U.S. ARMY CORPS OF ENGINEERS
WALLA WALLA DISTRICT
FISH FACILITIES WEEKLY REPORT
#06-2015

Project: McNary
Biologists: Carl Dugger and Bobby Johnson
Dates: April 3 - 9, 2015

Turbine Operation

McNary had 13 of 14 units available for power generation. The hard 1 percent constraint criterion continues. No turbine units ran outside the constraint.

Unit outages are recorded in Table 1 below.

Table 1. Unit Outages at McNary Dam.

Units	Outage Dates	Outage Length	Reason
12	Feb 8 – Oct 9	About 8 months.	Rewind contract.
13 & 14	Apr 6	4.5 & 5.0 hours each.	Semi-annual maintenance & extended-length submersible bar screen (ESBS) installation.
10 & 11	Apr 7	4.6 & 5.0 hours each.	Semi-annual maintenance & ESBS installation.
8 & 9	Apr 8	3.6 & 6.0 hours each.	Semi-annual maintenance & ESBS installation.
6	Apr 8	5.4 hours.	Tap the hub.
6 & 7	Apr 9	3.6 & 4.0 hours each.	Semi-annual maintenance & ESBS installation.

Adult Fish Passage Facilities

The McNary fisheries biologist performed measured inspections of the adult fishways on April 5, 7 and 9. Visual adult fish counts continued.

Fish Ladder Exits: Both exits met all Fish Passage Plan criteria. Debris loads in the area of the exits was variable and affected by weather or flow patterns. The general maintenance staff cleaned the picketed leads as required.

The Oregon ladder exit set points were adjusted on April 9.

Fishway Entrances and Collection Channel: All entrance inspection points met criteria.

The Washington ladder pool sensor had variable readings on April 7, which caused the entrance weirs to move excessively. The electrical staff resolved the problem.

Collection channel surface velocities averaged 1.7 feet per second.

Auxiliary Water Supply System: The Washington ladder Wasco County Public Utility District (PUD) unit had no interruptions in service.

Two of the three Oregon ladder fish pumps operated satisfactory with blade angles of 30 degrees. Pump 2 is currently under contract for major overhaul. The repairs should be completed by September, 2015.

The juvenile facility continues 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. The first day of secondary bypass was scheduled for April 6. The biologist found a faulty perforated plate drain valve on April 5. The fisheries mechanics removed a perforated plated section, reinstalled a stop nut on the drain valve, replaced the plate and applied to silicone to the plate edges on April 6. The first day of secondary bypass was moved to April 8.

Twenty juvenile lamprey and 2,605 smolts were bypassed this week.

Forebay Debris/Gatewell Debris/Oil: The forebay debris load was moderate to heavy with a light amount of incoming debris. Most of the debris was centered at the powerhouse. Northeast winds moved some of the debris to the Oregon shore on April 7.

No high trash rack differentials were recorded. No trash racks were cleaned.

We observed no problems in the gatewell slots.

ESBSs/VBSs: ESBSs were installed at units 6 through 14 on April 6 through 9. Screens were not installed at unit 12 as this unit is out of service. The remaining ESBSs will be installed by April 15. A unit 11 ESBS relay was found faulty on April 7. The screens were operated manually. The relay was replaced on April 9.

Vertical barrier screen (VBS) rehabilitations 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 this week, with no issues to report. The fisheries mechanic refilled orifice operator oil reservoirs and replaced orifice attraction light bulbs as needed.

The transition screen cleaner failed on the B beam with the latch pin retracted on April 6. The biologist parked the cleaner back on the A beam with the latch pin inserted. The cleaner continued to trigger an alarm. The biologist cleared the alarm by retracting the latch pin on April 7. However, the rectangular screen cleaner, which had been functional, would not operate. The transition screen cleaner latch pin was reinserted. The mechanical and electrical staffs adjusted the latch pin limits, returning the cleaner to service on April 8. The fisheries staff will continue to operate the transition cleaner on day shift Monday through Thursday.

The rectangular screen air burst back up compressor appeared to be operating frequently on April 6. The electrical staff adjusted the compressor settings on April 8.

Bypass Facility: The first day of secondary bypass mode began on April 8 at 0700 hours. During the bypass season, both 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 operations. The gates and all operational systems functioned well. The primary PIT tag bypass system remains off. The facility bypass lines provide a superior route for the fish than the PIT tag detector release lines. On April 8, Pacific State Marine Fish Commission (PSMFC) tested and adjusted the PIT tag detection system. The A and B side flume bypass gates remain off and open for secondary bypass.

