U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#32-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: October 3 – 9, 2014

Turbine Operation

McNary had 10 to 11 units available for power generation this week. The hard constraint one percent criterion continues with no units having run outside the criteria. Unit outages are recorded in Table 1 below.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Main Reason for Outage
11	Sep 18, 2013 to Nov 15, 2014	About one year and two months.	Turbine bearing issue continues.
4	Mar 27 to Nov 15	About 7.5 months.	Turbine bearing issue continues.
9	Aug 11 to Mar 25, 2015	About 7.5 months.	Maintenance then rewind contract.
1	Oct 6 to 9	About three days.	Annual maintenance.
1, 2, 3 & 5	Oct 7	1.1 hours total.	ESBS camera inspections.

Adult Fish Passage Facilities

On October 3, 5 and 8, the McNary fisheries biologist performed measured inspections of the adult fishways. The fisheries staff is checking the exits on all shifts as the juvenile system is in primary bypass. Visual adult fish counts continued.

On October 6, the lamprey passage structure at SFEW2 was closed. We replaced the stem covers on the gate's two shafts.

This week, we learned the malfunctioning heat pump at the Oregon ladder PIT tag detection station had been repaired. A loose wire needed to be reconnected. The unit is running properly now.

Fish Ladders Exits: During measured inspections, both ladders met all Fish Passage Plan criteria. The project continues to clean the picketed leads as required including weekends.

At the Washington exit, the operators adjusted the set points once on October 9. The amount of milfoil in the area is very light.

The Oregon exit crane will return to service on October 10. Currently, the general maintenance crew continues to clean the picketed leads with a portable crane, which occurs almost every morning. October 8 had the highest debris load this week. Debris loads in the area of the exit continue to fluctuate depending on wind direction. What debris that remains is slowly dissipating along the Oregon shore.

Oregon exit traveling screen differentials remain low. Operators reset two false screen differential alarms without incident. Trash rack differentials decreased from 1.6 to 1.2 feet. We will continue to monitor both differentials regularly.

At the Oregon exit, operators adjusted the set points on October 5 and 9. On the second occasion, we found too many of the exit weirs laying flat, resulting in high flow. The operators briefly placed the exit in manual mode so they could reset the weirs and the set points, restoring normal flow and operation.

Fishway Entrances and Collection Channel: At the Washington ladder entrance, all inspection points were in criteria. In the near future, the project will replace the LEDs (Light Emitting Diodes) for W2 and W3 with a panel view.

At the Oregon ladder entrances, all inspection points were in criteria. NFEW3, SFEW1 and SFEW2 were slightly out of calibration on occasion. At the north entrance, lower tailwater elevations are causing a reduction in criteria point values. Electrical upgrades of the Oregon entrance controls will be completed in the near future.

Collection channel surface velocities averaged 1.5 feet per second. Lower tailwater elevations are probably affecting our readings.

Auxiliary Water Supply System: For the report week, the PUD at the Washington ladder had no interruptions in service.

Fish pumps 1 and 3 operated with blade angles of 30 degrees with two interruptions in service. During the afternoons of October 6 and 7, both pumps were out of service for 21 minutes related to breaker exchanges and electrical bus switching. Pump 2 remains out of service for major overhaul which will require a contract for the winter and spring of 2015.

Cleaning and rehabilitation of the 1000 cfs water supply conduit discharge valves have begun. These valves were removed last winter. The juvenile facility continues to supply the usual 450 cfs to the north powerhouse pool with no interruptions in service.

Juvenile Fish Passage Facility

The Fall primary bypass season continued. Light winter maintenance and facility winterization is in progress.

Forebay Debris/Gatewell Debris/Oil: Floating forebay debris, which consisted of milfoil and woody material, was minimal to very light. Incoming debris was minimal. Changes in wind direction moved the debris from the powerhouse to the Oregon shore and back. There is no debris at the spillway. Our trash rack differential readings revealed no problems and no racks were cleaned this week. We observed no problems in the gatewell slots.

ESBSs/VBSs: ESBSs are installed in all units except units 4 and 11, which are out of service. The screens in slots 1A, 7A and 13C remain in timer mode. On October 7, camera inspections took place in units 1, 2, 3 and 5. No problems were found and no fish mortalities were observed. Unit 1 was already out of service.

