U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#07-2015

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: April 10 - 16, 2015

Turbine Operation

McNary had 13 of 14 units available for power generation. The hard 1 percent constraint continued. No turbine units ran outside the constraint. Turbine unit outages are recorded in Table 1 below.

Table 1. Unit Outages at McNary Project.

Units	Outage Dates	Outage Length	Reason
12	Feb 8 – Oct 9	About 8 months.	Rewind contract.
4 & 5	Apr 10	4.7 & 3.6 hours each.	Semi-annual maintenance & extended-length submersible bar screen (ESBS) installation.
2 & 3	Apr 13	4.7 hours each.	Semi-annual maintenance & ESBS installation.
1	Apr 14	8.2 hours.	Semi-annual maintenance & ESBS installation.
4 & 6	Apr 15	5.1 hours total.	Alternated between the two units being in standby to assist in debris removal.
11	Apr 16	6.3 hours.	ESBS replaced in slot A.

Adult Fish Passage Facilities

The McNary fisheries biologist performed measured inspections of the adult fishways on April 12, 14 and 16. Visual adult fish counts continued.

Fish Ladder Exits: Both ladder exits met all Fish Passage Plan (FPP) criteria. Debris loads in the area of the exits were minimal. The general maintenance staff cleaned the picketed leads as required.

The Washington ladder exit set points were adjusted on April 14. A low water alarm was reset on April 16. A regulating weir alarm was reset at the Oregon ladder exit on April 14.

Fishway Entrances and Collection Channel: All entrance inspection points met criteria. Collection channel surface velocities averaged 1.5 feet per second.

Auxiliary Water Supply System: The Wasco County Public Utility District (PUD) turbine unit in the Washington ladder had no interruptions in service. Two of the three Oregon ladder fish

pumps operated satisfactory with blade angles of 30 degrees. Two interruptions in service occurred. Fish pumps 1 and 3 were out of service from 1259 to 1325 hours on April 11 while a ground issue was resolved in the fish pump house alarm system. The pumps were again out of service from 1551 to 1600 hours on April 13. Further 125 volt ground issues were resolved. Pump 2 is currently under contract for major overhaul. These repairs should be completed by September, 2015. In January 2015, a contractor began replacing the project's potable water system. This should result in improved flow and reliability to the fish pumps cooling water supply.

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 this week. Secondary bypass occurred on April 10, 12, 14 and 16. One hundred and seventy five juvenile lamprey and 13,660 smolts were bypassed.

Forebay Debris/Gatewell Debris/Oil: The forebay debris load was moderate to heavy and centered at the powerhouse until April 15 when the debris was spilled as outlined in Table 2 below. Ninety five percent of the debris was removed. There was minimal incoming debris. No high trash rack differentials were recorded and no trash racks were cleaned. No problems were observed in the gatewell slots including during orifice closures. Several piece of woody debris were removed.

Table 2. April 15 Debris Spill at McNary.

Time (hours)	Step in Process	Reason
0843 to 1500	Units 4 to 8 orifices closed. Spare orifices were opened in units 1 to 3 and 11 to 12. Gatewell slots checked where orifices closed. Juvenile system in primary bypass.	Debris located at these units. Closures avoided orifice blockages. Other orifices were opened to maintain channel elevation. Fish activity checked in slots. Primary bypass prevents debris from entering the juvenile facility.
0952 to 1552	Top spillway weirs (TSW) closed.	Boating safety. Spill volume increased at adjacent gates.
1010 to 1329 1329 to 1542	Bay 18 gate spilt leaf. Bay 16 gate spilt leaf.	Improve debris spillage.
0946 to 1453	Unit 4 or 6 in standby.	Units 2 and 3 were already in standby. Reduce resistance to debris removal.
0900 to 1500	Boats and log boom on water. Four trips from powerhouse to spillway with debris.	The boats encircled the debris and released it in front of the split leaf gate at a safe distance.
1552 to 1818	Spillway returned to automatic operation.	Returned to FPP settings.
Evening	Checked channel.	Insure no orifice blockages.

ESBSs/VBSs: ESBSs were installed at units 1 through 5 on April 10, 13 and 14. All operational units have ESBSs installed. Screens were not installed at unit 12 as this unit is out of service. The ESBS in slot 11A triggered an alarm on April 15 and was reset without incident. This screen subsequently failed and was replaced on April 16.

Rehabilitation of vertical barrier screens (VBSs) continued. No high VBS differentials were recorded and no VBSs were cleaned.