On April 9, the A-side water supply line diffuser came off while sample crews were crowding fish to the downstream end of the A side sample holding tank. Some fish swam into the supply line. The fisheries staff flushed the supply line, which removed the fish. The smolt monitoring staff crowded the fish to the head of the tank. The fish were netted into buckets and carried to the anesthetic chambers where normal operations resumed.

After fish were removed from both sample tanks, the fisheries staff cleaned the B side tank diffuser screen and installed a new diffuser screen in the A side sample tank.

River Conditions

River conditions during the week are outlined in Table 2 below as provided by the smolt monitor staffs. 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. This week, spill occurred due to river flow in excess of powerhouse capacity.

Table 2. River conditions at McNary Dam.

Daily Average River Flow		Daily Average Spill		Water Temperature*		Water Clarity* (Secchi disk - feet)	
High	Low	High	Low	High	Low	High	Low
244.6	182.0	87.9	29.2	48	47	6.0	6.0

*****Control room data.

Routine spring spill season in support of fish passage will begin April 10 at 0001 hours. The top spillway weir (TSW) in bay 20 was opened on April 9 at 2351 hours. The TSW in bay 19 would not open. A crane operator subsequently opened the TSW in bay 19 on April 10 at 0700 hours.

Other

Inline Cooling Water Strainers: The cooling water strainer examination results for April 7 are recorded in Table 3 below. Two yearling Chinook mortalities (one clipped and one unclipped) were observed. Units 5 and 12 were not examined.

Table 3. Inline Cooling Water Strainer Recoveries at McNary Dam.

Unit	Lamprey Alive	Lamprey Lost	Unit Total
1	1	0	1
2	0	0	0
3	0	0	0
4	0	1	1
6	0	1	1
7	0	2	2
8	0	4	4
9	0	1	1
10	0	0	0
11	0	0	0
13	0	0	0
14	0	4	4
Total	1	13	14

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

Avian Activity: Gulls, cormorants, grebes, terns and ospreys appear to be in the general area in low but increasing numbers. 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. Cormorants are roosting on the navigation lock wing wall with gulls and terns being noted in the tailwater area. Cormorants and gulls were observed feeding at the juvenile bypass outfall.

One grebe entered gatewell slot 8A. This bird subsequently passed to the juvenile collection channel and out the system during a primary bypass day.

Bird hazing distress calls remain deployed around the project and the bird hazing water cannon continues to function without incident. United States Department of Agriculture (USDA) 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.

Avian counts are recorded in Table 4 below.

Table 4. Daily maximum piscivorous bird counts at McNary Dam.

Date	Zone	Gull	Cormorant	Tern	Pelican	Grebe
Apr 3	Forebay	0	0	0	0	6
	Spill	0	0	1	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Apr 4	Forebay	0	0	0	0	4
	Spill	0	0	1	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	2	0	0	0
Apr 5	Forebay	0	0	0	0	2
	Spill	0	1	1	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	4	0	0	0
Apr 6	Forebay	0	0	1	0	15
	Spill	2	10	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	3	0	0	0
Apr 7	Forebay	0	0	0	0	0
	Spill	0	10	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	3	3	0	0	0
Apr 8	Forebay	0	0	0	0	6
	Spill	0	14	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0
Apr 9	Forebay	0	0	0	0	21
	Spill	2	0	0	0	0
	Powerhouse	0	0	0	0	0
	Outfall	0	0	0	0	0

Research: Digital cameras were removed from the TSW prior to the start of spill on April 9. Hydro-acoustic monitoring equipment mounted on the trash racks and TSW will be removed later this year in August when flows drop off and turbines are scheduled for maintenance.

Project: Ice Harbor
Biologist: Ken Fone
Dates: April 3 - 9, 2015

Turbine Operation

Unit 3 was out of service from 1346 hours on July 7, 2014, to 1455 hours on April 2 for a generator electrical grounding problem, annual maintenance, conversion into a fixed-blade unit to remedy an oil leak from the hub, digital governor upgrades, and the replacement of brake seals. Unit 1 was out of service from 0820 hours on April 7 to 1523 hours on April 8 for hydro-acoustic transducer installations on trash racks. Unit 2 was out of service from 0820 hours to 1647 hours on April 7 and from 0811 hours to 1523 hours on April 8 to safely accommodate the divers installing the transducers on 1B trash rack.

Units were operated within the 1% peak efficiency range (hard constraint) beginning April 1.

