U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#24-2015

Project: McNary
Biologist: Bobby Johnson
Dates: August 7 – 13, 2015

Turbine Operation

Turbine unit outages are recorded in Table 1 below. McNary had 10 to 12 of 14 units available for power generation. The hard 1 percent constraint and the saw tooth unit priority continued. No turbine units ran outside the constraint. The 72 hour operational test of unit 12 took place from August 7 to 11.

Table 1. Unit Outages at McNary Project.

Units	Outage Dates	Outage Length	Reason
12	Feb 8–Aug 13	About 6 mo.	Rewind contract completed.
9	Aug 3–7	About 5 days.	Annual maintenance.
7	Aug 6– 7	About 12 days.	High pressure lift pump system replaced.
6	Aug 10–13	About 4 days.	Annual maintenance.
5	Aug 10–15	About 6 days.	Asbestos abatement.
1, 2 & 4	Aug 11	61 minutes.	Extended-length submersible bar screen (ESBS) camera inspections.
2	Aug 12	About 4 hours.	Exciter repair.

Adult Fish Passage Facilities

The McNary fisheries biologist performed measured inspections of the adult fishways on August 8, 10 and 12. Visual adult fish counts, review of video tape for adult lamprey counts and exit temperature monitoring continued.

All systems continued to be monitored diligently as warm water conditions prevailed.

The Oregon ladder fish pumps and the Wasco County Public Utility District (PUD) turbine unit in Washington ladder remained on raw river water for cooling. From August 7, at 0850 hours to August 10, at 1237 hours, the PUD unit was operated with potable cooling water. This reduced personnel call outs to clean raw water strainers.

The potable water reservoir continued to be filled by a City of Umatilla fire hydrant as needed. Operators monitored the reservoir level repeatedly. The reservoir supplies only basic water needs. A contractor worked on well pump 2 this week.

Operation of both fish pumps on raw water for cooling will continue until well pump 2 returns to service. Potable water was used for cooling during raw water strainer cleaning only. The fish pump raw water strainer was cleaned one to five times per day.

Fish Ladder Exits: Both ladder exits met all criteria except as described below. Picketed leads were cleaned at both exits as required, including weekends and at night.

At the Washington ladder exit, the count station differential measured 0.6 feet on August 12. The general maintenance staff immediately cleaned the trash rack and picketed leads, which resolved the problem. The operators adjusted the regulating set point on August 8. They reset one regulating weir alarm on August 10. An electrical issue with the picketed lead hoist was repaired on August 12. Aquatic vegetation quantities were minimal to light in the exit area.

At the Oregon ladder exit, the operators adjusted the regulating weir set point on August 8. The operators and fisheries staff noted that the count station differential was out of criteria (too high) on August 9. They cleaned the upper edge of the picketed leads and adjusted the regulating weir set point. Three high differential alarms occurred over night. On August 10, after the general maintenance staff cleaned the leads, the head over weir measured 0.9 feet. The biologist asked for a regulating weir set point adjustment, which the operators did.

The general maintenance staff found all the tilting weirs except weir 334 lying down on August 11 at about 0700 hours. The operators switched the exit to manual mode, adjusted the weirs to normal configuration, reset the set points and returned the ladder to automatic operation. The flat tilting weir configurations resulted from the tilting weir not being returned to “active” mode after a previous set point adjustment.

Another high differential alarm came in on August 11 at 2130 hours. The general maintenance staff was called in and they cleaned the picketed leads by 2300 hours. The operators adjusted the regulating and tilting weir set points on August 12. A fisheries technician noted one tilting weir out of sequence on August 13 at about 2000 hours. The operators immediately made appropriate adjustments to resolve the issue.

Weir 340 remained in bypass mode due to a failed encoder. Ladder operation was not adversely affected. The mechanics worked on weir 337 as part of the oil accountability program on August 10. Pacific State Marine Fish Commission (PSMFC) personnel found the count station window brush (which runs four times a day), was the cause of previously undetermined interference of the count station passive integrated transponder (PIT) tag detection system on August 11. The mechanics performed scheduled maintenance on the exit traveling screens on August 12. Debris loads varied between light to moderate as winds moved aquatic vegetation along the Oregon shore.