Orifices, Collection Channel, Dewatering Structure, and Bypass Pipe: Forty two orifices were in use, with no issues to report. The fisheries mechanic repaired an orifice actuator air leak at slot 1Athis week. Debris spill orifice operations are described on Table 2 above.

A brief electrical bus switch, on April 13 at approximately 0615 hours, resulted in a power outage of the channel systems. Although all systems were out of service during the outage, there were no serious complications resulting from the shutdown.

The fisheries staff continued to operate the transition screen cleaner on day shift Monday through Thursday.

The powerhouse encountered air supply issues from April 14 to 16. The rectangular screen air burst back up compressor settings were adjusted on April 16.

Bypass Facility: During the bypass season, primary and secondary bypass modes return all fish are to the river. Passive integrated transponder (PIT) tag detection occurs in the full flow pipe during primary bypass and throughout the facility during secondary bypass. Smolt monitoring occurs 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. Pacific State Marine Fish Commission (PSMFC) 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.

A couple of sticks were removed from the “wye” where the “return to river” and the secondary bypass lines meet on April 11 and 12. There appeared to be no fish injured. A debris blockage was removed from the first set of PIT tag detectors in the B-side line downstream of the separator on April 16. There were no fish lost and no fish injuries were observed.

River Conditions

River conditions during the week are outlined in Table 3 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. Routine spring spill in support of fish passage began April 10 at 0001 hours. The TSW in bay 20

opened on April 9 at 2351 hours. The TSW in bay 19 was opened by a crane operator on April 10 at 0700 hours. Forty percent of river flow is spilled in the spring season. The debris spill is described above in Table 2.

Table 3. 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
196.1	151.6	78.7	34.8	48.0	47.7	6.0	5.5

*****Control room data.

Scheduled maintenance occurred on the spill gates. The travel limits on the gates 4 and 11 were adjusted.

Other

Inline Cooling Water Strainers: The next cooling water strainer examination will occur on May 5.

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

Avian Activity: Avian counts are recorded in Table 4 below.

Gulls, cormorants, grebes and ospreys appear to be in the general area in low but increasing numbers. One male loon was observed. Gulls and cormorants are roosting on the rocks by the Washington shore boat dock, which is outside the forebay zone. Grebes are feeding in the forebay. No grebes were observed in the gatewell slots or in the juvenile bypass system.

Cormorants are roosting on the navigation lock wing wall with gulls noted in the tailwater area at the southern edge of the spillway flow. Cormorants and gulls were noted feeding at the juvenile bypass outfall.

Bird hazing distress calls remain deployed around the project and the bird hazing water cannon continues to function without incident. A slight oil leak at the pump was noted, which will be monitored. The sprinkler has been coming on late in the morning. The contractor has been asked to supply the timer operational manual.

United States Department of Agriculture (USDA - APHIS) personnel continue bird hazing at the project, with one shift per day on duty. A second shift and boat hazing will be added April 19.

Table 4. Dailey Avian Counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Apr 10	Forebay	1	0	0	0	0
	Spill	0	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	4	0	0	0
Apr 11	Forebay	0	0	0	0	7
	Spill	10	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	3	0	0	0	0
Apr 12	Forebay	0	0	0	0	0
	Spill	10	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Apr 13	Forebay	0	0	0	0	0
	Spill	31	4	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	2	1	0	0	0
Apr 14	Forebay	1	0	0	0	5
	Spill	81	7	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	14	2	0	0	0
Apr 14	Forebay	0	0	0	0	10
	Spill	10	3	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	2	2	0	0	0
Apr 16	Forebay	0	0	0	0	2
	Spill	3	2	0	0	0
	Powerhouse	1	0	0	0	0
	Outfall	1	2	0	0	0

Research: Gas bubble trauma (GBT) examinations began on April 14.

Project: Ice Harbor
Biologist: Ken Fone
Dates: April 10 - 16, 2015

Turbine Operation

All units were available for service this week. Units were operated within the 1% peak efficiency range (hard constraint).

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on April 13, 14, and 15.

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. 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) depth and channel/tailwater differential were in criteria, except for a depth of 7.9 feet on April 13. The north powerhouse entrance (NFE) depth and channel/tailwater differential were in criteria, except for a depth of 7.3 feet on April 13. This out of criteria depth was the result of the entrance gate control needing calibration with the selsyn (synchronous motor) readout. The north shore entrance (NSE) depth and channel/tailwater differential were in criteria, except for a differential of 3.4 feet on April 15 caused by fluctuating tailwater from spill making it difficult to get an accurate tailwater elevation reading. 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. Six of the eight south shore AWS pumps were operated.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was no debris observed in the forebay. Surface debris coverage in the gatewells ranged from 0% to 5%.

