U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#30-2014

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: September 19 - 25, 2014

Turbine Operation

McNary had 10 units available for power generation this week. Unit outages are recorded in Table 1 below. The hard constraint one percent criterion continues with one unit having run outside the criteria. On September 24, unit 2 briefly ran outside the lower limit of the criteria so the VBS in the A slot could be reinstalled after cleaning.

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.
7, 8 & 10	Sep 23	65 minutes total.	ESBS camera inspections.

Adult Fish Passage Facilities

On September 19, 21 and 24, 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 will conclude.

Fish Ladder Exits: During measured inspections, both ladders exits met all Fish Passage Plan criteria except on September 21, when the Oregon exit count station differential measured 0.9 feet. The general maintenance crew subsequently cleaned the picketed leads. Project personnel continue to clean the picketed leads as required including weekends.

The Oregon exit crane remains out of service and the general maintenance crew continues to clean the picketed leads with a portable crane. On September 23, we repaired the incinerator toilet at the Oregon count station.

Traveling screen differentials at the Oregon Exit remains low. However, the trash rack differentials remained stable and acceptable (1.5 to 1.8 feet). We will continue to monitor both differentials regularly. Debris loads in the area of the exit continue to fluctuate depending on wind direction. What debris that remains is distributed mostly along the Oregon shore.

At the Washington exit, the regulating weir triggered an alarm once, and the operators reset it without incident. The amount of milfoil in the area is fairly light.

Fishway Entrances and Collection Channel: All Washington ladder entrance 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 were in criteria. At the north entrance, lower tailwater elevations are causing a reduction in criteria point values. At the south entrance, SFEW2 continued to have very slight calibration drifts and SFEW1 was slightly out of calibration once. Electrical upgrades of the Oregon entrances will be completed in the near future.

Surface collection channel velocities averaged 1.6 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. Fish pumps 1 and 3 ran satisfactorily with blade angles of 30 degrees. Pump 2 remains out of service for major overhaul which will require a contract for the winter of 2014–2015. 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

The bypass season continues with alternating days of secondary and primary bypass with the switch occurring every morning at 0700 hours. There were no deviations from this schedule. Secondary bypass occurred on September 19, 21, 23 and 25. We bypassed 200 smolts, four juvenile lamprey and 59,896 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 three problems in the gatewell slots. On September 20, we noted the stored ESBS in slot 11C was leaking oil into the slot. The oil is a synthetic. However, we closed the orifice and remove the oil from the slot with absorbent pads and cleaned the area around the slot. Mechanic will repair the gearbox. On September 23, we removed an ESBS rope from the orifice intake in slot 7A slot and a toilet seat from slot 7B.

ESBSs/VBSs: ESBSs are deployed 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 September 20, the breaker for the ESBS in slot 1A tripped a breaker and was reset by the operators. On September 23, we performed camera inspections in units 7, 8 and 10. No problems were found. VBS differential monitoring revealed no screens out of criteria. On September 19, 23 and 24, the project cleaned 15 screens as a preventative measure. We observed no lamprey or ESA lisited fish mortalities in the gatewell slots during the ESBS and VBS inspections. 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 in adjacent slots. From September 20 to 27, the orifice in slot 11C was closed due to the oil leak mentioned above. A spare orifice was opened at slot 11B. As mentioned above, on September 23, an ESBS rope was in the intake of the orifice at slot 7A. No fish were harmed. All systems functioned well in automatic mode. The transition screen cleaning device will remain out of service until winter.

Bypass Facility: There are no problems to report for the week as all systems functioned normally. The last sample day will be September 29. On September 30, at 0700 hours, the system will be switch to primary bypass for the fall season. During the remainder of the bypass season, we will continue to turn the sample gates on and off every other day to be on with secondary bypass. The primary PIT tag system will remain off as the bypass lines provide a better route for the fish than the PIT lines. The secondary PIT/bypass gates will remain off and open for bypass. This week, we continued removal of the direct barge loading lines. We found much of the PVC piping to be brittle.

River Conditions

River conditions during the week are outlined in Table 2 as provided by the smolt monitoring staff, whose data day runs from 0700 to 0700 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
110.0	70.1	0.0	0.0	67.8	66.6	6.0	6.0

*Control Room Data

Other

Inline Cooling Water Strainers: The next strainer examination will occur on September 30.

Invasive Species: The zebra mussel station examination on September 21 revealed no problems. On September 22, the Oregon ladder monitoring station was replaced.

Avian Activity: Bird counts continue with each zone being counted by the fisheries staff once a day, usually in the morning. Counts are reflected in Table 3 below.