Fishway Entrances and Collection Channel: At the Washington entrance, all entrance inspection points met criteria.

At the Oregon ladder, the north powerhouse entrance weir, NFEW3 measured 7.9 feet depth on August 12. All other inspection points were in criteria.

Collection channel surface velocities averaged 1.6 feet per second.

Auxiliary Water Supply System: The PUD turbine unit in the Washington ladder had no interruptions in service this week.

Two of the three Oregon ladder fish pumps operated satisfactorily with blade angles of 30 degrees with one interruption in service. Fish pump 3 tripped off line from 0735 to 0742 hours on August 10 when the high water float was inadvertently tripped.

Fish pump 2 is currently under contract for major overhaul. If pump shaft replacement is required, the fish pump overhaul completion might be delayed to April, 2016. Completion was previously scheduled for September, 2015.

The juvenile facility continued to supply 450 cubic feet per second to the north powerhouse pool.

Juvenile Fish Passage Facility

The fish passage season consists of alternating days of primary and secondary bypass modes. The switch occurs every morning at 0700 hours. There were no deviations in the schedule. Secondary bypass occurred on August 8, 10, and 12. This week, 95 juvenile lamprey and 460 smolts were bypassed. Juvenile shad were the predominate species sampled.

The B side sample tank water temperature and fish in all areas continued to be monitored. Warm water temperatures continued to be a grave concern.

The juvenile facility continued to have a limited potable water supply.

Forebay Debris/Gatewell Debris/Oil: The forebay debris load was minimal and scattered across the powerhouse face. New incoming debris was minimal and consisted of aquatic vegetation.

No high trash rack differentials were recorded and no racks were cleaned. The general maintenance staff will clean trash racks next week.

No problems were observed in the gatewell slots.

ESBSs/VBSs: All turbine units have ESBSs installed. The screens in slots 1A, 3B and 11C remained in timer mode. During the 72 hour operational unit testing mentioned above, the screen brush in slot 12C repeatedly did not complete a full cycle. The operator recalibrated the brush mechanism on three occasions. On August 13, the operators switched the screen brush to timer mode.

On August 12, the ESBS brushes in unit 9 were found not to be cycling. The electrical staff found control system switches had failed. The electrician bypassed the switches allowing the brushes to cycle. The next day, the electrician replaced the control switches.

ESBS camera inspections at units 1, 2 and 4 revealed no problems.

No high VBS (vertical barrier screen) differentials were recorded. On August 10, the screens in slots 1A, 1B, 1C and 8B were cleaned. The general maintenance staff continued to clean sponge off the screens downstream side. VBS rehabilitations continued.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: Forty two orifices were in use. During VBS cleaning, orifices in the affected slots were closed, with makeup water coming from orifices in adjacent slots. Water was noted in the orifice air supply line once.

All systems functioned satisfactorily in automatic mode. The rectangular screen cleaning brushes were lubricated.

Bypass Facility: 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 sample gates are turned on and off every other day so that they are in service only during secondary bypass. The gates and all operational systems functioned well. The PIT tag sample gates remained turned off. 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. PSMFC maintenance staff continued their weekly checks of the PIT tag detection system. The A and B side flume bypass gates remain off and open for secondary bypass. Algae removal from the system continued on every primary bypass day.

River Conditions

River conditions during the week are outlined in Table 2 below as provided by the smolt monitoring staff. The data period runs from 0700 to 0700 hours each day. Flows and spill are recorded in one-thousand cubic feet per second. Temperature is recorded in degrees Fahrenheit. The routine summer spill program in support of fish passage continued with 50 percent of river flow being spilled. The spill pattern was altered for navigation as required. The smolt monitoring staff continued recording water temperature data. The results are published in a separate report.

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
159.4	124.2	80.1	62.2	71.1	70.2	6.0	6.0

*Control room data.

Other

Inline Cooling Water Strainers: The next cooling water strainer examinations will occur on September 1.

Invasive Species: The next zebra mussel station examinations will occur in late August.