STSs/VBSs: Monthly STS inspections are scheduled for April 21and 23.

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

Juvenile Fish Facility: Fish are being routed through the bypass, except when sampling operations are occurring.

Fish Sampling: Sampling occurred on April 14 and 16. Sampling days will alternate from Monday and Wednesday, to Tuesday and Thursday, each week. Sampling results are outlined in Table 1.

Table 1. Fish condition sampling results at Ice Harbor Dam.

April 14:

Species	Sampled	#Descaled	Mortalities	Avian Marks
C-CH	55	0	0	0
UC-CH	55	0	0	0
C-CH-O	0	---	---	---
UC-CH-O	0	---	---	---
C-SH	8	0	0	0
UC-SH	0	---	---	---
C-COHO	0	---	---	---
UC-COHO	0	---	---	---
C-SOCK	0	---	---	---
UC-SOCK	0	---	---	---
TOTAL	118	0	0	0

April 16:

Species	Sampled	#Descaled	Mortalities	Avian Marks
C-CH	42	0	0	0
UC-CH	40	0	0	0
C-CH-O	0	---	---	---
UC-CH-O	0	---	---	---
C-SH	20	1	0	1
UC-SH	0	---	---	---
C-COHO	0	---	---	---
UC-COHO	0	---	---	---
C-SOCK	0	---	---	---
UC-SOCK	0	---	---	---
TOTAL	102	1	0	1

Removable Spillway Weir (RSW): Mandated spill for fish passage began on April 3. Spillbay 2 was closed from 0751 hours to 1008 hours on April 14, and from 0710 hours to 1420 hours on April 15, in support of fish release pipe removal from the RSW walkway structure.

River Conditions

River conditions during the week are outlined in Table 2 below.

Table 2. 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
48.9	39.1	35.2	12.4	50	49	5.6	4.6

*Unit 1 scrollcase temperature.

Other

Inline Cooling Water Strainers: Monthly turbine cooling water strainer inspections last occurred on March 23, 24, and 26. A total of 85 juvenile lamprey and 1 juvenile shad mortalities were found. The next inspections are scheduled for April 21 and 23.

Invasive Species: No new exotic species have been found.

Avian Activity: Relatively low numbers of piscivorous birds were seen around the project during the week (Table 3). Bird counts were mistakenly not done on April 11 and 16. Contracted hazing of piscivorous birds for 8 hours per day began on April 1, and increased to 16 hours per day on April 12. Additionally, boat-based hazing for 8 hours per day, 3 days per week, began the week of April 12. The hazing program has been effective at keeping the number of foraging birds low.

Table 3. Daily maximum piscivorous bird counts at Ice Harbor Dam

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
April 10	1	19	2	1	15
April 11	---	---	---	---	---
April 12	0	16	0	0	8
April 13	1	20	0	0	3
April 14	15	14	3	0	7
April 15	3	21	0	0	2
April 16	---	---	---	---	---

Research: Hydroaccoustic transducers mounted on the STS frame in gatewell slot 1B, and on trash rack 1B, are collecting data for the turbine intake fish distribution study. The spillbay 2 direct fish injury and survival study occurred from April 7 to April 12, with the release of balloon/radio-tagged fish and sensor fish over spillbay 2.

Project: Lower Monumental
Biologists: Bill Spurgeon and Raymond Addis
Dates: April 10 - 16, 2015

Turbine Operation

The units are being operated within the 1% operational hard constraint criteria. Unit 1 was removed from service on December 10, 2014 for unit rehabilitation with an estimated return to service date of January 12, 2017. Unit 5 was removed from service for headgate cleaning and inspection on April 13 from 1225 to 1510 hours.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Blue Leaf Environmental biologists on April 10, 11, 12, and 15.

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. 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 5.3 to 5.7 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 5.9 to 6.0 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 27.5 square yards of forebay debris observed during this period. Gatewell debris ranged from 0-25% surface coverage. No oil was observed in gatewells.

STSs/VBSs: All STSs are operating in cycle-run mode.