We continue to examine, monitor temperature and add oil to the outfall water cannon's 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 monitors and adjusts all hazing equipment 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 affected by the juvenile shad out migration. In the forebay area, we observed an occasional gull. We observed gulls and cormorants on the rock by the Washington boat dock. On project an occasional grebe or tern was observed.

Table 3. McNary Project's Daily Avian Count.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Sep 19	Forebay	1	0	0	0	0
	Spill	16	15	0	0	0
	Powerhouse	4	0	0	0	0
	Outfall	0	3	0	0	0
Sep 20	Forebay	0	0	0	0	0
	Spill	23	33	0	0	0
	Powerhouse	91	1	0	0	0
	Outfall	0	2	0	0	0
Sep 21	Forebay	1	0	0	0	0
	Spill	12	55	0	0	0
	Powerhouse	31	1	0	0	0
	Outfall	2	11	0	0	0
Sep 22	Forebay	0	0	0	0	0
	Spill	5	27	0	0	0
	Powerhouse	31	0	0	0	0
	Outfall	1	9	0	0	0
Sep 23	Forebay	2	0	0	0	0
	Spill	8	32	0	0	0
	Powerhouse	28	0	0	0	0
	Outfall	5	9	0	0	0
Sep 24	Forebay	0	0	0	0	0
	Spill	141	68	0	0	0
	Powerhouse	61	1	0	0	0
	Outfall	1	1	0	0	0
Sep 25	Forebay	2	0	0	0	0
	Spill	15	10	0	0	0
	Powerhouse	107	1	0	0	0
	Outfall	0	4	1	0	0

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.

Project: Ice Harbor
Biologist: Ken Fone
Dates: September 19 - 25, 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 removed from service on September 9 at 0800 hours for annual maintenance. Units were taken out of service one at a time for STS inspections on September 22 and 24.

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 22, 23, 24, and 25.

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 down 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 and head gate slots 2C during this reporting period. Oil socks were placed in the slots to absorb the oil.

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 19 to 22 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 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 and are constructing a work access platform from the north powerhouse deck to spill bay 2.

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
28.4	10.3	0	0	67	66	8.9	8.3

*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 13 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 this week.

Project: Lower Monumental
Biologists: Bill Spurgeon and Ray Addis
Dates: September 19 - 25, 2014

Turbine Operation

The units are being operated within the hard 1% operational constraint criteria. Unit 2 went out of service on September 25 from 1034 to 1051 hours because of an exciter issue. Unit 3 was out of service from September 19 through September 23 for an oil pressure issue. Unit 6 remains out of service for overhaul.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and PSMFC/State biologists on September 19, 20, 21 and 24.

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 out of depth criteria (criteria: ≥ 8' or on sill) on September 20 inspection at 7.3 feet. Operator adjusted weir gates to bring it back into criteria. 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 7.3', 6.3', 6.5', and 6.0 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 8.2', 7.3', 7.6' and 7.2 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 being programmed. 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 satisfactorily throughout this period.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 37 square yards of forebay debris observed during this period. Gatewell debris ranged from 0 - 5% 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 are being 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.

Transport Summary: Alternate day trucking is in progress.

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
25.2	12.2	0.0	0.0	66.5	64.0	4.5	4.0

*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
September 19	1130	1	0	0
September 20	1200	0	3	0
September 21	1200	0	4	0
September 22	1200	2	3	0
September 23	1200	0	1	0
September 24	1200	0	23	0
September 25	1100	0	2	0

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

Project: Little Goose
Biologists: Rick Weis and James Brandon
Dates: September 19 - 25, 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 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. All available turbine units were operated within 1% peak efficiency range.

Adult Fish Passage Facility

Adult fishway inspections were performed on September 21, 22 and 25.

Fish Ladder: Ladder exit differentials ranged between 0.0 and 0.1 ft. (criteria $\leq$ 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 $\leq$ 0.3 ft.). No debris was observed at the picketed leads or at 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 1.1 and 1.8 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 7.2 and 8.3 feet (criteria $\geq$ 8.0 ft). NPE weirs rested on sill and depths ranged between 5.6 and 6.8 feet (criteria $\geq$7.0 ft). NSE weirs are in manual mode and depths ranged between 5.1 and 6.8 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity near north shore entrance ranged between 2.2 and 2.8 fps (criteria 1.5 to 4.0 fps). North powerhouse surface water velocity measured between 1.7 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 100 sq ft.

