

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#24-2017**

**Project: McNary**

Biologist: Bobby Johnson and Denise Griffith

Dates: August 4 – 10, 2017

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**Turbine Operation**

General Comments: The hard 1% peak efficiency constraint and the saw tooth unit priority for warm water temperature abatement continue.

- 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 17	71 days	9-year overhaul.
4 & 14	Aug 8	1.1 hours total	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 August 4, 6 and 9. Visual fish counts and video review of lamprey passage continue. Temperature data was collected on August 9.

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.

Debris loads at the Washington exit and along the shoreline were minimal. The regulating weir tripped an alarm and was reset on August 4 and 9. The tilting weirs set point was adjusted on August 9.

At the Oregon exit and along the shoreline, debris loads were moderate. The encoder for tilting weir 339 failed on August 4. This weir rarely moves and will be adjusted manually until the encoder is replaced. The regulating weir set point was adjusted on August 4. The tilting weirs set point was adjusted on August 4 and 9.

Fishway Entrances and Collection Channel:

Criteria Met?

<u>Yes</u>	<u>No</u>	<u>Location, Criteria and Measurements</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	North Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NFEW2 Weir Depth (Criteria – $\geq 8.0'$ ): 7.9' on August 4.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	NFEW3 Weir Depth (Criteria – $\geq 8.0'$ ): 7.9' on August 4.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	South Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SFEW1 Weir Depth (Criteria – $\geq 8.0'$ )
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SFEW2 Weir Depth (Criteria – $\geq 8.0'$ )
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Collection Channel Velocities (Criteria –1.5 to 4.0 fps): Averaged 2.2 fps.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Washington Entrance Head Differential (Criteria – 1.0' to 2.0')
<input checked="" type="checkbox"/>	<input type="checkbox"/>	WFE2 Weir Depth (Criteria – $\geq 8.0'$ )
<input checked="" type="checkbox"/>	<input type="checkbox"/>	WFE3 Weir Depth (Criteria – $\geq 8.0'$ )

Comments: With low tailwater elevations and minor sensor calibration drifts, NFEW2 and NFEW3 were slightly out of criteria on August 4. NFEW2 and NFEW3 received scheduled mechanical maintenance on August 7 and 8. SFEW1 and SFEW2 received scheduled mechanical maintenance on August 8 and 9. The panel view at the Oregon north powerhouse entrance was out of service all week.

Auxiliary Water Supply System:

<u>Yes</u>	<u>No</u>	<u>In Service?</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Washington shore Wasco County PUD Turbine Unit.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Washington shore Wasco PUD Bypass. Service was not required.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Ladder Fish Pump 1: Blade angle was 22 degrees.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Ladder Fish Pump 2: Blade angle was 18 or 20 degrees when in service.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Ladder Fish Pump 3: Blade angle was 22 degrees.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon North Powerhouse Pool supply from juvenile fishway.

Comments: On August 9, from 1545 to 1555 hours, fish pump 2 was out of service during electrical switching.

**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, no juvenile lamprey and 6,701 smolts were bypassed. On August 6, the biologist inadvertently forgot to turn on the sample gates after the switch to secondary bypass. The gates were turned on at 0803 hours. Seven samples were missed.

Forebay Debris/Gatewell Debris/Oil:

<u>Yes</u>	<u>No</u>	<u>Item</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forebay debris load acceptable? Removal would be prudent.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trash rack differentials measured? If so, were differentials acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Any debris seen in gatewells?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Any oil seen in gatewells?

Comments: Forebay debris loads near the powerhouse were minimal to very light. Debris loads at the spillway were moderate to heavy. New incoming debris loads were minimal. The debris continues to slowly dissipate. No trash racks were cleaned.

On August 10, a slight amount of hydraulic fluid was removed from 9A slot. The unit was in standby. The fluid was removed with absorbent pads and booms.

ESBSs/Vertical barrier screen (VBSs):

- | <u>Yes</u>                          | <u>No</u>                | <u>Item</u>  |
|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | ESBSs deployed in all slots?   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | ESBSs inspected this week? If so, were results acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | VBSs differentials checked this week? If so, were results acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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. ESBS camera inspections occurred in units 4 and 14 on August 8. No problems were found.

