U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#31-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: September 26 – October 2, 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.
5	Sep 2 to 26	About 24 days.	Annual and above water maintenance.
12, 13 & 14	Sep 30	1.2 hours total.	ESBS camera inspections.
6	Oct 1	Five hours.	Tap the hub.

Adult Fish Passage Facilities

On September 26, 28 and October 1, the McNary fisheries biologist performed measured inspections of the adult fishways. The fisheries staff is checking the exits on all shifts when the juvenile system is in primary bypass. Visual adult fish counting continues.

On September 30, the lamprey passage season and counting concluded. On October 6, the lamprey passage structure at SFEW2 will be closed.

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

At the Washington exit, one alarm occurred, which the operators reset. The amount of milfoil in the area is very light.

The Oregon exit crane remains out of service and the general maintenance crew continues to clean the picketed leads with a portable crane. Debris loads in the area of the exit continue to fluctuate depending on wind direction though the quantity of debris is slowly dissipating.

Traveling screen differentials remain low at the Oregon exit. Trash rack differentials remain stable, ranging from 1.5 to 2.0 feet. We will continue to monitor both differentials regularly.

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.

All Oregon ladder entrance inspection points met criteria. At the north entrance, lower tailwater elevations are causing a reduction in criteria point values. At the south entrance, SFEW2 was occasionally slightly out of calibration. Electrical upgrades of the Oregon entrances will be completed in the near future.

Collection channel surface velocities averaged 1.2 feet per second. Lower tailwater elevations are probably affecting our readings.

Auxiliary Water Supply System: For the report week, the PUD turbine unit in the Washington ladder had no interruptions in service. On September 29, the operators reset an alarm without incident.

Fish pumps 1 and 3 ran satisfactory with blade angles of 30 degrees. Pump 2 remains out of service for major overhaul which will require a contract for the winter and spring of 2015.

The juvenile facility continues to supplying the usual 450 cfs to the north powerhouse pool with no interruptions in service to report.

Juvenile Fish Passage Facility

There were no deviations from our schedule. On September 30, at 0700 hours, the bypass season with alternating days of secondary and primary bypass concluded. All fish are now routed through the primary bypass. Fish were evacuated from the separator and the last sample was examined and released. Light winter maintenance will begin at the facility along with phased in winterization.

Secondary bypass occurred on September 27 and 29. We bypassed 224 smolts, 12 juvenile lamprey and 141,712 juvenile shad this week.

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 one problem in the gatewell slots. This week, a very small amount of hydraulic fluid was removed from 9A slot with absorbent pads.

ESBSs/VBSs: ESBS are installed at all units except units 4 and 11, which are out of service. The screens at in slots 1A, 7A and 13C remain in timer mode. On September 30, we performed camera inspections in units 12, 13 and 14. No problems were found. We did not observe any fish losses. On October 1, the screen in slot 10A triggered an alarm and the operators reset it without incident.

VBS differential monitoring efforts revealed no screens out of criteria. On October 1, project personnel cleaned one screen as a preventative measure. On October 2, project staff performed a scheduled maintenance check, which included cleaning of 3 screens in unit 12. 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. During VBS cleaning, we closed the orifices at the slots the work was being done and opened spare orifices at adjacent slots. We replaced orifice attraction and walkway lights as needed.

On October 2, a clipped adult steelhead mortality was found on the channel walkway grating. It appears the fish cleared the jump netting. We will examine the area to see if repairs or improvements are needed.

There are no technical issues 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 24/7, the fisheries staff with monitor the channel around the clock.

Bypass Facility: There are no problems to report for the week as all systems functioned normally until the switch to fall primary bypass season at which time all systems were removed from service. PIT tag detection will only occur in the full flow pipe during the fall season. We will begin light maintenance and partial winterization at the facility. This week, we completed removal of the direct barge loading lines. We reported the brittle PVC to the district engineers.

River Conditions

River conditions during the week are outlined in Table 2 as provided by COE data because the smolt monitoring staff's last data day was September 30. Our data day runs from 0000 to 2400 hours each day.

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
87.8	72.8	0.0	0.0	67	66	6.0	6.0

*From Unit 1 Scroll Case.

Other

Inline Cooling Water Strainers: On September 30, the strainer examination revealed no ESA listed fish mortalities or lamprey mortalities.