Avian Activity: Avian counts are recorded in Table 3 below.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Aug 7	Forebay	2	0	0	1	0
	Spill	16	0	3	10	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Aug 8	Forebay	1	0	0	0	0
	Spill	3	0	0	6	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Aug 9	Forebay	0	0	0	0	0
	Spill	16	0	0	8	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Aug 10	Forebay	1	0	0	0	1
	Spill	14	0	2	7	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Aug 11	Forebay	0	0	0	0	2
	Spill	10	0	0	5	0
	Powerhouse	0	1	0	0	0
	Outfall	0	0	0	0	0
Aug 12	Forebay	0	0	0	0	0
	Spill	21	2	0	7	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Aug 13	Forebay	0	0	1	0	0
	Spill	27	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0

Bird hazing distress calls remain deployed around the project and continued to function satisfactorily. The fisheries mechanic and the general maintenance staff continued to clean the bird hazing water cannon pump intake three times a week.

In the forebay observation zone, an occasional gull, tern, pelican, grebe and osprey was observed. Very small numbers of gulls, pelicans and cormorants were roosting on the rocks by the Washington shore boat dock, which is outside the forebay observation zone.

Gulls along with an occasional cormorant or tern were observed in the tailwater observation area feeding in the spillway flow. Gulls were roosting on the navigation lock wing wall at times. Most gulls were juveniles. Pelicans were feeding and roosting along the spill flow edge and the shorelines. Pelicans were also observed roosting on the rocks downstream in the wildlife park.

No birds were observed feeding at the juvenile bypass outfall. Overall bird numbers continued to decline.

Research: The adult lamprey passage study continued. On August 12, the camera frame at SFEW2 was raised, cleaned and inspected.

Project: Ice Harbor
Biologist: Ken Fone
Dates: August 7 – 13, 2015

Turbine Operation

Unit 6 has been out of service for annual maintenance since 0716 hours on July 6. Unit 5 was out of service from 0738 hours on August 12 to 1709 hours on August 13 due to 115 kV line restrictions. Unit 1 was out of service from 0745 hours on August 12 to 1643 hours on August 13 in support of fish research equipment removal and installation. Unit 2 was out of service from 0800 hours to 1600 hours on August 12 to ensure the safety of divers removing fish research equipment. Units were operated within the 1% peak efficiency range (hard constraint).

Adult Fish Passage Facility

Fish facility personnel inspected the adult fishways on August 10, 11, 12, and 13.

Fish Ladders: The north fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. The south fish ladder inspection areas (head differentials at fishway exit and picketed leads, and depth over weirs) were in criteria on all inspections. The south shore upstream picketed lead needs to be cleaned frequently to stay within criteria. Criteria for head differentials at ladder exits and picketed leads, and depth over the weirs are 0.5 feet or less, 0.3 feet or less, and 1.0-1.3 feet, respectively. The water surfaces above the fish ladder exits were clear of debris and the bubblers were operating satisfactorily.

Fishway Entrances and Collection Channel: The south shore entrance (SFE-1) depth and channel/tailwater differential were in criteria on all inspections. The north powerhouse entrance (NFE-2) depth and channel/tailwater differential were in criteria on all inspections. The north shore entrance (NSE-1) depth and channel/tailwater differential were in criteria on all inspections. Fishway entrance criteria are 8 feet depth or greater, or on sill. Channel/tailwater differential criteria are 1 – 2 feet.

The south shore channel velocity was in criteria on all inspections. The channel velocity criterion is 1.5-4.0 feet/second.

Auxiliary Water Supply (AWS) System: Two of the three north shore AWS pumps were operated throughout the week, except from 1010 hours to 1021 hours on August 10 when only pump 2 was operating before testing pump 3. North shore pump 3 has been out of service since 0846 hours on April 22 for pre-lubrication pump replacement, except when the pump was run on August 10 for testing purposes. Six of the eight south shore AWS pumps were operated throughout the week.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was no surface debris observed in the forebay. There was little to no surface debris coverage in the gatewells.

STSs/VBSs: The STSs are being operated in cycle-run. Inspection of each unit's STSs and unit 6 VBSs occurred on July 20 and 22. There were no screen problems observed. The next monthly inspections are scheduled for the week of August 17.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The bypass is operating with 20 orifices open. Orifices were routinely cycled and back-flushed once per day. Orifice light 6BS was found to be not working on July 10 due to a bad fixture. Orifice 6AS was opened and 6BS closed (with 6BN open) until the fixture can be replaced. On August 13, the cable that raises and lowers the brush on the mechanical screen cleaner at the primary dewaterer broke. The brush was manually raised out of the water and the screen cleaner was taken out of service for repair.