Adult Fish Passage Facilities

Fish facility personnel inspected the adult fishways on April 6, 7, 8, and 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. 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 on all inspections. The north powerhouse entrance (NFE) depth and channel/tailwater differential were in criteria, except for depths of 7.4 feet, 7.3 feet, and 7.8 feet on April 7, 8, and 9, respectively. These out of criteria depths were the result of the entrance gate control needing further calibration. The north shore entrance (NSE) depth and channel/tailwater differential were in criteria, except for a depth of 4.1 feet and differential of 3.1 feet on April 6 caused by the entrance gate being off of sill in manual control. 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 21, 22, and 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.

Fish Sampling: Sampling operations did not occur this week, because the required Washington State take permit was yet available.

Removable Spillway Weir: Mandated spill for fish passage began on April 3.

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
61.0	46.7	47.4	36.4	49	49	5.4	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 mortalities and 1 juvenile shad mortality were found.

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 1). Bird counts were mistakenly not done on April 4 and 5. Contracted hazing of piscivorous birds for 8 hours per day began on April 1. The hazing program has been effective at keeping the bird numbers low.

Table 2. Daily maximum piscivorous bird counts at Ice Harbor Dam

Date	Gulls	Cormorants	Caspian Terns	Grebes	Pelicans
April 3	2	15	2	0	1
April 4	---	---	---	---	---
April 5	---	---	---	---	---
April 6	0	5	0	0	1
April 7	0	8	0	1	0
April 8	1	10	4	0	0
April 9	1	8	0	0	1

Research: Hydroaccoustic transducers were mounted on the STS frame in gatewell slot 1 B on March 26, and mounted on 1B trash rack on April 7 and 8, in support of the turbine intake fish distribution study. The hydroaccoustic equipment began collecting data on April 8. The spillbay 2 direct fish injury and survival study began on April 7, 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 3 - 9, 2015

Turbine Operation

The units are being operated in hard constraint of the 1% operation 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.

Adult Fish Passage Facility

The adult fishway was inspected by Corps and Blue Leaf Environmental biologists on April 3, 4, 6, 8 and 10.

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 5.4 to 6.6 feet. South powerhouse channel/tailwater head was in criteria (1'-2') on all inspections.

SSE1 weir gate was in sill criteria (criteria: ≥ 8' or on sill) on all inspections. While on sill, gate depth readings ranged from 6.0 to 7.0 feet. SSE2 was in criteria (6' above sill) on all inspections. South shore channel/tailwater head was in criteria (1'-2') on all inspections.

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

Juvenile Fish Passage Facility

Forebay Debris/Gatewell Debris/Oil: There was an average of 98 square yards of forebay debris observed during this period. Gatewell debris surface coverage ranged from 0-25%. No oil was observed in the 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. Debris blockages were observed at orifices 7, 11 and 13 on April 3. JFF

personnel back flushed them to clear obstructions during inspection. Orifice light 17 was found turned off on April 4. The operator promptly corrected the issue.

Collection Facility: Every third day, twenty-four hour condition sampling took place on April 3, 6 and 9. Alternate day condition sampling begins on April 12.

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

River Conditions

River conditions during the week are outlined in Table 1. Spring spill operation was initiated at 0001 hours on April 3.

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
84.1	49.0	28	26	50	48	4.0	1.8

*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. 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 3	1105	0	0	0	0
April 4	1115	1	0	0	0
April 5	1120	0	0	0	0
April 6	1100	0	0	0	0
April 7	1120	0	0	0	0
April 8	1115	0	0	0	0
April 9	1105	0	0	0	0

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

Project: Little Goose
Biologist: Richard Weis
Dates: April 3 - 9, 2015

Turbine Operation

All turbine units were available for service throughout this report period. Units 1 and 2 were not used during the period from 7am to 5pm in support of dive operations and debris removal in front of the trash racks on April 3, 4 and 5. Hard 1% peak efficiency constraint criteria are in effect as of April 1. No violations were seen.

Adult Fish Passage Facility

Adult fishway inspections were performed on April 7, 8 and 9.

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 ranged between 1.2 and 1.3 feet (criteria 1.0-1.3 ft.) and picketed lead head differentials held steady at 0.0 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 1.0 and 2.1 feet (criteria 1.0 to 2.0 ft.). SSE weir depths ranged between 8.0 and 8.6 feet (criteria $\geq$ 8.0 ft). NPE weir depths ranged between 4.3 and 6.0 feet and is on sill (criteria $\geq$7.0 ft. or on sill). NSE weir depths ranged between 5.9 and 6.5 feet (criteria $\geq$ 6.0 ft.). Collection channel surface water velocity measured at the North powerhouse ranged between 1.9 and 2.1 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 2.6fps.

Auxiliary Water Supply System: Fish pumps 2 and 3 operated as designed. Fish pump 1 is waiting on parts. Fish Pump 3 is having problems with the oil overheating and oil leaks.

