

**U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#01-2017**

Project: McNary

Biologists: Bobby Johnson and Denise Griffith

Dates: March 1 - 2, 2017

Turbine Operation

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
13	Oct 3 to Mar 30	6 month	Thrust bearing issue.

Comments: None.

Adult Fish Passage Facilities

General Comments: Washington ladder winter maintenance concluded on January 27. Drive systems for six of the seven tilting weirs and the regulating weir were rehabilitated. A contractor installed lamprey passage structures at the exit. Oregon ladder winter maintenance occurred from January 29 to February 27. Drive systems for four of the seven tilting weirs were rehabilitated. A dive inspection of the diffuser grating revealed no problems. The Oregon exit travelling screens returned to service with the ladder.

The picketed leads in both ladders were lowered on February 28. McNary fisheries biologists performed measured inspections of the adult fishways on March 1 and 2. Video review fish counts began March 1. Issues with the Washington count station video recorder were resolved on March 2.

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’): 1.4’ on March 1.
 Washington Count Station Differential (Criteria – Differential 0.0’ to 0.5’)

Comments: Debris loads were minimal at both exits. At the Oregon exit, the regulating weir tripped an alarm, then tripped the same alarm following limit switch replacement. Normal operation resumed after the limit switch was reset on March 2. The regulating weir was placed in manual mode when the limit switch replacement took place.

At the Washington exit, the picketed leads were cleaned along with the exit weirs and regulating weir set points being adjusted on March 1, which resolved the out of criteria issue. Also, scheduled maintenance was performed on the picketed lead hoist. The lower limit switch on exit weir 338 was adjusted on March 2. Manual regulating weir operation was necessary when the limit switch was adjusted.

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 March 2.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NFEW3 Weir Depth (Criteria – $\geq 8.0'$)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	South Oregon Entrance Head Differential (Criteria – 1.0' to 2.0')
<input type="checkbox"/>	<input checked="" type="checkbox"/>	SFEW1 Weir Depth (Criteria – $\geq 8.0'$): 7.8' on March 1.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	SFEW2 Weir Depth (Criteria – $\geq 8.0'$): 7.7' on March 1.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Collection Channel Velocities (Criteria –1.5 to 4.0 fps): Averaged 1.5 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: Oregon ladder out of criteria points could possibly be explained by system adjustments. Also, the juvenile bypass system is not yet supplying additional water to the north powerhouse entrance. Floating orifice gates 21, 26 and 41 were found low in the water on March 2. The general maintenance staff will adjust the gates on March 3.

Auxiliary Water Supply System:

<u>Yes</u>	<u>No</u>	<u>In Service?</u>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Washington shore Wasco County PUD Turbine Unit: Return to service date is March 10.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Washington shore Wasco PUD Bypass: Operated satisfactorily.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Ladder Fish Pump 1: Blade angle ranged from 22 to 25 degrees.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Oregon Ladder Fish Pump 2: The return to service date is June 15.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Oregon Ladder Fish Pump 3: Blade angles ranged from 24 to 25 degrees.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Oregon North Powerhouse Pool supply from juvenile fishway: The return to service date is March 28.

Comments: Final repairs after commissioning tests are being completed on the Wasco PUD turbine unit this week. The Oregon ladder fish pumps had no interruptions in service. The fish pump 2 contractor is scheduled to complete nose cone repairs by June 15. The juvenile system is out of service for maintenance.

Juvenile Fish Passage Facility

General Comments:

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? Debris removal is needed.
<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Any oil seen in gatewells?

Comments: The winter maintenance season continues. At the start of the winter maintenance season, the initial forebay debris load was minimal. As the season progressed, heavy debris loads became evident. The forebay debris will be removed later this month concurrently with trash racks cleaning operations. Five slots were cleaned on January 17 with approximately 7.5 cubic yards of debris being removed. Trash rack differentials were acceptable all winter. The gatewell slots remained free of debris and oil all winter.

Extended-length submersible bar screen (ESBSs)/Vertical barrier screen (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 maintenance continues. ESBS deployments are scheduled to begin April 5. VBS differential monitoring will begin at that time.

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

Yes No Item

- Orifices operating satisfactory? How many are in service? All are closed for maintenance.
 Dewaterer and cleaning systems operating satisfactory? Out of service for maintenance.

Comments: The collection channel remains out of service for winter maintenance. The north side dewatering valve and the side screen cleaning brush were successfully rehabilitated despite adverse winter conditions.

