

**OFFICIAL MEMO of COORDINATION (MOC) FOR  
NON-ROUTINE OPERATIONS AND MAINTENANCE**

**COORDINATION TITLE-** 17 LGO 18 Stilling Basin Survey

**COORDINATION DATE-** October 11, 2017

**PROJECT-** Little Goose Lock and Dam

**RESPONSE DATE-** October 25, 2017

- 1. Description of problem:** Little Goose Lock and Dam is scheduled to have a stilling basin survey conducted during the week of October 30 through November 5. It is critical that this survey be conducted to determine the current condition of the stilling basin and powerhouse tailrace areas, particularly with the upcoming mandated increased spring spill. The survey information will also be used to validate basin modeling that was conducted at ERDC and for analysis of undermining issues to plan any necessary maintenance.
- 2. Type of outage required:** Stilling basin survey will require a unit to be out of service while work is being conducted in immediately downstream turbine, impacting unit priority (FPP Table LGS-5). The turbine outage will include 1 turbine unit at a time to conduct the survey. We assume that Little Goose will be operating a maximum of 2 units at a time during this time period, unit 2 and 5 will be out of service for maintenance and repairs. Unit priority will only be impacted while work is being conducted near unit 1 if we are only operating 1 unit.

One unit in operation		Two units in operation	
Unit Outage	Unit Operating	Unit Outage	Units Operating
1	3	1	3,4
3	1	3	1, 4
4	1	4	1, 3
6	1	6	1, 3

- 3. Dates of impacts/repairs:** The week of October 30 through November 5.
  - 4. Length of time for repairs:** Unit priority will be impacted during the afternoons of November 1-5, Unit 1 is constrained to be out of service from 12:00 to 17:00.
  - 5. Impact on fish facility operation:** Juvenile fish facility will operate as normal through November 1 when it shuts down for the season.
  - 6. Impact on project operations:** Unit Priority will be impacted on November 1 -5. We are working with the contractor to minimize unit 1 outage times.
  - 7. Analysis of potential impacts to fish:** The stilling basin survey will be conducted after peak adult fish passage. To mitigate the risk to delaying adult passage, the survey crew will conduct work in front of turbine unit 1 during midday hours. The 10-year average daily adult
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fish passage for the week of October 30 consists of 48 chinook and 425 steelhead per day (Figure 1). This year's adult run for both steelhead and fall chinook salmon are less than the 10-year average (Figure 2 and Figure 3), therefore we anticipate lower daily fish passage numbers. The 10-year average smolt index for October 30 and 31 indicates an average of 246 juvenile subyearling fall chinook crossing Little Goose Dam each day. The juvenile fish collection facility will operate in primary bypass beginning on November 1, but the juvenile bypass system will remain in operation.

**8. Final judgement on scale of expected impacts:** Adult fish passage delays are possible, but work will be conducted during midday hours (12-5 PM) when adult passage is low. Juvenile fish passage should not be impacted as the juvenile bypass system will continue to operate with the same number of passageway opportunities.

#### **9. Comments from agencies.**

Trevor Condor, NOAA Fisheries, was contacted by phone 1 November 2017 to request a deviation from the MOC to change Unit priority from Units 1,2 to 6,4 to allow surveys to be conducted in south portion of the tailrace. This was approved, as noted below.

#### **10. Final coordination results.**

Approved

**11. After Action update:** Stilling basin survey was conducted October 31 through November 2 and from November 5 through November 7. The survey was delayed on November 3 and November 4 due to equipment failure. Stilling basin survey required two additional days (November 6, 7), but the extra survey days did not impact unit priority.

Unit priority was impacted outside of the scope of the MOC on November 1 when units 1 and 2 were taken out of service from approximately 14:52 through 15:33 while units 4 and 6 were operated. Flows from the adjacent unit interfered with the survey equipment when the contractor attempted to survey in front of unit 1. The contractor requested unit 2 out of service in conjunction with unit 1 in order to complete their data collection requirements. Little Goose requested a deviation to the MOC to allow unit 1 and 2 outages to support this. This was coordinated through Chris Peery and we were told we could conduct the operation for three afternoons and maintain the constraint of not starting until after 1300 in the vicinity of unit 1. The survey was not successful due to flows from the fish ladder discharge interfering with the equipment and this particular effort in front of unit 1 was not attempted after November 1.

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Figure 1: Adult salmon and steelhead passage, Little Goose Dam 10-year average.