VBS differential monitoring continued. No high differential measurements were recorded. A total of seven VBSs were cleaned on August 8 and 10. No mortalities were observed.

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

- | <u>Yes</u>                          | <u>No</u>                | <u>Item</u>   |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Orifices operating satisfactory? 42 orifices were open. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Dewatering and cleaning systems operating satisfactory? |

Comments: Orifices were adjusted as required for VBS cleaning. On August 9, the office operators for 1B and 5A slots were repaired. We continued to operate the transition screen cleaning brush manually to insure it completes a full cleaning cycle.

Bypass Facility:

- | <u>Yes</u>                          | <u>No</u>                           | <u>Item</u>  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Sample gates on? Yes, during secondary bypass only.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 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.

The wet lab floor was resealed on August 4. The fisheries staff collected aquatic vegetation from the separator for examination by the wildlife biologist for flowering rush on August 8. No evidence of rush was found.

**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. Routine summer spill in support of fish passage continues. Fifty percent of river flow is spilled in the summer season.

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
153.5	125.5	76.9	62.9	71.6	71.1	6.0	5.8

Comments: Issues with the crane attached to the spillgate in bay 2 continued.

Anchor QEA continued daily temperature reports. No problems occurred this week. Weekly data will be reported separately from the smolt monitoring report.

### 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 in late August. No Siberian prawns have been observed at McNary so far this season.

Avian Activity: Overall, bird numbers appear greatly reduced so far this season. Avian counts continued and tailwater numbers are recorded in Table 3 below. Observations were made every morning.

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

Date	Zone	Gull	Cormorant	Tern	Pelican
Aug 4	Spill	0	0	0	2
	Powerhouse	0	0	0	0
	Outfall	0	0	0	5
Aug 5	Spill	5	0	11	9
	Powerhouse	0	0	0	6
	Outfall	0	7	0	10
Aug 6	Spill	4	6	0	3
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
Aug 7	Spill	31	6	9	9
	Powerhouse	0	0	0	0
	Outfall	0	0	0	1
Aug 8	Spill	13	5	3	10
	Powerhouse	0	0	0	2
	Outfall	0	2	0	3
Aug 9	Spill	8	4	6	5
	Powerhouse	0	0	0	0
	Outfall	0	0	0	2
Aug 10	Spill	15	4	17	5
	Powerhouse	0	0	0	0
	Outfall	0	1	0	0

In the spill zone, the pelicans were along the navigation lock wing wall. The terns were feeding in the spill flow. The gulls and cormorants were roosting on the wing wall. In the powerhouse zone, the pelicans were feeding along the Oregon shoreline below the separator observation building and terns were occasionally noted during the day. In the outfall zone, pelicans and cormorants were observed feeding. Occasionally, terns were noted passing by the outfall.

In the forebay zone, two to four juvenile gulls were noted scavenging. Eleven to 17 grebes were observed. They appeared to be roosting more often than feeding. Osprey, pelicans and cormorants were noted occasionally. A few gulls, pelicans and cormorants were 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.

PSMFC personnel continued daily observations of pelican behavior at the outfall. The project fisheries staff continued counting and recording adult shad fallbacks at the separator. The water hazing sprinklers at the outfall functioned satisfactory.

Fish Salvage/Rescue: On August 8, one live crayfish was removed from unit 5 scrollcase. On August 9, one live adult lamprey was removed from the draft tube. The mortalities were one 2 foot sturgeon and one channel catfish.

### **Research**

Item: No onsite research is occurring at this time. Due to low fish numbers, the last gas bubble trauma (GBT) examination occurred on August 6. Of the 200 juvenile salmonids examined for GBT, no fish exhibiting signs of GBT.

**Project: Ice Harbor**

Biologist: Ken Fone

Dates: August 4 – August 10, 2017

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**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 5 was taken out of service on August 7 at 0715 hours for annual maintenance.

**Adult Fish Passage Facilities**

Fish facility personnel inspected the adult fishways on August 7, 8, and 9.

