

**U.S. ARMY CORPS OF ENGINEERS  
WALLA WALLA DISTRICT  
FISH FACILITIES WEEKLY REPORT  
#03-2013**

**Project: McNary**

Biologists: Carl Dugger and Bobby Johnson

Dates: March 15 - 21, 2013

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**Turbine Operation**

McNary had 12 units available for power generation this week. On April 1, the hard constraint one percent operational criteria will begin. Current turbine unit outages are recorded in Table 1.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Reason
3	Jun 4 – May 31	One year.	After rewind, thrust bearing.
14	Sep 18 – May 2	Seven months.	Turbine bearing issues continue.
7 to 13	Mar 18	6.5 hours total.	Trash rack cleaning.
1, 2 & 4 to 7	Mar 19	9.25 hours total.	Trash rack cleaning.

**Adult Fish Passage Facilities**

On March 15, 17 and 21, the McNary fisheries biologist performed measured inspections of the adult fishways.

Fish Ladder Exits: Both Washington and Oregon ladder exits met all Fish Passage Plan criteria during inspections. The Oregon traveling screen differentials continued to be satisfactory.

Fishway Entrances and Collection Channel: All Washington and Oregon ladder entrance inspection points met criteria this week. Oregon collection channel velocities averaged 2.4 feet per second. The velocity meter is functioning well.

Auxiliary Water Supply System: Except for 2 interruptions in service, fish pumps 1 and 3 operated satisfactory this week with blade angles of 30 degrees. Both pumps were intentionally taken out of service respectively for 10 and 8 minutes on March 18 and 19. These outages allowed tracing and resolution of electrical grounding issues. Pump 2 remains out of service for major overhaul which will require a contract. The juvenile fish facility remains out of service for winter maintenance and is not providing the usual 450 cfs to the north powerhouse pool. Project personnel expect to rewater the juvenile collection channel on March 26. The Wasco County PUD turbine unit had no interruptions in service this week.

## Juvenile Fish Passage Facility

The facility remains shut down for winter maintenance, which is nearing completion. The installation of 3 concrete bulkheads at the south end of the juvenile collection was completed on March 18. These bulkheads replace the steel bulkheads which faced the forebay side of the collection channel. The expected collection channel “water-up” date is March 26.

Forebay Debris/Gatewell Debris/Oil: Forebay debris accumulations were light as trash rack raking removed some of the material reported last week. The fisheries staff continued to monitor trash rack differentials and no problems were seen. Project personnel raked trash racks on March 18 and 19, removing approximately 225 cubic yards of debris (22.5 dump truck loads). All racks were raked except for those associated with turbine units 3 and 14 (which have been out of service). Most of the debris consisting of tumbleweeds and small woody material was removed from turbine units 1 through 7. No lamprey or smolts were found. No problems were observed in the gatewell slots.

ESBSs/VBSs: All ESBSs remain in their raised positions. Winter screen maintenance is nearly concluded. Screen rehabilitation is continuing with the installation of new motors, chains and brushes. Screen deployments are expected to take place from April 5 to 15, similar to the installation dates over last four seasons in support of juvenile lamprey passage. VBS rehabilitation also continued. VBS differential monitoring will resume when ESBS installations begin.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices remain closed for winter maintenance which is nearing completion. Collection channel re-watering and the start of bypass operations are slated to begin in late March. This week, the mechanics lubricated the rectangular screen cleaning device and the fisheries staff trimmed the cleaning brush so it would not rub the walls.

Transportation Facility: The facility remains unwatered for winter maintenance which is nearing completion. The newly rebuilt porosity control unit perforated plate was installed this week. The bird cannon water supply line is now securely fastened and reconnected. The bird cannon was tested and found functional.

Transport Summary: No transport operations are scheduled at the present time.

## River Conditions

River conditions during this report period are outlined in Table 2. Reported data was provided by the control room. The data day is from 0000 to 2400 hours. Water temperature data continues to be taken from the turbine unit 1 scroll case.

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
158.8	125.8	0.0	0.0	43	42	6.0	6.0

## **Other**

Inline Cooling Water Strainers: The next main unit cooling water strainer examinations are scheduled for early April.

Invasive Species: A zebra mussel trap examination is planned later this month.

Avian Activity: Bird counts will resume later in the month when technicians are on shifts. This week, we observed an occasional gull, grebe or cormorant near the project. The bypass system is not in operation so there are no birds to observe near the outfall.

Research: In early April, divers will be installing equipment in support of the FGE (Fish Guidance Efficiency) study.

TSW: Top Spillway Weir installations are expected in spill bays 19 and 20 sometime next week.

Fish Salvage: On March 15, a fish salvage operation took place in the turbine unit 3 scroll case. No fish were found. A salvage operation took place in the associated draft tube the following day. One catfish and one sucker were removed.