Juvenile Fish Facility: Fish are being routed through the bypass.

Fish Sampling: Fish sampling is done for the season.

Removable Spillway Weir (RSW): Mandated spill in support of fish passage began April 3. The RSW is in operation, except that spill gate 2 has been periodically closed since August 9 whenever there has not been enough river flow occurring to operate 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* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
23.2	15.0	13.3	5.0	70	69	7.6	6.0

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: The turbine cooling water strainers for units 5 and 6, units 1 and 2, and units 3 and 4 were inspected on July 6, 20, and 22, respectively. There were 11 Siberian prawns found (all mortalities). The next monthly strainer inspections will occur the week of August 17.

Invasive Species: No new exotic species have been found.

Avian Activity: The counting and recording of piscivorous bird numbers ended for the season on July 30. In general, the amount of birds around the dam remained relatively high during the week, with the majority of birds roosting on Eagle Island.

Research: The hydroacoustic transducers for the turbine intake fish distribution study were removed from 1B unit trash rack and the STS framework from gatewell slot 1B on August 12 and 13. Sensor fish release pipes were installed on the STS framework from gatewell slot 1B on August 13, in preparation for the turbine environment characterization study occurring in September.

Project: Lower Monumental
Biologists: Bill Spurgeon and Raymond Addis
Dates: August 7 – 13, 2015

Turbine Operation

The units are being operated within the hard constraint 1% operational criteria. Unit 1 was removed from service on December 10, 2014 for rehabilitation with an estimated return to service date of January 12, 2017. Unit 4 was removed from service on August 10 from 0830 hours to 1312 hours for headgate removal. Unit 5 was removed from service on August 10 at 0830 for annual maintenance with an estimated return of service date of August 31.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Blue Leaf Environmental biologists on August 7, 8, 9 and 12.

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

Fishway Entrances and Collection Channel: NSE1 and NSE2 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.

SPE1 and SPE2 weir gates were in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, both gate depth readings ranged from 5.7 to 6.2 feet. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, gate depth readings ranged from 6.1 to 7.0 feet. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections.

Auxiliary Water Supply System: AWS pumps 1, 2, and 3 were operated throughout this period.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 8 square yards of forebay debris observed during this period. Gatewell debris ranged from 0 - 10% surface coverage. No problems were observed in the gatewells.

STSs/VBSs: STS operations changed to cycle-run mode on August 7 as average sub-yearling Chinook length became greater than 120 mm.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel was operated with 19 or 20 orifices open.

Collection Facility: Operated in collection for transport mode. No problems occurred.

Transport Summary: Alternate day barging began on May 22 and continued through this period.

River Conditions

Spill operations in support of fish passage were initiated at 0001 hours on April 3. Spill during this report period conformed to the specified requirements. Spill was either halted or limited during barge docking and loading operations. Due to low river flows and low spill quantities, the RSW was closed on August 8 and continued to be closed through the remainder of this report period. River conditions during the week are outlined in Table 1 below.

Table 1. River conditions at Lower Monumental Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature (^{o}F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
22.5	16.6	10.1	4.2	70	69	5.0	4.0

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on August 3. There were no live fish recovered. Mortalities included 3 American shad and 7 Siberian prawn.

Invasive Species: No zebra mussels were observed at the monitoring stations on August 2.

Avian Activity: Daily tailrace counts of feeding piscivorous birds are summarized in Table 2 below. Cormorants were the dominant species observed during inspections this week. Hazing ended on June 2.

Table 2. Lower Monumental Tailrace Counts of Foraging Piscivorous Birds.

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
August 7	1100	0	0	0	0
August 8	1100	0	0	0	0
August 9	1100	0	1	0	0
August 10	1100	0	1	0	0
August 11	1120	0	0	0	0
August 12	1100	0	0	0	0
August 13	1100	0	0	0	0

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

Project: Little Goose
Biologist: Richard Weis
Dates: August 7 – 13, 2015

Turbine Operation

Most turbine units were available for service throughout this report period. Unit 2 is out of service for Digital Governor Install starting July 14. Unit 6 was removed from service for annual maintenance on July 27 and returned to service on August 6. Hard constraint 1% peak efficiency criteria are in effect. No violations were seen.