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 accumulationsin the immediate forebay was estimated between 500 to 800 square feet.

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

ESBS/VBS: ESBSs are all deployed and the gatewells were cleaned. Baseline drawdown tests were conducted on April 8.

Orifices, Collection Channel, Dewatering Structure, and Flume: The juvenile bypass system was placed back into service March 24. There are 21 open orifices.

Transportation Facility: The JFF is currently sampling every other day and is in secondary by-pass.

Transport Summary: Collection for fish transport will begin May 1.

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
57.4	43.3	17.1	12.8	49.5	49.1	4.5	3.8

*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.

Avian Activity: Bird counts and hazing resumed on April 01. See chart below for details.

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

Date	Time (hours)	Gulls	Cormorants	Caspian Terns	Pelicans
April 3	1100	4	12	0	0
April 4	1500	29	38	0	0
April 5	1300	25	78	0	0
April 6	None	0	0	0	0
April 7	1000	4	8	0	0
April 8	1420	15	2	0	0
April 9	1515	11	15	0	0

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

Project: Lower Granite
Biologists: Elizabeth Holdren and Ches Brooks
Dates: April 3 - 9, 2015

Turbine Operation

Units are operating within the hard 1% constrain criteria. Unit 6 was forced out of service from 1215 hours until 1530 hours on April 9 due to a malfunction of the ESBS screen cleaner in slot 6B. The problem was an inoperable drive motor and the ESBS was replaced with a spare.

Adult Fish Passage Facility

The adult fishway was inspected by Corps or Blue Leaf Environmental biologists on everyday of this report week.

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 or sill criteria (criteria ≥8' or on sill) on all inspections. While on sill the weir gate depths were 7.8 feet. 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 4.6 to 5.4 feet. North powerhouse channel/tailwater head differential was in criteria (criteria 1'-2') on all inspections.

NSE1and NSE2 were out of criteria (criteria ≥7' or on sill) on all inspections that occurred before April 8. NSE1 had gate depth readings ranging from 1.3 to 2.2 feet. NSE2 had gate depth readings ranging from 2.4 to 3.3 feet. With the exception of April 5; north shore channel/tailwater head differentials were also out of criteria (criteria 1'-2') on all inspections that occurred before April 8, with differential readings ranging from 0.7 to 0.8 feet. At 0700 hours April 8 NSE1 was closed and NSE2 was lowered to the sill position (625') and the depths were monitored with channel/tailwater differentials in the 0.8' range. At 1000 hours NSE2 was raised with the chain fall hoist to 626' to see if it would improve the head differential. At 1300 hours the head differential was at 1.1'. During the formal fishway inspections that occurred on April 8 and 9, NSE2 weir gate depths were 7.0' and the channel/tailwater head differentials were 1.0'. This operational configuration is scheduled to continue for two weeks at which point it will undergo review.

Collection channel velocity was out of criteria (criteria 1.5-4.0 fps) with readings ranging from 1.0 - 1.1 fps and a weekly average of 1.1 fps. Alternative methods of measuring collection

channel velocity are being investigated for installation 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 slight sheen was noted in gatewell 5C on April 8. Oil absorbent pads were deployed and the sheen dissipated quickly.

ESBSs/VBSs: Other than the problem, noted above, with the fish screen in slot 6B; ESBSs are deployed in all units and have been operating well. The brush cleaning cycle is set for once every two hours. The first video inspections are scheduled for April 24 - 25.

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

Collection Facility: The juvenile collection facility was operated in secondary bypass mode during the week. Daily collection for condition sampling continues. The sample rate is based on daily fish collection.

Transport Summary: No fish transport is occurring at this time. The first research barge departure scheduled for April 9 was cancelled due to the malfunction of a NOAA fish pump. The pump has been repaired and a research barge is scheduled to depart Lower Granite on April 16.

River Conditions

River conditions during the week are outlined in Table 1. Per the 2015 Fish Operations Plan (FOP); normal spring spill of 20 KCFS continued during the 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
59.9	46.8	20.2	20.1	48.0	47.5	4.9	3.9

*Cooling water intake temperature.

Other

Daytime visual counts in the adult fish ladder counting room from 0500 to 2100 hours (DST) began April 1. PSMFC personnel conducted gas bubble trauma examinations April 9.

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 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.

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

Date	Time (hours)	Gulls	Cormorants	Terns
April 3	0730	25	0	0
April 4	0730	28	0	0
April 5	1820	41	0	0
April 6	0730	24	0	0
April 7	0730	51	0	0
April 8	0715	31	0	0
April 9	0715	19	0	0

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 Operations: No fish rescue occurred.

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 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.