Fish Ladders:

Yes No Location, Criteria and Measurements

- North Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')  
  North Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  0.3')  
  North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')  
  South Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')  
  South Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  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 are currently being made to the lifting beam so that the bulkheads and trash rack can be removed for cleaning. 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:  $\geq$  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:  $\geq$  8.0' or on sill)  
  North Powerhouse Channel/Tailwater Differential (Criteria: 1.0' – 2.0')  
   North Shore Entrance (NSE-1) Weir Depth (Criteria:  $\geq$  8.0' or on sill)  
  North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')

Comments: None.

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 5 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 15%.  
      Any oil seen in gatewells?

Comments: An oil sheen was observed in 5A head gate slot and 5A gatewell slot on August 10. Oil socks were already deployed in the head gate slot. The oil sheen was most likely residual oil that came off of the hydraulic lifts for the head gate.

STSS/VBSs:

Yes   No   Item

- STSSs deployed in all slots and in service?  
      STSSs in continuous-run mode (If not, then STSSs are in cycle-run mode)?  
      STSSs 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 STSSs are not installed since the unit will not be returned to service this year. STSSs 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: The light for orifice 1AN was found to be burned out on August 8. Orifice 1AN was closed and orifice 1AS was opened in its place until August 14, at which time the orifices were switched back to normal following the replacement of the light.

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 occurring, including spill through the RSW.

## 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* (°F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
36.8	30.1	26.7	19.9	71	71	8.2	7.6

\*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 moderate numbers of piscivorous birds observed around the project. Most of the gulls were observed roosting on Eagle Island.

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

Other: An adult Pacific lamprey that appeared to have been dead for at least a day was observed floating in the south fish ladder just downstream of the ladder exit pool on August 9. The lamprey was missing its head and tail. The carcass most likely drifted into the ladder from the forebay. Two other adult lamprey mortalities that were found at the south shore fish count station in recent weeks were documented in 17 IHR 13 MFR available on the FPOM web site.



**Project: Lower Monumental**

Biologists: Chuck Barnes and Raymond Addis

Dates: August 4 - 10, 2017

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**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 February 28, 2018. Unit 5 was removed from service on January 17, 2017 due to a turbine oil leak with an estimated return to service of March 31, 2018. Unit 6 was removed from service on July 5 for annual maintenance and to install a digital governor with an estimated return to service of August 19, 2017. 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.

**Adult Fish Passage Facility**

The adult fishway was inspected by Corps and Anchor QEA biologists on August 4, 5, 6 and 9.

Fish Ladders:

Yes No Location, Criteria and Measurements

- North Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')
- North Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  0.4')
- North Fish Ladder Depth over Weirs (Criteria – Head over weir 1.0' to 1.3')
- South Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')
- South Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  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:  $\geq$  8.0' or on sill)
- North Shore Entrance (NSE-2) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- North Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- South Powerhouse Entrance (SPE-1) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- South Powerhouse Entrance (SPE-2) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- South Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- South Shore Entrance (SSE-1) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- South Shore Entrance (SSE-2) Weir Depth (Criteria:  $\geq$  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 were 5.4, 5.5, 5.6 and 5.0 feet. South Shore Entrance weir (SSE-1) was on sill during all inspections. While on sill, SSE-1 readings were 5.1, 6.0, 6.1 and 5.5 feet.

Auxiliary Water Supply System:

<u>Yes</u>	<u>No</u>	<u>In Service and Operating Satisfactory?</u>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AWS Fish Pump 1.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	AWS Fish Pump 2.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	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:

<u>Yes</u>	<u>No</u>	<u>Item</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Forebay debris load acceptable? An average of 3 square yards of debris observed in forebay.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trash rack differentials measured this week? If so, were differentials acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Any debris seen in gatewells?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Any oil seen in gatewells?

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

STSS/VBSs:

<u>Yes</u>	<u>No</u>	<u>Item</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	STSS deployed in all slots and in service?
<input type="checkbox"/>	<input checked="" type="checkbox"/>	STSS in continuous-run mode (Note: if not, then STSS are in cycle-run mode)?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	STSS inspected this week? If so, were results acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	VBSs differentials checked this week? If so, were results acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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:

<u>Yes</u>	<u>No</u>	<u>Item</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Orifices operating satisfactory? How many are open and in service? 19 or 20.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dewaterer and cleaning systems operating satisfactory?