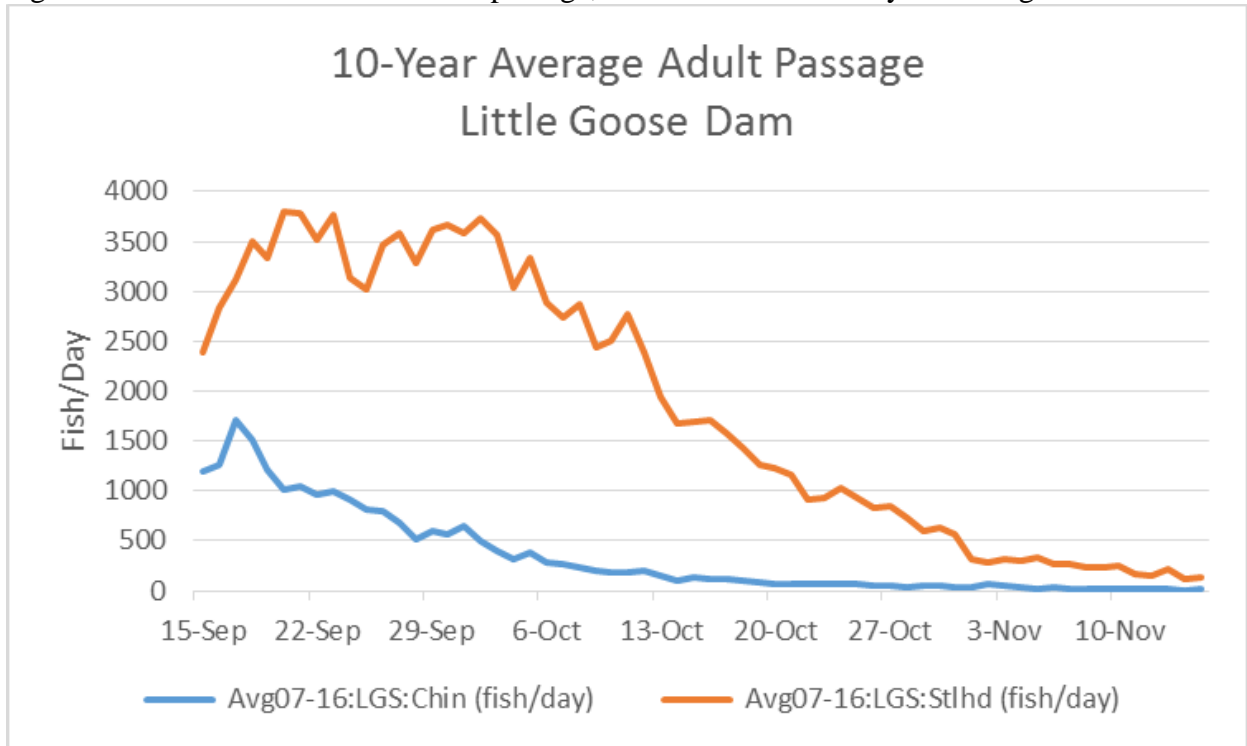


Figure 2: Total adult fall chinook passage through September 19 for the 10-year average, 2016 and 2017.