**Project: Ice Harbor**

Biologist: Mark Plummer

Dates: March 15 – 21, 2013

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**Turbine Operation**

Turbine units 2, 3, and 5 remained out of service this reporting period. Turbine units 2 and 3 are out of service due to exciter problems and unit 5 is out of service due to blade cracking. Turbine units 1, 4 and 6 were of service for short periods this period in support of trash rack raking efforts. A total of 19 cubic yards of assorted debris was removed from the trash racks.

**Adult Fish Passage Facilities**

Fish facility personnel inspected the adult fishways March 18, 19, 20, and 21.

Fish Ladders: The north and south shore adult fish ladder inspection areas (picketed leads, head differentials, fishway exits, and depth over weirs) were within criteria.

Fishway Entrances and Collection Channel (inspection date order): The south shore entrance (SFE) was off sill with a depth of 8.5 feet, on sill with a depth of 8.1 feet, off sill with a depth of 8.4 feet, and on sill with a depth of 8.3 feet. The north powerhouse entrance (NFE) was off sill with a depth of 8.6 feet, on sill with a depth of 8.0 feet, off sill with a depth of 8.5 feet, and on sill with a depth of 8.2 feet. The north shore entrance (NSE) was off sill with a depth of 9.0 feet, on sill with a depth of 8.4 feet, off sill with a depth of 8.9 feet, and on sill with a depth of 8.2 feet. Fishway entrance criterion is 8 feet depth, greater than 8 feet depth, or on sill. All channel/tailwater differentials were in criteria. Channel/tailwater differential criteria are 1 – 2 feet.

Auxiliary Water Supply System: Two of the 3 north shore fish pumps were operated without problems. Six of 8 south fish pumps are in service. All south fish pumps are available for operation.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil: No problems to report. Debris is accumulating in the forebay in front of the powerhouse. Fish ladder exits are clear of debris and the bubblers are operating satisfactorily. Turbine unit gate well cleaning and trash rack raking was completed this reporting period.

STs/VBSs: STs are raised for annual maintenance. STs are tentatively scheduled to be lowered into operating position the week of March 25.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The juvenile bypass is watered up with 20 open orifices.

Juvenile Bypass Facility: The bypass is watered up.

Fish Sampling: The first sample is scheduled for April 8. Sampling days will alternate from Monday and Wednesday to Tuesday and Thursday each week.

Removable Spillway Weir: The RSW is currently not in operation. Spill for fish is expected to begin April 3, 2013.

### **River Conditions**

River conditions during the week are outlined in Table 1.

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
33.9	22.0	0.0	0.0	43	41	6.7	6.5

\*Unit 1 scrollcase temperature.

### **Other**

Inline Cooling Water Strainers: Cooling water inspections are scheduled for March 26.

Invasive Species: No invasive species were detected this week.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Research: There is no research in progress at this time.

**Project: Lower Monumental**

Biologists: Bill Spurgeon and Elizabeth Lindsey

Dates: March 15 - 21, 2013

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**Turbine Operation**

The units are being operated in soft constraint of the 1% operation criteria. Units were rotated out of service for trash rack raking from March 18 through 20. Units were also rotated out of service for STS installation from March 19 through 21. Unit 6 was out of service from 1655 hours on March 19 through 2015 hours on March 20 and Unit 2 was out of service from 2003 hours on March 20 to 0713 hours on March 21 due to insufficient orifice availability to fill juvenile channel prior to water up of the bypass. The channel is filled with water from orifices of unit one or two (widest and deepest portion of the channel) prior to opening orifices at unit 6 to prevent orifice flow from impacting the channel wall and potentially injuring fish.

**Adult Fish Passage Facility**

The adult fishway was inspected by Corps biologists on March 18, 19, and 20.

Fish Ladders: Fishway exit head differentials and depths over the weirs were within criteria ( $\leq 0.5'$  and  $1.0'-1.3'$ , respectively) on all inspections. Picketed lead head differentials were in criteria ( $\leq 0.4'$  and  $\leq 0.3'$  for north and south shore fishways, respectively) on all inspections.

Fishway Entrances and Collection Channel: NSE1 and NSE 2 weir gates were in depth criteria (criteria:  $> 8'$  or on sill) on all inspections. North shore channel/tailwater head was in criteria ( $1'-2'$ ) on all inspections.

SPE 1 and SPE 2 weir gates were in sill criteria (criteria:  $\geq 8'$  or on sill) on all inspections. While on sill, the gate depth readings were 7.2', 7.0', and 6.5. South powerhouse channel/tailwater head was in criteria ( $1'-2'$ ) on all inspections.

SSE1 weir gate was in depth or sill criteria (criteria:  $\geq 8'$  or on sill) on all inspections. SSE 2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria ( $1'-2'$ ) this week.