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

Avian Activity: Bird counts concluded on September 30 with the conclusion of the sampling season. Counts are reflected in Table 3 below.

Table 3. Daily avian counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Sep 26	Forebay	0	0	0	0	0
	Spill	25	20	0	0	0
	Powerhouse	73	2	0	0	0
	Outfall	6	2	0	0	0
Sep 27	Forebay	0	4	0	0	0
	Spill	37	63	0	0	0
	Powerhouse	13	0	0	0	0
	Outfall	2	4	0	0	0
Sep 28	Forebay	0	0	0	0	0
	Spill	6	57	0	0	0
	Powerhouse	11	0	0	0	0
	Outfall	6	5	0	0	0
Sep 29	Forebay	0	4	0	0	0
	Spill	4	55	0	0	0
	Powerhouse	5	0	0	0	0
	Outfall	2	4	0	0	0
Sep 30	Forebay	2	0	0	0	0
	Spill	19	35	0	0	0
	Powerhouse	12	0	0	0	0
	Outfall	7	21	0	0	0

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. 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 monitor and adjust the calls as needed.

In the tailwater area, gulls were 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 now influenced by the juvenile shad out migration. 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 also 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 difficulties and other issues.

Project: Ice Harbor
Biologists: Kenneth Fone and Charlie Dennis
Dates: September 26 – October 2, 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 also taking place. Unit 5 was OOS (Out of Service) from September 9 at 0800 hours to October 1 at 1253 hours for annual maintenance. Unit 6 was OOS from 0700 hours to 1700 hours on October 29, and from 0630 hours to 1834 hours on September 30, for spilbay 2 dive inspection. 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 September 29, 30 and October 1.

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 5B gatewell slot and 5B head gate slot 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 on September 9. Spillway 2 modifications are in progress.

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
16.3	10.5	0	0	66	65	7.8	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.

Project: Lower Monumental
Biologists: Bill Spurgeon and Ray Addis
Dates: September 26 – October 2, 2014

Turbine Operation

The units are being operated in hard constraint of the 1% operation criteria. Unit 6 was down for overhaul.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and PSMFC/State biologists on September 26, 27, 28 and October 1.

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 6.2', 6.7', 6.5', and 6.5 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 7.3', 7.7', 7.6' and 7.5 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 to replace the FPP inspection via data screen conducted normally 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 28 square yards of forebay debris observed during this period. Gatewell debris ranged from 0 - 6% 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 September 9 and 10. All screens passed inspection.

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

Collection Facility: Recently, sampled fish began showing symptoms consistent with Columnaris disease. On September 12, in concurrence with FPOM recommendations at the September 11 monthly meeting, juvenile fish began to be collected for the day of transport only and bypassed on alternate days. This action was implemented to reduce fish stress and holding time. No fish were held more than 24 hours before transport. These changes in fish transportation operations are similar to what has been done in the past at the Lower Monumental Juvenile Fish Facility under these types of circumstances. The sampling season ended at 0700 hours on October 1 at which time the facility entered primary bypass.

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
16.0	12.2	0.0	0.0	64.0	64.0	4.0	3.5

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on September 8. No live fish were recovered. Mortalities included l adult lamprey, 8 shad and 17 prawns.

Invasive Species: No zebra mussels were observed at the monitoring stations on September 6.

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
Sep 26	1200	0	1	0
Sep 27	1200	1	3	0
Sep 28	1105	0	3	0
Sep 29	1115	3	2	0
Sep 30	1110	0	1	0
Oct 1	1110	0	1	0

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

Project: Little Goose
Biologist: James Brandon
Dates: September 26 – October 2, 2014

Turbine Operation

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

Adult Fish Passage Facility

Adult fishway inspections were performed on September 27, October 01 and 02.

Fish Ladder: Ladder exit differentials ranged between 0.0 and 0.1 ft. (criteria ≤ 0.5 ft.). Water depths over the weirs ranged between 1.1 and 1.2 feet (criteria 1.0-1.3 ft.). No differential was observed at the picketed leads (criteria ≤ 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 0.8 and 2.0 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.1 and 9.2 feet (criteria ≥ 8.0 ft). NPE weirs rested on sill and depths ranged between 6.3 and 7.0 feet (criteria ≥7.0 ft). NSE weirs are in manual mode and depths ranged between 5.2 and 6.9 feet (criteria ≥ 6.0 ft.). Collection channel surface water velocity near north shore entrance ranged between 2.1 and 2.5 fps (criteria 1.5 to 4.0 fps). North powerhouse surface water velocity measured between 1.8 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 0 and 20 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.