VBS differential monitoring revealed no screens out of criteria. On October 6 and 7, project personnel cleaned six screens as a preventative measure. On October 6, the project staff performed a scheduled maintenance check of the screens in slots 13A and 13C, which included cleaning. The screen in slot 13B was not examined as it had been recently cleaned. No problems were found and no fish mortalities were observed. VBS rehabilitation continues with unit 11 as the staging area.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Forty two orifices were open all week. Orifice attraction lights were replaced as needed. The fisheries mechanic also performed scheduled orifice valve actuator maintenance.

During VBS cleaning, we closed the orifices at the slots the work was being done and opened spare orifices at adjacent slots. On October 6, during a personnel change, the orifice at 14B slot was inadvertently left closed for approximately four hours after the VBS had been cleaned. No fish injuries or losses were noted.

This week, we repaired two holes in the adult jump netting along the handrail.

On October 7, 8 and 10, the control system panel view back light worked intermittently. We could not read system values but the system continued to function flawlessly. An electrical technician resolved the issue by working on the back light electrical connection and replacing the bulb.

There are no other technical problems to report as all systems functioned well in automatic mode. The transition screen cleaning device will remain out of service until winter. With the system in primary bypass 24 hours per day, 7 days per week, the fisheries staff continued to monitor the channel around the clock.

District engineers and district biologists are working with the project to develop a plan for future rehabilitation of the channel's systems.

Bypass Facility: The Fall primary bypass season is in progress. All systems are off, light maintenance and partial winterization continues. PIT tag detection occurs only in the full flow pipe during the fall season.

This week, we began removal of the direct barge loading lines at the barge dock. Scheduled maintenance also began on various systems. Next week, the long awaited facility roof repairs will begin.

River Conditions

River conditions during the week are outlined in Table 2 as provided by COE data. Our data day runs from 0000 to 2400 hours each day. The project has been doing rehabilitation of the spillway crane buses and scheduled maintenance on the spillway hoists.

Table 2. River conditions at McNary Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temp. (^{o}F)*		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
111.5	80.9	0.0	0.0	66	65	6.0	6.0

*Temperature taken from the Unit 1 scrollcase.

Other

Inline Cooling Water Strainers: The next cooling water strainer examination will occur on November 4.

Invasive Species: The next zebra mussel station examination will occur in late October.

Avian Activity: Bird counts are no longer occurring. We continue to examine, monitor temperature and add oil to the outfall water cannon supply pump. We also continue to check and clean the pump intake as needed. Repairs to the pump are being arranged.

The bird distress calls deployed along the navigation lock wing wall and around the project appear to have discouraged roosting. The fisheries staff monitors and adjust the calls as needed.

In tailrace locations, we noted gulls feeding in the powerhouse flow while they and cormorants were roosting on the navigation lock wing wall, which is part of the spill zone. Also, we observed gulls and cormorants at the bypass outfall. Bird numbers are affected by the juvenile shad out migration and appear to be decreasing.

In the forebay area, we observed an occasional gull or cormorant. We observed gulls on the rock by the Washington boat dock. An occasional kingfisher was observed on project.

Research: The adult lamprey passage study continues to be phased out. Preparations for the adult salmonid fallback study have been delayed to November due to funding and other issues. The University of Idaho is preparing for a winter adult steelhead radio tracking study. In the next few days, they will remove some abandoned antennas from the tailrace deck.

Project: Ice Harbor
Biologist: Charlie Dennis
Dates: October 3 – 9, 2014

Turbine Operation

Unit 3 was taken out of service on July 7 at 1346 hours to investigate a generator electrical grounding problem. Annual maintenance of unit 3 is in progress. Unit 6 was removed from service on October 6, at 1048 hrs in support of annual maintenance. This turbine unit remains out of service (OOS). Unit 4 was taken OOS September 30, to repair a governor oil leak and remains OOS. All available units were operated within 1% of peak turbine efficiency as specified in the Fish Passage Plan.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on October 6, 7, 8 and October 9.

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. 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. Fish ladder exits were clear of debris and the bubblers were operating satisfactorily. Both the north and the south shore picketed leads are in their deployed positions.

Fishway Entrances and Collection Channel (inspection date order): The south shore entrance (SFE) depth and channel/tailwater differential were in criteria on all inspections. The north powerhouse entrance (NFE) depth and channel/tailwater differential were in criteria on all inspections. The north shore entrance (NSE) 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.

Auxiliary Water Supply System: Two of the 3 north shore fish pumps were operated throughout the week. Six of the 8 south fish pumps were operated.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was little to no debris observed in the forebay and gatewells. Oil sheens were observed on the water surface in gatewell slot 5B and head gate slot 5B during this reporting period. Powerhouse mechanics were notified.

