419	419
Total	1943	1943

Project: Lower Granite
Biologists: Elizabeth Holdren and Stephen Hampton
Dates: September 8 – September 14, 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.

Adult Fish Passage Facility

General comments: Adult fish facilities were inspected by Corps or Anchor QEA biologists September 9, 11, 12, and 13.

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. NSE1 was set at sill elevation of 625.0 feet earlier this season due to the gates inability to automatically adjust during spill. NSE1 was put in automatic mode September 6 and continues to be unable to adjust to tailrace conditions. North shore channel/tailwater differential was out of criteria on all inspections. NSE channel/tailwater head differentials were likely out of criteria due to NPEs being out of service and NSE1 inability to adjust to tailwater conditions.

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 72.0 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 are dogged off in gatewell slots.

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^o)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
32.4	21.2	3.5	3.3	68.7	66.8	5.0+	5.0+

*Fish ladder collection channel were taken in place of cooling water intake temperature.

Other

Adult Fish Trap Operations: The adult trap is in 24 hour operation. The sample rate was raised from 20% to 33% sample rate September 13.

Inline Cooling Water Strainers: N/A.

Invasive Species: No signs of mussels were present during the September 11 inspection.

Avian Activity: N/A

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

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
September 8	1400	10	20	0	0
September 9	1000	3	2	0	0
September 10	0907	2	28	0	1
September 11	1530	3	5	0	0
September 12	1500	9	20	0	0
September 13	1230	3	29	0	1
September 14	1305	16	23	0	0

Spill: Lower Granite extended spill operation for phase 1a continues with spillways 2 and 3 open 2 stops each for a combined spill of 6.8-7.0 kcfs from 0600-1800 hours daily.

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

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