Auxiliary Water Supply System: AWS pumps 1 and 3 were operated throughout this period. Two pump operation will continue until bearing repair and shaft alignment work is completed on pump 2, approximately July 15.

**Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil: There was an average of 483.3 square yards of forebay debris observed during this period. Debris was removed from the gatewells and trash racks March 18 through March 21.

STSS/VBSs: STSSs were installed March 19 through 21 and are being operating in cycle mode.

Orifices, Collection Channel, Dewatering Structure, Flume: The bypass was watered on March 21.

Collection Facility: The collection facility was watered up for testing on March 21.

Transport Summary: Transport operations are expected to begin in late April or early May.

### **River Conditions**

River conditions during the week are outlined in Table 1.

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
44.9	32.7	0	0	43.0	42.5	3.7	3.6

\*Scrollcase temperatures.

### **Other**

The RSW is ready for year 2013 spill operations.

Inline Cooling Water Strainers: Cooling water strainers were inspected on March 11. Two live lampreys were recovered. Mortalities included 5 juvenile lampreys.

Invasive Species: There were no zebra mussels observed at the monitoring stations on March 4.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Research: There is no research in progress at this time.

**Project: Little Goose**  
Biologist: George Melanson  
Dates: March 15 - 21, 2013

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### **Turbine Operation**

Turbine units 1, 2, 4 and 6 were available for service throughout most of this report period. Turbine units 1 and 2 were removed from service during the day shift on March 19 and 20 for ESBS installation. Turbine unit 3 was returned to service on March 21 at 1618 hours following installation of new exciters. Turbine unit 5 is forced out of service due to governor problems. Turbine unit 6 was forced out of service on March 16 at 1430 hour to March 18 at 0739 due to governor errors. All available turbine units were operated in soft constraint of the 1% efficiency criteria.

### **Adult Fish Passage Facility**

USACE fisheries biologists performed measured inspections of the adult fishway March 18, 19 and 21.

Fish Ladder: The ladder exit head differentials held steady at 0.1 feet (criteria  $\leq 0.5$  ft.). Water depths over the weirs ranged between 1.1 and 1.2 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials was 0.0 (criteria  $\leq 0.3$  ft.). No debris was observed at the picketed leads or the ladder exit. The air bubbler used to prevent debris from collecting near the ladder exit operated satisfactorily.

Fishway Entrances and Collection Channel: Channel to tailwater head differentials ranged between 1.2 and 2.0 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.3 and 8.5 feet (criteria  $\geq 8.0$  ft). As a result of two pump operations and decreased channel to head differentials, NPE2 remained closed. NPE1 weir rested on sill and depths ranged 6.4 and 6.9 feet (criteria  $\geq 7.0$  ft or on sill). NSE weirs are at fixed elevations of 532.0 feet and depths ranged between 6.3 and 6.7 feet (criteria  $\geq 6.0$  ft.). Collection channel surface water velocities (criteria 1.5 fps) ranged from 1.3 to 1.6 fps near the SSE and 2.3 to 2.7 fps near the NSE.

Auxiliary Water Supply System: For the most part, fish pumps 1 and 2 operated within criteria ranging between 78 and 82 rpm. Fish pumps 1 and 2 were removed from service on March 21 from 1529 to 1655 hours to perform fishway entrance maintenance inspections. Fish pump 3 remains out of service and is undergoing repairs.

### **Juvenile Fish Passage Facility**

Forebay Debris/Gatewell Debris/Oil: Woody debris observed this week ranged from 5,000 to 10,000 square feet inside the trash shear boom. Scattered woody debris was observed outside the trash shear boom.



Spillway Weir: The spillway weir was not in service during this report period.

ESBS/VBS: ESBSs 1A through 3C were lowered into operating position this week. ESBS 1A – 3C brush motors were manually operated for test inspection. All 9 brushes met operational criteria.

Orifices, Collection Channel, Dewatering Structure, Flume: The juvenile collection system was watered-up and placed into service on March 19. The system is operating with 18 open orifices in primary bypass.

Transportation Facility: The facility is scheduled for water-up on March 27.

Transport Summary: Transport operations are expected to begin in late April or early May.

### **River Conditions**

River conditions during the week are outlined in Table 1.

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
40.2	30.4	0	0	42.7	42.4	4.6	4.0

\*Ladder temperature.

### **Other**

Invasive Species: The zebra mussel substrate monitor is scheduled for inspection on April 1.

Cooling Water Strainers: On March 20 cooling water strainers were inspected. Eleven juvenile lamprey mortalities were removed. The next inspection is scheduled for March 28.

Avian Activity: Thirteen cormorants and several gulls were observed this week.