Adult Fish Passage Facility

Adult fishway inspections were performed on August 09, 12 and 13.

Fish Ladder: The ladder exit head differentials held steady at 0.1 feet (criteria $\leq$ 0.5 ft.). Water depths over the ladder weirs ranged between 1.1 and 1.2 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials ranged between 0.1 and 0.2 feet (criteria $\leq$ 0.3 ft.). The air bubbler used to prevent debris from collecting near the ladder exit operated satisfactorily.

Fishway Entrances and Collection Channel: The Adult Fishway system is in Automatic mode. We are still getting incorrect gate elevation readings when the gate is in the lower quarter of the fish channel at NSE. NSE 1 and 2 are in manual mode. Channel to tailwater head differentials ranged between 1.1 and 2.0 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.2 and 8.7 feet (criteria $\geq$ 8.0 ft). NPE weir depths ranged between 4.3 and 5.0 feet and were on sill (criteria $\geq$7.0 ft. or on sill). NSE weir depths ranged between 5.9 and 6.5 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocities measured at the North powerhouse ranged between 1.6 and 2.0 fps (criteria 1.5 to 4.0 fps). The monthly water velocity measured at the north powerhouse using the Rickly velocity equipment measured 1 foot from bottom, mid depth and surface averaged 3.8fps.

Auxiliary Water Supply System: Fish pumps 2 and 3 operated as designed. The fish pump 1 gear box was rebuilt and is waiting on parts to allow placement of the gearbox into position.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: The trash/shear boom is currently still on shore. Efforts are underway to have it repaired. Woody debris in the immediate forebay was 0 square feet for the week.

Spillway Weir: The spillway weir was removed for the season on June 18.

ESBS/VBS: ESBSs are all deployed and all gatewells are clean except gatewell 5A which still has oil absorbent pads deployed as a slight sheen of oil had been seen. Drawdowns were completed on August 12. All criteria were met.

Orifices, Collection Channel, Dewatering Structure, and Flume: The juvenile bypass system is running with 21 open orifices.

Transportation Facility: The JFF was transporting every other day barging. GBT (Gas Bubble Trauma) sampling ended for the season.

Transport Summary: The collection and transportation facility operated within criteria this report period. A total of 1,998 fish were collected for transport. The descaling and mortality rates were 0.4% and 0.6% respectively. This weekly report period saw 3 adult lamprey removed from sample and released upstream at Little Goose Landing.

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* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
22.4	19.0	9.3	4.2	71.3	68.2	5.8	5.3

*Ladder temperature.

Other

Inline Cooling Water Strainers: All cooling water strainers were checked on July 15. No fish were seen.

Invasive Species: The zebra mussel substrate monitor was inspected on July 17. No zebra mussels were detected.

Avian Activity: Bird hazing ended on June 16. See Table 2 below for daily count numbers.

Table 2. Daily maximum tailrace piscivorous bird counts at Little Goose Dam*.

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
August 7	1300	8	9	0	2
August 8	0800	10	0	0	0
August 9	1230	18	19	0	0
August 10	1115	7	7	0	0
August 11	1115	14	13	0	0
August 12	1120	7	11	0	3
August 13	0945	10	15	0	0

*Bird counts are taken from a single observation, Forebay and Tailrace.

Scroll Case Temperature: Little Goose Dam has only one temperature probe on the scroll case in unit 1 only. The temperature ranged between 69.0 and 70.0 degrees Fahrenheit.

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

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: August 7 – 13, 2015

Turbine Operation

All available units are operating within the hard constraint 1% peak efficiency criteria. Unit 4 was removed for service at 0920 hours on June 24 for annual maintenance/six year overhaul. Lower Granite annual Doble testing occurred August 10-14 as described in the 2015 Fish Passage Plan (Appendix A, section 9.1.3 page A-14). Unit 5 operated at speed-no-load (approximately 5 kcfs) for station service power with all other units out of service from 0600-1800 hours daily. Units 1-4 (T-1 Transformer) were returned to service at 1800 hours nightly. Units 5 and 6 (T2-Transformer) remained OOS (out of service) for the duration of Doble testing. Unit 6 remained OOS for annual maintenance with a return to service date of September 18. Doble testing was completed with T1 and T2 returned to service at 1727 hours August 13.