Bypass Facility: The facility remains out of service for winter maintenance. Major accomplishments to date include the rehabilitation of the passive integrated transponder (PIT) and sample system gates were rehabilitated. The “weye” at the junction of the secondary bypass and return-to-river lines was refinished, which should reduce the number of debris blockages. The separator walls were repainted. Currently, lighting is being added to areas where flume over flows could occur. The section of the B side secondary bypass line, which had blockage issues last year, is being replaced. Areas of the facility are being repainted.

River Conditions

General Comments: River conditions were provided by the McNary control room and are outlined in Table 2 below. The data period runs from 0000 to 2400 hours each day. Flows and spill are recorded in one-thousand cubic feet per second. Temperatures are recorded in degrees Fahrenheit.

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
215.8	214.3	10.3	6.3	38.0	38.0	2.6	2.5

Comments: Spill in excess of powerhouse capacity occurred both days during this report period.

Other

Inline Cooling Water Strainers: Two inspections took place this winter. Recoveries included 23 juvenile lamprey mortalities and no smolts were observed. The next inspection is scheduled for March 7.

Invasive Species: No invasive species were observed during winter maintenance. The mussel stations will be examined in late March.

Avian Activity: Small numbers of gulls, grebes, cormorants, pelicans, mergansers, bald eagles and blue herons were observed during the winter. Currently, we are noting blue herons, gulls and cormorants. Avian counts will resume in early April.

Fish Salvage/Rescue: None occurred.

Research

Item: No on site research is occurring at this time.

Project: Ice Harbor
Biologists: Ken Fone
Dates: March 1 - 2, 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 5 was taken out of service on March 14, 2016, at 1117 hours, due to an oil leak from the blade packing. The packing was replaced and the blades were welded in place to fix the leak. The unit was returned to service at 1711 hours on March 2, 2017. Unit 2 was taken out of service on April 25, 2016, at 0606 hours for runner replacement. Unit 3 was routinely operated slightly below the 1% peak operating efficiency range during the reporting period, 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

General comments: Fish facility personnel inspected the adult fishways on March 2.

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: The water surface above the fish ladder exits were clear of debris and the bubblers were operating satisfactorily. The picketed leads remain raised out of the water until the start of fish counting.

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 Entrance 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: The south shore entrance weir depth was out of criteria with a reading of 6.8', due to the weir being in manual control mode. The weir was switched to automatic control to fix the problem.

Auxiliary Water Supply (AWS) System:

Yes No In Service and Operating Satisfactory?

- South Shore AWS Pumps. Six of the eight south shore AWS pumps are in service.
 North Shore AWS Pumps. Two of the three north shore AWS pumps are in service.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes No Item

- Forebay debris load acceptable? Approximately 100 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)?
 Any oil seen in gatewells?

Comments: The STSs stored in the gatewell slots obscure the view and prevent estimations of gatewell debris coverage.

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)? N/A
 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: The STSs are raised out of the water and stored in their gatewell slots for annual maintenance.

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

Yes No Item

- Orifices operating satisfactory? How many are open and in service? 0.
 Dewaterer and cleaning systems operating satisfactory? N/A

Comments: The juvenile fish bypass is unwatered for annual maintenance.

Juvenile Fish Facility: The fish facility is unwatered for annual maintenance.

Fish Sampling: Sampling operations are scheduled to begin the week of April 2.

Removable Spillway Weir (RSW): Spill for fish passage is scheduled to begin on April 3.

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
75.7	72.1	16.6	8.6	39.0	39.0	1.7	1.7

*Unit 1 scroll case temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections will take place later in March.

Invasive Species: No new exotic species have been found.

Avian Activity: There were very few piscivorous birds seen around the project.

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

Project: Lower Monumental

Biologists: Chuck Barnes and Raymond Addis

Dates: March 1 - 2, 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 was removed from service on December 10, 2014 for Unit Rehabilitation with an estimated return to service date of September 1, 2017. Unit 5 was removed from service on January 17, 2017 due to a turbine oil leak with an estimated return to service of July 30, 2017.

Adult Fish Passage Facility

General comments: The adult fishway was inspected by Corps biologists on March 01 and 02.

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')
 Collection Channel Velocities (Criteria: 1.4 fps – 4.0 fps)

Comments: NSE2 had a reading of 6.2 feet on March 1. This was caused by an automation error and this error was fixed the same day. SSE2 had readings of 3.8 and 1.0 feet on March 1 and 2 respectively. SSE2 had been rebuilt over the winter and a mistaken set point had been used when connecting it into the automation system.