STSs/VBSs: STSs are in position for juvenile fish guidance and have been in cycle run mode since July 21. STS inspections and unit 2 VBS inspections were performed on September 22 and 24. No significant problems were found.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: The juvenile fish bypass was placed in operation on March 17. The collection channel operated with 20 orifices open.

Juvenile Bypass Facility: The bypass is in operation.

Fish Sampling: Sampling operations began on April 2 and ended on July 15.

Removable Spillway Weir: Spill in support of fish passage began on April 3, 2014 and ended on August 31. The contractor for the spill bay 2 ogee and flow deflector modification began mobilizing materials and equipment to the project on September 9. Spillway 2 modifications have begun.

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
23.70	15.60	0	0	65	64	7.9	7.0

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections of units 1, 2, 4, and 6 took place on September 22 and 24. A total of 26 juvenile shad mortalities were found.

Invasive Species: No new exotic species have been found.

Avian Activity: Contracted hazing of piscivorous birds for 16 hours per day began on April 1 and ended on June 30. The piscivorous bird count program at the project began on April 1 and ended on July 15. Relatively low numbers of cormorants, gulls, and pelicans were seen around the project during the week.

Research: Sensor fish are scheduled to be released through unit 3 turbine beginning the week of October 20 for the turbine characterization study. Pipes for the release of the sensor fish were installed on the framework of the STS in gatewell slot 3B [Note: since this report was written, sensor fish releases have been postponed to a later date].

Project: Lower Monumental
Biologists: Bill Spurgeon and Ray Addis
Dates: October 3 – 9, 2014

Turbine Operation

All available units are being operated within the hard 1% peak efficiency criteria. On October 6, units 1 through 5 were rotated out of service (i.e. one at a time) from 0945 to 1754 hours in support of ROV trash rack inspections. Unit 6 remains out of service for overhaul.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and PSMFC/State biologists on October 4, 6, 7 and 9.

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 the gate depth readings were 6.8', 6.7', 6.8', and 6.8 feet. South powerhouse channel/tailwater head was in of criteria (1'-2') on all inspections.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, the gate depth readings were 7.7', 7.8', 7.7' and 7.7 feet. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections.

The collection channel velocity remained in criteria (1.5 - 4.0 ft/sec) this week.

Any criteria violations at the fishway entrances are related to the failure of the PLC (Programmable Logic Circuit) for automated control. Without automated control, the FCRG (Fishway Control Regulating Gate) drifts closed causing the fishway entrance head to go out of criteria at the south shore entrances. Operators are manually controlling the FCRG and fish pumps to maintain head and depth criteria at fishway entrances. The loss of the fishway PLC also caused all weir gates to be placed in local control. This results in criteria violations if monitoring and adjustment does not occur as tailwater level fluctuates. To minimize this, SPE1 and SPE2 are placed on sill.

The replacement PLC for automated control of the fishway has been received. It is currently undergoing programming. The automated system was estimated to return to service in August.

The operators have been instructed to conduct a physical inspection on night shift. This replaces the FPP inspection via data screen information normally conducted on that shift.

Auxiliary Water Supply System: All AWS pumps were in service and operating throughout this period.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 64 square yards of forebay debris observed during this period. Gatewell debris ranged from 0 - 10% surface coverage. Oil absorbent pads were placed in 4 gatewells due to a sheen that was likely caused by grain dust.

STSs/VBSs: STSs are operating in cycle run mode. STSs were inspected October 7 and 8. All screens passed inspection.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel is operating with 18 orifices open.

Collection Facility: The facility has been on primary bypass since October 1, due to the end of the collection season.

Transport Summary: Alternate day trucking ended with the final sample on October 1.

River Conditions

Summer spill ended at 0000 hours on September 1. 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
20.3	17.0	0.0	0.0	64.0	62.0	6.0	3.5

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on October 7. No live fish were recovered. Mortalities included l prawn.

Invasive Species: No zebra mussels were observed at the monitoring stations on October 9.

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 for the season ended on June 2. No additional action trigger points were met from the avian action plan through this time period.

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

Date	Time (hours)	Gulls	Cormorants	Terns
10/04/14	1215	1	20	0
10/06/14	1400	4	5	0
10/07/14	0810	15	19	0
10/09/14	1600	0	10	0

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

Project: Little Goose
Biologists: Towns Burgess and Richard Weis
Dates: October 3 – 9, 2014

Turbine Operation

Turbine units 1, 2, 4 and 6 were available for most of this report period. Unit 3 was placed out of service on July 7 at 0700 hours for a planned six year overhaul. Unit 5 was out of service this report period as Station Service Transformer 1 is not working properly. Unit 4 was placed out of service for annual repair on October 6. All available turbine units were operated within 1% peak efficiency range.