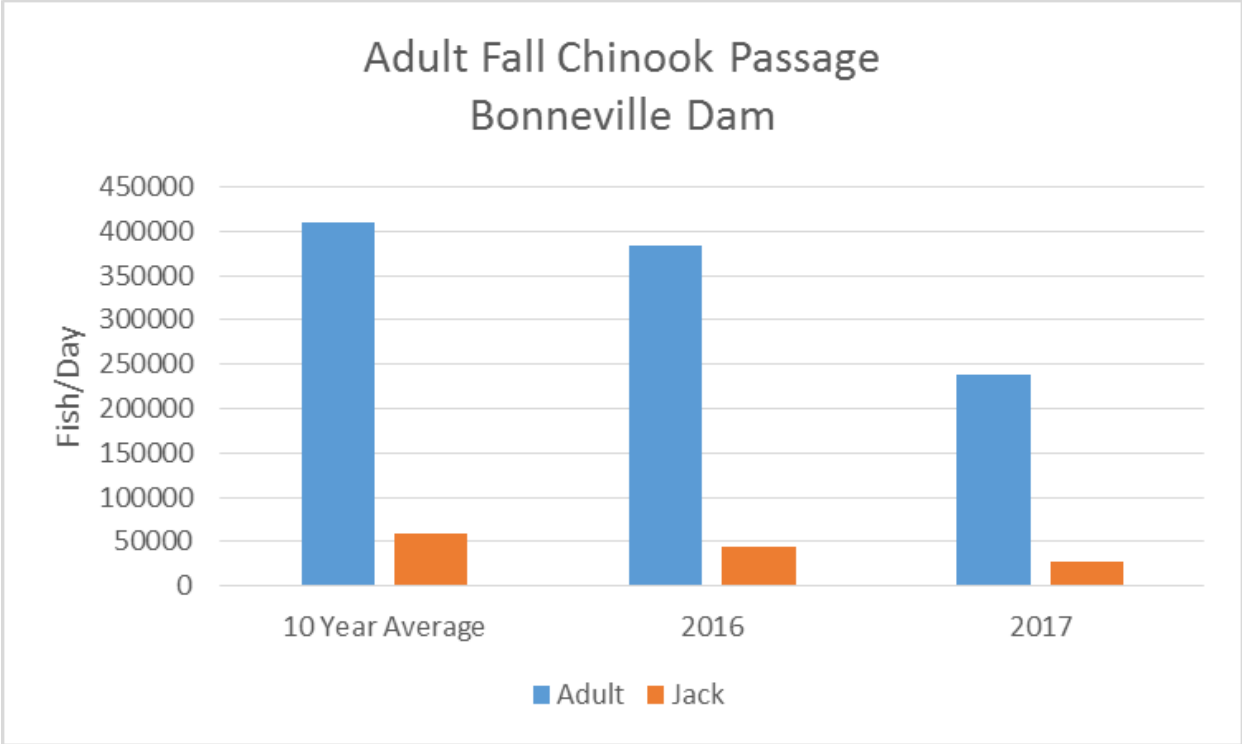
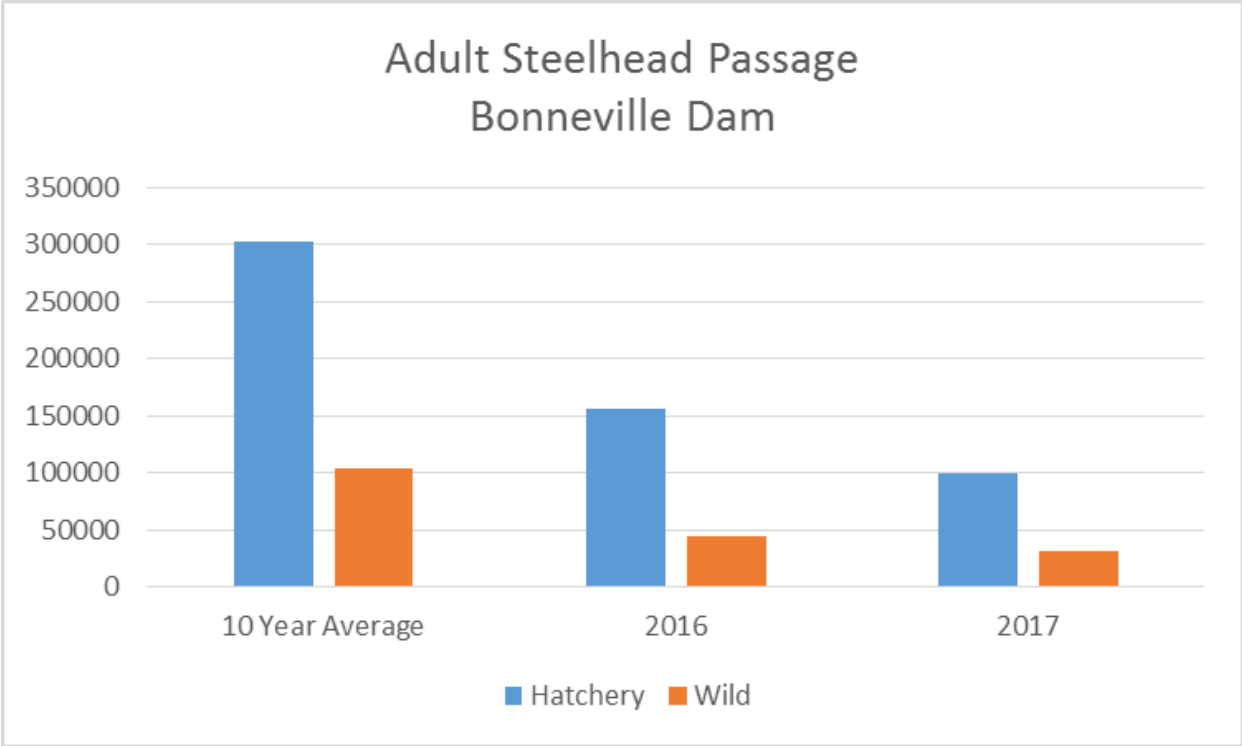


Figure 3: Total adult steelhead passage through September 19 for the 10-year average, 2016 and 2017.



Please email or call with questions or concerns.  
Thank you,

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