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

**Project: Lower Granite**

Biologist(s): Mike Halter and Ches Brooks

Dates: March 15 - 21, 2013

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**Turbine Operation**

Lower Granite had all turbine units except for unit 5 available for power generation during the report period. Turbine unit 5 is out of service for cavitation repair. The tentative return to service date for this unit is April 12. Turbine unit 6 was taken out of service on March 21 at 0945 hours in order to pull and check the ESBS in slot 2C, no problems were found and the unit was returned to service at 1445 hours the same day. Fish screen installation work took place during the week. The following unit outages took place: turbine unit 1 (March 18, 0625 – 1229 hours), turbine unit 2 (March 18, 1230 – 1630 hours), turbine unit 3 (March 19,

**Adult Fish Passage Facility**

On March 18, 19 and 21 the Lower Granite fisheries biologists performed measured inspections of the adult fishway system.

Fish Ladder: All criteria were met.

Fishway Entrances and Collection Channel: Head differential readings remained within criteria at the south shore and north powerhouse fishway entrances during the weekly inspections. The head differential readings at the north shore fishway entrances were out of criteria on the March 18 inspection with a reading of 0.8 feet (criterion 1.0' – 2.0').

Weir depths at the south shore fishway entrances and north powerhouse entrances met criteria during the period inspections. Weir depths at the north shore entrances ranged from 3.8 to 6.6 feet (criterion  $\geq 7.0$  feet). Only north shore entrance 1 can adjust its depth relative to the tailwater elevation. North shore entrance 2 is manually dogged off at a compromise depth of 630.0 feet. Normally weir depth readings at the north shore entrances are sacrificed in order to maintain the requisite 1.0 foot of head differential.

Velocity readings in the adult fishway collection channel transition pool area ranged from 0.94 to 1.19 feet per second and averaged 1.04 feet per second.

Auxiliary Water Supply System: Fish pumps 2 and 3 were operated during the week. Fish pump 1 is out of service in order to perform a motor re-wedge. The tentative return to service date for this pump is March 22.

**Juvenile Fish Passage Facility**

Due to the installation of fish screens, the juvenile collection gallery was watered up starting at 0800 hours on March 18. The separator was also watered up and fish are being diverted back to

the river through the long bypass pipe (secondary bypass). Formal fish sampling activities are scheduled to begin on March 25.

Forebay Debris/Gatewell Debris/Oil: A debris spill was authorized and conducted on March 12. Forebay debris removal and trash rack raking was completed by February 28.

ESBSs/VBSs: ESBS deployment took place during the week. The powerhouse mechanical crew started with unit 1 and worked north through the rest of the units.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are being backflushed every three hours around the clock in an attempt to keep them free of materials that might impact fish passage.

Work to install a prototype overflow weir and a 14” orifice was completed and a ‘wet’ test of these systems was conducted on March 11. Methods of biological evaluation to test these systems are in the final stages of refinement.

Transportation Facility: General barge transport operations are uncertain at this time but will probably begin in late April or early May. Research barging operations are tentatively scheduled to begin on April 18. Juvenile fish sampling (only) activities are scheduled to begin on March 25.

Transport Summary: Nothing to report.

Removable Spillway Weir: Nothing to report on the RSW.

### River Conditions

River conditions during the week are outlined in Table 1.

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
40.1	32.5	0.0	0.0	46.7	46.0	4.1	3.2

\*Scrollcase temperature.

### Other

Video counts in the adult fish ladder counting room began on March 1. The recording hours are from 0600 to 1600 hours.

Inline Cooling Water Strainers: Cooling water strainers were last inspected for lamprey entrainment on February 26. A total of 29 lamprey were found in the strainers over a combined

run time of 1,293.6 unit hours. The next cooling water strainer inspections are scheduled for late April.

Invasive Species: The zebra mussel trap near the adult fishway exit was last examined for zebra mussels on March 4. No evidence of zebra mussels was found. The next inspection is scheduled for early April.

Avian Activity: Formal bird counts and hazing are not occurring at this time.

Research: The adult fish trap was watered up and sampling began on March 4. The initial sample rate is 21%. Since adult trapping is being conducted only from Monday thru Friday, the 21% sample rate represents an overall weekly sample rate of 15%. Genetic samples are being taken from 1 out of every 10 hatchery steelhead. All captured wild steelhead are being PIT-tagged and are having scale and genetic samples taken. Any previously PIT-tagged steelhead (either hatchery or wild) will have both scale and genetic samples taken for verification purposes.

Fish Salvage Operation: The fish facility staff assisted the powerhouse mechanical crew in conducting a small fish salvage operation in the draft tube of turbine unit #5 on the morning of March 18. A total of 11 channel catfish and 7 juvenile white sturgeon were netted, transported in large baskets, and released alive into the Lower Granite tailrace.