Adult Fish Passage Facility

The adult fishway was inspected by Corps or Blue Leaf Environmental biologists on August 8, 9, 10, and 12.

Fish Ladder: Fish ladder exit head differential and depth over the weirs were in criteria (≤0.5' and 1.0-1.3', respectively) on all inspections. Picketed lead head differential was in criteria (≤ 0.3') on all inspections.

Fishway Entrances and Collection Channel: SSE1 and SSE2 weir gates were in depth criteria (criteria ≥8' or on sill) on all inspections. South shore channel/tailwater head differential was in criteria (criteria 1'-2') on all inspections with the exception of a 0.9 feet reading on August 12.

NPE1 and NPE2 weir gates were in sill criteria (criteria ≥8' or on sill) on all inspections. While on sill, the weir gate depth readings were 5.9', 5.8, 5.2', and 5.6 feet. North powerhouse channel/tailwater head differential was in criteria (criteria 1'-2') with the exception of two readings of 0.9 feet on August 8 and 9.

NSE1 remains closed. NSE2 was raised 0.5 feet set with a chain fall hoist to 626.5 feet to improve channel/tailwater head differential. NSE2 was in depth criteria (criteria ≥7' or on sill) on all inspections with the exception of a 6.9 feet reading August 10. North shore channel/tailwater head differential was out of criteria (criteria 1'-2') on two inspections with head differential readings of 0.7 feet August 9 and 10.

The collection channel velocity was out of criteria (criteria 1.5-4.0 fps) on all inspections with readings ranging from 1.3 - 1.0 fps and a weekly average of 1.1 fps. Alternative methods of measuring collection channel velocity are being investigated.

Auxiliary Water Supply System: The fish ladder is in two pump operation with AWS pumps 1 and 2 operating, and pump 3 is in standby mode.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris was minimal. Daily gatewell surfaces inspections continue. Floating debris is being removed daily to prevent orifice blockages. No oil was reported in the gatewell slots.

ESBSs/VBSs: Video inspections are scheduled for late August.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are being backflushed every three hours.

Collection Facility: Collection for juvenile transport and condition sampling continues. Adult sockeye fallback collection from Lower Granite juvenile fish facility separator ended at 1100 hours on August 5. August 6 the permit to collect sockeye for IDFG (Idaho Department of Fish and Game) transport to Eagle Hatchery was extended. Fallback collection resumed August 10.

Transport Summary: Every other day barge transport is occurring with barges departing on even numbered days.

River Conditions

Spill with no RSW (FPP Table LWG-9) continues. River conditions during the week are outlined in Table 1 below.

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
23.0	18.1	13.2	6.6	67.7	66.0	5.0+	5.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were inspected July 29. No organisms were recovered.

Invasive Species: No evidence of zebra/quagga mussel was observed August 9.

Avian Activity: Piscivorous bird observation counts are taken from the juvenile fish separator platform one hour after sunrise and one hour before sunset. Maximum piscivorous bird counts are summarized in Table 2 below.

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

Date	Time (hours)	Gulls	Cormorants	Terns
August 7	0630	1	0	0
August 8	0645	0	0	0
August 9	0640	0	0	0
August 10	0640	0	0	0
August 11	0640	1	0	0
August 12	0640	1	0	0
August 13	0640	1	0	0

Fish Ladder Temperature Mitigation: Auxiliary pump 1 (supplies water to the ladder exit) and the three temporary ladder cooling pumps remain in 24 hour operation.

Adult Fish Trap Operations: Extending emergency trapping and transport of adult sockeye at Lower Granite to EFH (Eagle Fish Hatchery) operation was approved August 6 and resumed August 10. Sockeye were collected during adult trap biological sampling and from the JFF separator Monday-Thursday. IDFG were notified when sockeye are collected at Lower Granite and transported the next day at 1100 hour. When IDFG is transporting sockeye collected Thursday collection from the adult trap and separator will continue until the truck departs at 1100 hours Friday.

Fish Rescue Operation: No fish rescues occurred this week.

Research

Onsite research has concluded for the season.