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 remain 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? No debris 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)?
- Any oil seen in gatewells?

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)? See comments below.
- 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: STSs are still in their raised storage positions in the gatewells during this report period. They are scheduled to be inspected on the deck during the week of March 13 and deployed during the week of March 20.

Orifices, Collection Channel, Dewatering Structure, and Flume:

Yes No Item

- Orifices operating satisfactory? How many are open and in service? 0 (Channel is dewatered).
- Dewaterer and cleaning systems operating satisfactory? N/A. See comments below.

Comments: The collection channel is scheduled to be “watered up” the week of March 27.

Collection Facility: The facility is in winter maintenance mode.

Transport Summary: Fish transport is not occurring at this time.

River Conditions

General comments: None.

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
94.6	70.2	12.9	0.0	39.0	39.0	2.6	2.4

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: The cooling water strainers were last inspected on February 6. No live fish were recovered. Mortalities included approximately 9 juvenile lamprey.

Invasive Species: No zebra or quagga mussels were observed during monitoring station inspections on March 1.

Avian Activity: No piscivorous bird species were 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

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

Project: Little Goose

Biologists: Scott St. John and Richard Weis

Dates: March 1 - 2, 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: All turbine units were available for service throughout this report period. Soft 1% peak efficiency constraint criteria are in effect.

Adult Fish Passage Facility

General comments: The adult fishway was inspected by Corps biologists on March 01 and 02.

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: Differential readings were affected by the improper placement of the fish ladder exit trashrack in the exit bulkhead slots by the maintenance crew on February 21. The issue was discovered during the fishway inspection on March 1, and resolved. Ladder exit head criteria was met during the March 2 inspection.

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: None.

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: No comments.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

- | <u>Yes</u> | <u>No</u> | <u>Item</u> |
|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Forebay debris load acceptable? No debris observed. |
| <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: None.

Spillway Weir: N/A. The weir is not in service at this time.

ESBS/VBS:

- | <u>Yes</u> | <u>No</u> | <u>Item</u> |
|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input checked="" 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 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: No comments.

Orifices, Collection Channel, Dewatering Structure, and Flume:

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

Comment: The collection channel and associated equipment are currently dewatered for winter maintenance.

Collection Facility: Dewatered for winter maintenance.

Transport Summary: The facility is dewatered and no fish collection is currently taking place.

River Conditions

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

Table 1. 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
71.1	66.5	0.0	0.0	39.3	39.1	3.1	2.4

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on January 4, February 7 and March 3. Total strainer mortality include 14 juvenile lamprey, no smolts were seen.

Invasive Species: No invasive species have been observed on the mussel station or during winter maintenance.

Avian Activity: N/A.

Gas Bubble Trauma: N/A.

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

Project: Lower Granite

Biologist: Elizabeth Holdren

Dates: March 1 - 2, 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 with an expected return to service date of May 5.
Unit 2 of service for blade seal repair with an expected return to service date of April 7.

Adult Fish Passage Facility

General comments: None.

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: None.

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: NSE 1 was out of criteria with readings of 6.9 and 6.4 feet. NSE 2 was out of criteria with readings of 7.5 and 7.0 feet. The cause of out of criteria readings are being investigated and likely due to issues with the new control system adjusting to actual readings.

Collection Channel Velocity: No comments.

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).

Fish Ladder Temperature Control System: The ladder cooling pumps are not in service at this time.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil:

Yes No Item

- Forebay debris load acceptable? No debris was observed in the forebay this week.
- 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?

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: N/A.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe:

Yes No Item

- Orifices operating satisfactory? How many are open and in service? XX - XX. N/A.
- Dewaterer and cleaning systems operating satisfactory? N/A.

Comments: Dewatered.

Collection Facility: Dewatered.

Transport Summary: The facility is dewatered and no fish transport is taking place at this time.

River Conditions

General Comments: None.

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
69.3	67.0	1.8	0.0	42.0	38.0	2.6	2.5

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Comments. N/A,

Invasive Species: N/A.

Avian Activity: N/A.

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

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
Month XX					
Month XX					
Month XX					
Month XX					
Month XX					
Month XX					
Month XX					

GBT: N/A.

Adult Fish Trap Operations: Dewatered.

Fish Rescue Operation: No fish rescues took place during this report period

Research

General Comment: No fish onsite fish research is taking place at this time.