Orifices, Collection Channel, Dewatering Structure, Flume: The collection channel was operated with 18 orifices open with the exception on April 16 (19 orifices). Unit 5 gatewell orifices were closed from 1225 hours on April 13 until April 15 due to headgate cleaning and inspection.

Collection Facility: Every other day, twenty-four hour condition sampling took place on April 12, 14 and 16.

Transport Summary: Fish transport is not occurring at this time.

River Conditions

Routine spring spill in support of fish passage was initiated at 0001 hours on April 3. 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
46.5	38.5	30.6	26.3	50	49	4.8	3.0

*Scrollcase temperatures.

Other

Inline Cooling Water Strainers: Cooling water strainers were inspected on April 8. In all 1 live lamprey was recovered. Mortalities included 26 juvenile lamprey and 1 juvenile steelhead.

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

Avian Activity: Daily tailrace counts of feeding piscivorous birds are summarized in Table 2 below. Gulls were the dominant species observed during inspections this week. Hazing met the standard from the avian action plan through this time period.

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

Date	Time (hours)	Gulls	Cormorants	Terns	Pelicans
April 10	1100	1	0	0	0
April 11	1115	3	0	0	0
April 12	1105	2	0	0	0
April 13	1100	0	0	0	0
April 14	1100	1	0	0	0
April 15	1100	4	0	0	0
April 16	1100	2	1	0	0

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

Project: Little Goose
Biologist: Richard Weis
Dates: April 10 - 16, 2015

Turbine Operation

All turbine units were available for service throughout this report period. Hard 1% peak efficiency constraint criteria are in effect. No violations were seen.

Adult Fish Passage Facility

Adult fishway inspections were performed on April 12 and 16.

Fish Ladder: The ladder exit head differentials ranged between 0.0 and 0.1feet (criteria $\leq$ 0.5 ft.). Water depths over the ladder weirs held steady at 1.2 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials ranged between 0.0 and 0.3 feet (criteria $\leq$ 0.3 ft.). No debris was observed at the picketed leads or in the ladder exit area. 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 2.2 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.0 and 8.8 feet (criteria $\geq$ 8.0 ft). NPE weir depths ranged between 4.7 and 5.5 feet and is on sill (criteria $\geq$7.0 ft. or on sill). NSE weir depths ranged between 5.8 and 6.5 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity measured at the North powerhouse ranged between 1.8 and 1.9 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 2.6 fps.

Auxiliary Water Supply System: Fish pumps 2 and 3 operated as designed. Fish pump 1 is waiting on parts.

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 accumulations in the immediate forebay were estimated between 150 to 200 square feet.

Spillway Weir: The spillway weir was placed back in service April 2 at 1530 in the High Crest position.

ESBS/VBS: ESBSs are all deployed and the gatewells are clean. Drawdown measurements were conducted on April 16. All drawdown tests met criteria.

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

Transportation Facility: The JFF is currently sampling every other day during secondary bypass operations. The facility is in primary bypass mode every other day.

Transport Summary: Fish transport will begin on May 2.

River Conditions

River conditions during the week are outlined in Table 1.

Table 1. River conditions at Little Goose Dam.

Daily Average River Flow (kcfs)		Daily Average Spill (kcfs)		Water Temperature* (^{o}F)		Water Clarity (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
46.2	39.8	13.4	11.4	48.7	48.5	4.8	4.2

*Ladder temperature.

Other

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

Invasive Species: The zebra mussel substrate monitor was inspected on April 2. No zebra mussels were detected. Next inspection is scheduled for May 4.

Avian Activity: Bird counting and hazing resumed on April 01. See Table 2 below for details.

Table 2. Counts of Foraging Piscivorous Birds at Little Goose Dam.

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
April 10	1430	12	5	0	0
April 11	1000	21	25	0	0
April 12	1140	44	37	0	0
April 13	1550	10	11	0	0
April 14	1330	20	6	0	0
April 15	0910	22	9	0	0
April 16	1155	18	18	0	0

Research: No on-site research is in progress at this time.

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: April 10 - 16, 2015

Turbine Operation

Units are operating within the 1% hard constraint criteria. Unit 4 was forced out of service from 1402 hours on April 14 until 1226 hours on April 16 due to an oil sheen noted in slot 4C.

Adult Fish Passage Facility

The adult fishway was inspected by Corps or Blue Leaf Environmental biologists on April 10, 11, 13, 14, and 16.

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.

NPE1 and NPE2 weir gates were in sill criteria (criteria ≥8' or on sill) on all inspections. While on sill, the weir gate depths ranged from 5.0 to 5.5 feet. North powerhouse channel/tailwater head differential was in criteria (criteria 1'-2') on all inspections.