Adult Fish Passage Facility

Adult fishway inspections were performed on October 04, 7 and 9.

Fish Ladder: Ladder exit differentials ranged between 0.0 and 0.1 ft. (criteria $\leq$ 0.5 ft.). Water depths over the weirs held steady at 1.2 feet (criteria 1.0-1.3 ft.). No differential was observed at the picketed leads (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 1.8 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.1 and 8.2 feet (criteria $\geq$ 8.0 ft). NPE weirs rested on sill and ranged between 7.1 and 7.4 feet (criteria $\geq$7.0 ft). NSE weirs are in manual mode and depths ranged between 6.8 and 7.1 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity near north shore entrance ranged between 1.9 to 2.4 fps (criteria 1.5 to 4.0 fps). North powerhouse surface water velocities measured between 2.0 and 2.3 fps.

Auxiliary Water Supply System: All fish pumps operated within criteria.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Estimated amounts of woody debris in the immediate forebay ranged between 120 and 600 sq ft.

Spillway Weir: The spillway weir was removed from service on August 4.

ESBS/VBS: ESBSs operated within criteria this report period. All brushes operated as designed. Drawdown tests on unit 1 were performed October 9 and all differentials met criteria.

Orifices, Collection Channel, Dewatering Structure, and Flume: The juvenile system operated with 19 open orifices.

Transportation Facility: The collection and transportation facility operated within criteria this report period. Daily fish collection ranged between 5 and 13 and totaled 59 for the week. The descaling and mortality rates were 5.7% and 4.0% respectively.

Transport Summary: Every other day trucking continues with no problems encountered.

River Conditions

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
19.2	17.9	0	0	64.1	64.0	6.0+	6.0+

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were not checked this period.

Invasive Species: No zebra mussels were observed on the substrate monitor on September 13. The next inspection is scheduled for October 13.

Avian Activity: USDA-APHIS bird hazing ended on June 20. Daily maximum avian counts are outlined in Table 2 below.

Table 2. Tailrace counts of foraging piscivorous birds at Little Goose Dam.

Date	Time (hours)	Gulls	Cormorants	Terns	Pelicans
October 3	1420	24	13	0	0
October 4	1500	16	20	0	0
October 4	1400	12	13	0	0
October 6	0800	16	8	0	0
October 7	1230	23	13	0	0
October 8	1515	18	26	0	0
October 9	1245	17	29	0	0

Gas Bubble Disease: WDFW Gas Bubble Trauma monitoring efforts concluded July 28.

Research: The University of Idaho continues their adult salmon and adult lamprey passage study.

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: October 3 – 9, 2014

Turbine Operation

Turbine units are being operated in hard constraint of the 1% operation criteria. Unit 5 was removed from service for annual maintenance at 0657 hours on September 2. A contact issue with unit 5 blades and liner is being investigated. The expected return to service date for unit 5 is now October 31. On October 8 at 1050 hours, Unit 6 was forced out of service in order to address a SQ1 ground on the slot 6B ESBS brush cleaning system. This unit returned to service at 1300 hours on October 10. On October 9 at 1840 hours, Unit 4 was forced out of service due to governor/speed issues. The cause of this outage is still being investigated. As scheduled, units 1, 2 and 3 were taken out of service from 1030 hours until 1531 hours on October 9 to allow raking of the associated trash racks.

Adult Fish Passage Facility

The fish ladder was inspected by Corps biologists on October 3, 4, 5 and 6. Visual adult fish counts are scheduled to continue through October 31.

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

Fishway Entrances and Collection Channel: NSE1 was out of criteria (criteria ≥7' or on sill) on all inspections. NSE1 depth readings ranged from 4.8 to 5.1 feet. NSE2 was out of criteria on all inspections with depth readings ranging from 6.2 to 6.7 feet. North shore channel/tailwater head was out of criteria (criteria 1'-2') on all but one inspection. All the out of criteria head differential readings measured 0.9 feet. NSE2 has been out of service since 2011 and is currently suspended with a hoist system at a compromised depth of 630.0 feet. The gate requires a complete rehab and will remain out of service until funding is available. Entrance weir depths are being sacrificed in an attempt to maintain channel/tailwater head differential.

NPE1 and NPE2 weir gates were in depth criteria (criteria ≥8' or on sill) on all inspections. North powerhouse channel/tailwater head were in criteria (criteria 1'-2') on all inspections.