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

ESBS/VBS: Unit 1 and 2 drawdown measurements were completed on September 24. Both units met criteria. On September 25 the monthly ESBS tests were performed. Unit 2 brushes were found inoperative. Electricians immediately fixed the problem and all the screens are functioning as designed.

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

Transportation Facility: The collection and transportation facility operated within criteria this report period. Daily fish collection ranged between 15 and 41 and totaled 178 for the week. The descaling and mortality rates were 2.3% and 5.3% 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
21.7	13.1	0	0	66.0	64.4	6.0	5.3

*Ladder temperature.

Other

Inline Cooling Water Strainers: Cooling water strainers were checked September 21. 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. Maximum Daily Avian Counts (single observation) at Little Goose Dam.

Date	Time	Gulls	Cormorants	Caspian Terns	Pelicans
September 19	1330	19	11	0	0
September 20	1600	19	18	0	0
September 21	1130	18	15	0	0
September 22	1300	31	9	0	0
September 23	800	18	21	0	0
September 24	1600	21	10	0	0
September 25	1000	29	11	0	0

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

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

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: September 19 - 25, 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 the liner is being investigated. The expected return to service date for unit 5 is October 24. On September 24 at 0453 hours, the Lower Granite Powerhouse tripped offline due to a DC ground at a T1 - C phase temperature safety relay. All turbine units were out of service until 1715 hours the same day.

Adult Fish Passage Facility

The fish ladder was inspected by Corps/PSMFC biologists on September 19, 20, 21 and 23. A fifth inspection was conducted by PSMFC biologists on September 24 during the powerhouse/AWS outage and will be covered separately in the Other section below. Visual adult fish counts are scheduled to continue through October 31.

Fish Ladder: Except on September 24, 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 were 4.6', 4.9', 4.9' and 5.1' feet. NSE2 was out of criteria on all inspections with depth readings of 4.9', 5.5', 5.8' and 6.6' feet. North shore channel/tailwater head was out of criteria (criteria 1'-2') on all but one inspection. The head differential readings were 0.7', 0.9',1.0' and 0.5 feet repectively. 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 was out of criteria (criteria 1'-2') on one inspection with a reading of 0.9' feet.

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 1.5-4.0fps) on all inspections. The daily average channel velocity readings were 1.0, 1.1, 1.1 and 1.1 feet per second. 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 reading was 1.7 fps and south shore channel readings were 2.0 and 1.1 fps.

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

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 3 hours. Debris levels remained light during the week.

Collection Facility: The collection facility is operating at a 100% sample rate.

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

River Conditions

River conditions during the week are outlined in Table 1. Summer spill operations ended at 0001 hours on September 1. See below for description of an unusual spill which took place this week.

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
21.5	13.9	6.6	0.0	63.5	62.2	4.6	3.3

*Cooling water intake temperature.

Other

Special Spill: On September 24 spill became necessary due an unexpected powerhouse outage. Spill to pass inflow of 11.5 Kcfs began at 0548 hours per the BPA's request with a spill pattern

of gates 4-8 open at 1, 1, 1, 2, and 2 stops, respectively. At 1345 hours the powerhouse operator changed the spill pattern to that listed in the Lower Granite Spill Patterns for Fish Passage with No RSW (FPP Table LGW-9) to improve fish ladder attraction conditions without passing adult fish over the RSW.

Fishway Conditions During the September 24 Powerhouse Outage: Spill operations with no powerhouse discharge and no fish ladder auxiliary water supply system pumps in service created unfavorable adult fish ladder attraction flows on September 24. The lower ladder channel/tailwater differentials were out of criteria (criteria 1 - 2 feet) at all entrances. Differentials measured 0.2 feet at the SSE, 0.0 feet at the NPE, and 0.1 feet at the NSE. SSE weirs were within depth criteria, NPE weirs were within sill criteria, and NSE weirs were out of criteria with depth readings of 4.7 and 4.5 feet.

Inline Cooling Water Strainers: Unit cooling water strainers were 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 below.

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

Date	Time (hours)	Gulls	Cormorants	Terns
September 19	0720	24	21	0
September 20	0730	30	25	0
September 21	0730	13	17	0
September 22	0730	1	18	0
September 23	0730	8	3	0
September 24	0745	7	23	0
September 25	0745	18	25	0

Adult Fish Trap Operations: The adult fish trap facility was in 24 hours operation at a 10% sample rate. Collection of fall adult Chinook for truck transportation to Lyons Ferry Hatchery and for the Nez Perce Hatchery at Cherry Lane continued. Nez Perce personnel are transporting on Sundays and Mondays and Lyons Ferry Hatchery personnel are transporting fish Tuesdays through Saturdays.

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