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 1 and 23 and totaled 61 for the week. The descaling and mortality rates were 1.4% and 12.1% 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
19.1	14.2	0	0	64.0	64.8	6.0+	6.0

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were checked September 26. No fish were found.

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.

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

Date	Time (hours)	Gulls	Cormorants	Terns	Pelicans
September 26	1430	22	14	0	0
September 27	1610	22	18	0	0
September 28	1615	17	24	0	0
September 29	1500	17	11	0	0
September 30	1337	21	10	0	0
October 1	1320	11	7	0	0
October 2	1530	8	19	0	0

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

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

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: September 26 – October 2, 2014

Turbine Operation

Available turbine units are being operated within the hard constraint 1% peak efficiency 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 September 30, unit 4 was out of service from 0844 until 1015 hours and unit 6 was out of service from 1024 hours until 1056 hours for scheduled exciter warranty work.

Adult Fish Passage Facility

The fish ladder was inspected by Corps biologists on September 26, 27 and 28. 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 and NSE2 were out of criteria (criteria ≥7' or on sill) on all inspections. NSE1 depth readings were 4.8', 4.9' and 4.8' feet. NSE2 depth readings were 4.6', 4.8' and 5.0' feet. North shore channel/tailwater head was in criteria (criteria 1'-2') on all but one inspection with a channel/tailwater head differential reading of 0.9 feet on September 28. 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 in manual mode 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 sill criteria (criteria ≥8' or on sill) on all inspections. While on sill the depth readings were 6.6', 6.8' and 7.0 feet. North powerhouse channel/tailwater head differentials 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 velocity was out of criteria (criteria 1.5-4.0 fps) on all inspections. Daily average channel velocity readings were 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 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 reading were 1.6 and 1.8 fps and south shore channel readings were 1.7 and 1.9 fps.

Auxiliary Water Supply System: All AWS pumps were available for service. Pumps 1 and 3 were operated. Fish pump 2 was in standby mode. Fish pump 1 remained in fast speed mode to increase the collection channel water supply.

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.

ESBSs/VBSs: ESBSs are deployed in all units. The brush cleaning cycle is set for once every two hours. ESBSs/VBSs in unit 4 were inspected on September 8. All screens passed inspection.

Orifices, Collection Channel, Dewatering Structure, Bypass Pipe: Orifices are backflushed every three hours. Debris levels increased during the week, primarily consisting of fine material. The dewatering incline screen that regulates separator water level and provides water supply to the raceways and holding tanks became plugged with debris on October 2.

Collection Facility: The collection facility is operating at a 100% sample rate. On October 2 the facility was put in primary bypass mode from 0815 to 0830 hours to powerwash the dewatering incline screen that was clogged with debris.

Transport Summary: Every-other-day midi-tank truck transport is occurring with trucks departing on odd numbered days in September and October.

River Conditions

Summer spill operations ended at 0001 hours on September 1. No spills took place this week. 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
19.8	15.3	0.0	0.0	65.0	64.4	5.0+	4.5

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were last inspected on September 24 and 25. There was one lamprey mortality recovered. No other fish species were recovered. 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 piscivorous bird 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.

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

Date	Time (hours)	Gulls	Cormorants	Terns
September 26	1745	12	14	0
September 27	0750	2	7	0
September 28	0745	3	3	0
September 29	0745	1	3	0
September 30	0730	3	0	0
October 1	0745	4	0	14
October 2	0730	2	0	0

Adult Fish Trap Operations: The adult fish trap facility operated 24 hours per day. The sample rate was decreased from 10% to 8% at 1500 hours on October 1. Collection of fall adult Chinook for truck transportation to Lyons Ferry Hatchery concluded on September 29 as bloodstock needs have been met. Nez Perce continues to collect adult fall Chinook for truck transportation to Cherry Lane Hatchery. However, transport days are now contingent on the number of fish being trapped.

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