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

Primary dewatering incline screen brush problem was resolved on August 7. The primary dewatering system (PDS) was partially dewatered on August 10 to check for and remove piscivorous fish that may be holding and feeding upon juvenile salmonids. Four walleye were netted out of the PDS and 4 additional walleye were flushed out of the system during the process. A more detailed account of this procedure can be found in the FPOM documentation, 17 LMN 08 MOC.

Collection Facility: Collection into raceways for transport began at 0700 on May 1.

Transport Summary: Every-day barging changed to alternate day barging on May 26. A total of 178 fish were collected and 244 (transport total includes 66 fish collected on August 3) were transported during this reporting period.

**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
35.1	29.2	17.0	16.4	73.2	70.1	7.1	4.2

\*Scrollcase temperatures.

**Other**

Inline Cooling Water Strainers: The next cooling water strainer inspection will be in December.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on August 3. During this reporting period, SMP personnel euthanized 95 Siberian prawns with a total weight of 121 grams.

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

Tailrace counts of foraging piscivorous birds at Lower Monumental Dam ended July 13.

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

**Project: Little Goose**

Biologists: Scott St. John & Richard Weis

Dates: August 04 – August 10, 2017

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**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

Comments: Other outages include units for Doble testing (FPP Appendix A, Table A-1).

**Adult Fish Passage Facility**

The adult fishway was inspected by Corps biologists and Anchor QEA staff on August 05, 06 and 10.

Fish Ladder:

Yes No Location, Criteria and Measurements

- Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')
- Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  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:  $\geq$  8.0')
- South Shore Entrance (SSE-2) Weir Depth (Criteria:  $\geq$  8.0')
- South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- North Powerhouse Entrance (NPE-1) Weir Depth (Criteria:  $\geq$  7.0' or on sill)
- North Powerhouse Entrance (NPE-2) Weir Depth (Criteria:  $\geq$  7.0' or on sill)
- North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- North Shore Entrance (NSE-1) Weir Depth (Criteria:  $\geq$  6.0' or on sill)
- North Shore Entrance (NSE-2) Weir Depth (Criteria:  $\geq$  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: Water depth over weirs at the North Shore Entrance were measured at 5.4 feet on August 10. Adjustments were made and the fishway is currently in criteria.

Auxiliary Water Supply System:

- | <u>Yes</u>                          | <u>No</u>                | <u>In Service and Operating Satisfactory?</u> |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | AWS Fish Pump 1 (operating).                  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | AWS Fish Pump 2 (operating).                  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | AWS Fish Pump 3 (operating).                  |

Comments: None.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil:

- | <u>Yes</u>                          | <u>No</u>                           | <u>Item</u>  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Forebay debris load acceptable.  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Trash rack differentials measured this week? If so, were differentials acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A. |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Any debris seen in gatewells (i.e: over 10% coverage)?   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Any oil seen in gatewells?   |

Comments: There is an estimated 150 square feet of floating woody debris currently in the forebay. Trash rack differentials on units 1 and 2 were measured on July 27 and were in criteria.

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

ESBS/VBS:

- | <u>Yes</u>                          | <u>No</u>                           | <u>Item</u>  |
|-------------------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | ESBSs deployed in all slots and in service?  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | ESBSs inspected this week? If so, were results acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | VBSs differentials checked this week? If so, were results acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A |

Comments: VBS differentials were measured on units 1 and 2 on July 27 and were in criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume:

- | <u>Yes</u>                          | <u>No</u>                | <u>Item</u>  |
|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Orifices operating satisfactory? How many are open and in service? <u>20 open.</u> |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Dewaterer and cleaning systems operating satisfactory? N/A                         |

Comment: Orifices and primary dewatering structure are being backflushed and cleaned 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 2,420 fish were collected and 2,867 were transported during this report period. Fish transported includes the fish that were collected on August 03. Barge transportation occurred every other day. The descaling and mortality rates were 1.6% and 1.3% respectively. This weekly report period saw 30 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
35.0	29.0	13.3	9.5	73.5	71.6	6.0	5.5

\*Ladder temperature.

Comment: None.