SSE1 and SSE2 weir gates were in depth criteria (criteria ≥8' or on sill) on all inspections. South shore channel/tailwater head was in criteria (criteria 1'-2') on all inspections

Collection channel velocities were out of criteria (criteria 1.5-4.0 fps) on all inspections. The daily average channel velocity readings measured 1.1 feet per second on all inspections. It is likely these reading are inaccurate due to a faulty velocity meter. The powerhouse electrical crew is investigating the problem and looking into alternatives for velocity meter replacement.

Physical surface velocity readings were taken at the north and south shore channels. The north shore channel surface velocity readings were 1.8 and 2.0 fps and south shore channel readings were 2.5 and 2.4 fps.

Auxiliary Water Supply System: All AWS pumps were available for service. Pumps 1 and 3 were operated and fish pump 2 remained in standby mode. Fish pump 1 was switched from slow to fast speed at 1451 hours on September 19 in order to provide more water to the fishway channel.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris varied during the week due to wind strength and direction. Daily monitoring and removal of gatewell debris continues. In order to preempt a possible cause of elevated descaling, the trash racks associated with turbine units 1, 2 and 3 were raked on October 9. Less than half a truck load of debris (5 -10 cubic yards) was removed.

ESBSs/VBSs: ESBSs are deployed in all units. The brush cleaning cycle is set for one cycle every 2 hours. As noted above, the ESBS brush cleaning system in slot 6B malfunctioned on October 8.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are backflushed every three hours. Debris levels remained fairly high during the week, consisting of primarily fine material. The separator inclined screen at Lower Granite supplies water to the raceways and fish holding tanks. When it becomes clogged, life support to the holding facilities is threatened. The screen again became clogged on the morning of October 3 and it was necessary to switch to primary bypass mode between the hours of 0920 and 1000 in order to powerwash and rake the inclined screen (dewatering structure).

Collection Facility: The collection facility is operating at a 100% sample rate. The Juvenile Fish Passage Facility saw elevated descaling of smolts during the report week; this is a point of concern. The water has been lowered in the separator several times (for various purposes) enabling close inspection of the conditions under the bars – very little if any debris were removed each time. The separator exits are monitored regularly, as are the gatewells and orifices. Descaling for all species combined was 5.70% for the week and is 1.06% for the season compared to a cumulative rate of 2.66% in 2013 and 1.87% for the 2008-2012 average. Descaling typically is higher during the end of September and the beginning of October and so far, this season is no exception even though the cumulative descaling rate is the lowest it has ever been. Due to increasing numbers of jack Chinook making it through the separator bars and ending up in the lab sample, on October 3, the facility installed a smaller series of separator bars to screen the jacks out of the sample. These bars have proven quite effective in previous years. The JFF operated smoothly during the week, except for the above mentioned switch to primary bypass mode.

Transport Summary: Every-other-day midi-tank truck transport is occurring with trucks departing on odd numbered days. The truck drivers are beginning to note an increase in the number of piscivorous birds present at the Bonneville release location. The alternate release site of Dalton Point is an option going forward.

River Conditions

River conditions during the week are outlined in Table 1. Summer spill operations ended at 0001 hours on September 1.

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
20.7	17.7	0.0	0.0	65.4	65.0	5.0+	4.1

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were last inspected on September 24 and 25. One lamprey mortality was recovered. No other fish species were observed. The combined unit run time was 1,108.1 hours. The next inspections are scheduled for late October.

Invasive Species: No zebra/quagga mussels were observed at the monitoring station on September 20.

Avian Activity: Daily Picivorous bird counts are taken from the juvenile fish separator platform one hour after sunrise and one hour before sunset. Maximum picivorous bird counts are summarized in Table 2.

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

Date	Time (hours)	Gulls	Cormorants	Terns
October 3	0745	3	0	0
October 4	0745	1	0	0
October 5	0745	4	10	0
October 6	0745	3	27	0
October 7	0730	1	21	0
October 8	1715	2	52	0
October 9	0800	8	26	0

Adult Fish Trap Operations: The adult fish trap facility remains in 24 hours per day operation. Collection of fall adult Chinook for truck transportation to Lyons Ferry Hatchery concluded on September 29 as brood stock needs have been met. Nez Perce continues to collect fall adult

Chinook for truck transportation to Cherry Lane Hatchery however transport days are now contingent on the number of fish being trapped.

Research

Research: Onsite juvenile fish research has concluded for the year.