NSE1and NSE2 configurations were changed on April 8. NSE1 was closed and NSE2 was set at 626.0 feet. NSE2 met depth criteria (criteria ≥7' or on sill) on all inspections with the exception of a 6.8 feet depth reading April 13. North shore channel/tailwater head differentials were in criteria (criteria 1'-2') on all inspections with the exception of a 0.9 feet reading April 16. Monitoring will continue.

Collection channel velocities were out of criteria (criteria 1.5-4.0 fps) on all inspections with readings ranging from 0.9 - 1.2 fps with a weekly average of 1.1 fps. Alternative methods of measuring collection channel velocities are being investigated as part of the adult fish ladder control system upgrade.

Auxiliary Water Supply System: The ladder is in two pump operation with AWS pumps 1 and 3 in service. Operation of AWS pump 1 motor in "fast speed" mode trips the overload safety relay during low tailwater conditions. The power house electrical section is investigating the problem. Pump 2 is out of service for lower guide bearing repairs.

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: Forebay debris varied due to wind strength and direction. Gatewell surfaces are being checked on a daily basis and floating debris is being removed with a hand basket to circumvent orifice blockages. A sheen was reported in gatewell 4C on April 14. Oil absorbent pads were deployed in slot 4C and unit 4 was taken out of service. There was no sheen observed in slots 4A and 4B. On April 15, sheen was observed on the surface of the sample holding tank and in raceway 6 at the JFF. Both orifices in gatewell slot 4C were closed from 0730 hours on April 15 through 1235 hours on April 16. No oil was detected when water samples from the holding tank and raceway 6 were tested. The fish screen in slot 4C was pulled on April 15 and replaced with a spare screen. The problem was found to be a leaking screen cleaner motor gear box.

ESBSs/VBSs: The fish screen in slot 4C was pulled on April 15 and replaced due to a screen cleaner motor gear box oil leak. Screen cleaner operation in slot 2C was changed to timer mode at 2250 hours on April 16 due to excess amperage tripping breakers whenever the cleaner operated in transducer mode. The brush cleaning cycle timer is set for every two hours. Video inspections are scheduled for April 24 - 25.

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

Collection Facility: The juvenile facility is operating in secondary bypass mode. Daily collection for condition sampling continues with sample rates based on daily fish numbers. Fish were collected for index barge transport one April 13 and 14.

Transport Summary: A research specific barge departed Lower Granite on April 16. The next barge departure is scheduled for April 23.

River Conditions

River conditions during the week are outlined in Table 1 below. Routine spring spill in support of fish passage is in progress.

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
46.1	42.0	20.3	20.1	48.5	48.0	5.0	4.0

*Cooling water intake temperature.

Other

Inline Cooling Water Strainers: Unit cooling water strainers were last inspected March 26. The next inspections are scheduled for late April.

Invasive Species: The zebra/quagga mussel observation station was last examined April 4. No evidence of zebra/quagga mussels was found.

Avian Activity: Hazing activities began April 1. Piscivorous bird counts began March 26 with observations being 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
April 10	1830	11	0	0
April 11	0715	9	0	0
April 12	1820	41	0	0
April 13	0730	24	0	0
April 14	0730	51	0	0
April 15	0715	31	0	0
April 16	0715	19	0	0

GBT: PSMFC personnel conducted gas bubble trauma examinations April 16.

Adult Fish Trap Operations: The adult fish trap is operating at a sample rate of 11% Monday through Friday with an average weekly sample rate of 8%.

Fish Rescue Operation: No fish rescues occurred this week.

Research

Idaho Fish and Game (IDFG) Genetic Stock Identification: This study aims to enumerate and characterize natural production of yearling Chinook and juvenile steelhead above LGR (Lower Granite Dam) with regards to age composition and genetic stock profiles. IDFG will sample Monday through Friday through mid June with a goal of collecting 2,000-5,000 genetic samples from yearling Chinook and juvenile steelhead.

Nez Perce Tribe (NPT)/U. of Idaho (UI)/Columbia River Intertribal Fisheries Commission (CRITFC) – Kelt Study: NPT began steelhead kelt collection March 29. This research project investigates steelhead kelt physiology and endocrinology to evaluate the feasibility and success of rehabilitating strategies. NPT will transport up to 150 kelts to Dworshak National Fish Hatchery as part of this study.