## 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
08-04	08:00	28	4	0	2
08-05	10:30	25	1	0	0
08-06	08:00	26	2	0	2
08-07	08:00	7	0	0	0
08-08	07:30	23	1	0	1
08-09	13:00	11	5	0	0
08-10	11:00	21	2	0	1

Gas Bubble Trauma: GBT sampling was conducted on August 07. There were 100 fish examined, no signs of GBT were seen.

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 881 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
08-04	72	280
08-05	69	272
08-06	75	286
08-07	161	322
08-08	111	222
08-09	166	332
08-10	227	454
Total	881	2168

**Project: Lower Granite**

Biologists: Elizabeth Holdren and Stephen Hampton

Dates: August 4 – August 10, 2017

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**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 4 was removed from service at 0705 hours July 31 for annual maintenance. Unit 3 was forced out of service from 1700 hours August 3 to 1642 hours August 9 due to the ESBS being stuck in gateway slot 3A.

**Adult Fish Passage Facility**

General comments: Adult fish facilities were inspected by Corps or Anchor QEA biologists August 4, 5, 6, and 9.

Fish Ladder:

Yes No Location, Criteria, and Measurements

- Fish Ladder Exit Differential (Criteria – Head  $\leq$  0.5')
- Fish Ladder Picketed Lead Differential (Criteria – Head  $\leq$  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: The 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:  $\geq$  8.0' or on sill)
- South Shore Entrance (SSE-2) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- South Shore Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- North Powerhouse Entrance (NPE-1) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- North Powerhouse Entrance (NPE-2) Weir Depth (Criteria:  $\geq$  8.0' or on sill)
- North Powerhouse Entrance Channel/Tailwater Differential (Criteria: 1.0' – 2.0')
- North Shore Entrance (NSE-1) Weir Depth (Criteria:  $\geq$  7.0' or on sill)
- North Shore Entrance (NSE-2) Weir Depth (Criteria:  $\geq$  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. NPE1 and NPE 2 remain out of service in the sill position until in water work repairs are coordinated. An ROV inspection is needed to determine requirements for repairing the gates. Cotter pins on all gates are scheduled to be replaced during the 2017-2018 winter adult fishway outage.

Collection Channel Velocity: N/A.



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. AWS pump 1 was removed from service from 1701-2100 hours August 7 during 5kv power line feeding the JFF disconnect (see FPOM 17 LWG 018 MOC).

**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 13.75 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 August 1-3 as part of early dewatering for Phase 1a. The mechanical crew were unable to pull the ESBS in gatewell slot 3A forcing unit 3 out of service August 3. After ROV inspections were unsuccessful in determining the problem the ESBS camera was used and identified a flared section in the ESBS guide. A 1.5 inch camera was then used at that location. During the next attempt to pull the screen the camera revealed a lock pin preventing the screen from being lifted. Releasing tension on the cable moved the lock pin enabling the screen to come out of the slot on August 9. Screens were inspected for fish following removal. No fish were observed.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes No Item

- Orifices operating satisfactory? The orifices are closed because the collection channel is dewatered.
- Dewaterer and cleaning systems operating satisfactory? System is dewatered.

Comments: Dewatered.

Collection Facility: Dewatered.

Transport Summary: Barge transport from Little Goose and Lower Monumental on even number days will continue through August 14. Transport from Lower Granite ended August 2 in conjunction with the extended outage for bypass upgrades.

## 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
36.9	30.4	18.3	17.03	70.0	67.5	5.0	4.4

\*Cooling water intake temperature.

## Other

Adult Fish Trap Operations: The adult trap operated Monday through Friday at a 27% sample rate.

Inline Cooling Water Strainers: N/A.

Invasive Species: The Zebra mussel trap was inspected August 6, 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
August 4	13:45	1	19	1	0
August 5	08:35	8	15	0	0
August 6	08:30	7	14	0	0
August 7	16:05	5	15	0	0
August 8	15:08	2	12	0	1
August 9	15:32	8	26	0	0
August 10	12:46	1	19	0	0

Spill: The RSW remains closed due to forebay surface water temperature. Lower Granite is operating according to Fish Passage Plan Table LWG-9.

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

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