

MEMORANDUM FOR THE RECORD

SUBJECT: 15JDA09 MFR – Numerous White Sturgeon (*Acipenser transmontanus*) found / appear to be trapped in the downstream / roller gate slots of 15-A and 15-B.

PROBLEM:

On 2 August 2015 JDA Fisheries observed numerous white sturgeon (*A. transmontanus*) milling around inside the downstream gatewells of MU15. Fisheries notified the Control Room and the unit was immediately shut down. This calmed the trapped fish considerably.

As of 4 August 2015 all fish are alive, in good condition, and in no immediate danger.

It is believed that the sturgeon entered the draft tube from tailrace and then swam up through the open wicket gates into the scroll case while MU15 was OOS for digital governor installation (22 June though 29 July 2015.) Only the head gates were installed for this work (no tail logs were installed) and MU15 was full of water at all times. Also, the MU15 intake trashrack spacing of 6 inches prevents a larger size fish from exiting into the forebay. It is not believed the U15 trash racks have been significantly damaged enough to allow sturgeon to pass in such large numbers. JDA has not had this anomaly in previous digital governor units and they will take a closer look at their processes to insure future success of no fish trapped during this upgrade.

JDA proposes removing as many sturgeon as possible with the dip basket lowered into the slots by a mobile crane (planning is underway.) There are structural differences between the STS slots and Roller Gate slots, which might make it impossible to remove all fish by using the dip basket. At some point, we are planning to use the roller gates to push the remaining sturgeon down and force them go back into the tailrace through a working turbine. This last step involves risk to fish.

Update on 5 August: The GDACS report was pulled by operations and shows no wicket gates opened longer than 10 minutes before they were closed again, so JDA believes that the Digital Gov. folks were doing as was recommended by the fish passage plan (Section 5.2.4).

Update on 10 August: The following is the time sequence of our recent JD attempts to liberate the trapped sturgeon:

1. *Wednesday 8/5 am- attempted to dip basket for a couple of hours; salvaged one mid size sturgeon, which was released into forebay in excellent condition. Discontinued this activity due to difficulties in capturing fish with the dip basket.*
2. *Wednesday 8/5 pm- attempted to flush the trapped fish back into tail race through " speed/ no load" operation of MU 15 (limited flow of approximately 3.8 Kcfs versus 20 Kcfs for a fully loaded turbine) for 30 minutes. Concurrently, roller gates were partly installed / dogged off at slots A & B to push the trapped sturgeon into the turbine flow. Could not immediately evaluate progress of these action due to the roller gates let in dogged off and blocking the view of gate wells' surface.*
3. *Thursday 8/6 through Monday 8/10 am - MU 15 OOS due to an electrical problem, which was resolved on Monday AM.*
4. *Monday 8/10 am- roller gates were removed from slots A & A and MU 15 started up. Two small, 3 feet sturgeon were salvaged from the roller gate shelves and released into forebay in excellent condition. 2 or 3 mid size sturgeon (3-4 feet) remain and are surfacing periodically in slot, A but none are observed at slots B & C.*
5. *In summary, it appears that we have been making progress and flushing with " speed/ no load" has been partially effective. To clarify further, we have not seen any sturgeon morts at MU 15 since the problem was first detected on 8/2 pm. And a total of 4 sturgeon were salvaged and transferred to JD forebay in excellent condition.*

Update from 13 August (FPOM) – 15JDA09 MFR Sturgeon in MU15. Zyndol fielded questions about how sturgeon got into the scroll case and how JDA planned to remove them. MU15 will be dewatered on 14 August and fish will be salvaged. The delay in getting the unit dewatered was due to the lack of available roller gates and getting permission to use the spare/emergency set of tail logs. Currently there have been no mortalities seen. FPOM recommended installing tail logs for future units. Zyndol said MU16 is the next unit that may have this problem. Fredricks suggested keeping the blades flat and using a slow roll on start up. Bettin suggested a tail log sized screen to keep sturgeon out during the governor work.

Update from 14 August -

- MU 15 Forced OOS

- 14 Aug 2015 at 0400

- unit taken OOS to prepare for removal of 34 remaining sturgeon in gate slots. Earlier efforts to remove the sturgeon w/o shutting down the unit were only partially successful.

- operating project personnel looking at measures for preventing fish from entering draft tubes during digital governor commissioning in future - this was an unusual occurrence.

- FPOM provided information along the way concerning efforts to remove the sturgeon - no mortality of fish during this action.

- unit will RTS when headgates and tail logs are removed - possibly today.

- no impact on JDWC assigned generation load as back-up capacity in place and utilized.

- A. Species – Estimated total for both slots is over 40 White Sturgeon (*A. transmontanus*)
- B. Origin – JDA tailrace
- C. Length – Ranging from approximately 45-145cm
- D. Marks and tags – None observed
- E. Marks and Injuries found on carcass – N/A
- F. Cause and Time of Death – All fish are alive in good condition and in no immediate danger
- G. Future and Preventative Measures – Modify the digital governor installation for the future JDA MUs as to keep strict limit of up to 15 minutes when the wicket gates might be open for any electrical/ mechanical testing purposes. And two hours waiting period will be required before another 15 minute opening is allowed.

Sincerely,
JDA Fisheries

Comments:

ODFW:From: Erick VanDyke [erick.s.vandyke@state.or.us]

Sent: Thursday, August 06, 2015 5:40 PM

Subject: RE: FPOM: Official Coordination - MFR 15JDA09 (UNCLASSIFIED)

Hi Tammy and others,

It would be helpful to get a photo prospective of the a MU15 gatwell area. In addition, I suspect there will be bio-information collected from fish successfully removed and returned to the tailrace upon salvage efforts, and estimates of size and number of white sturgeon not salvaged. It probably goes without saying that the “Last Step Option” is not preferred. Overall, the faster sturgeon are removed and released back into the tailrace the better.

Erick Van Dyke

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WDFW: -----Original Message-----

From: Morrill, Charles (DFW) [mailto:Charles.Morrill@dfw.wa.gov]

Sent: Friday, August 07, 2015 10:06 AM

Subject: [EXTERNAL] RE: FPOM: Official Coordination - MFR 15JDA09 (UNCLASSIFIED)

Hi Tammay, et al

I would echo Eric's request that those sturgeon removed be bio-sampled and scanned for tags ...
Charlie

NWP (call to C. Morrill from T. Mackey): estimated numbers of sturgeon removed will be reported but the Project will not be collecting any additional biological data. The nature of the salvage does not allow for detailed sampling to occur.

2015 JDA0815 Weekly Report: MU Gatewell Drawdowns: Differentials are checked Wednesdays and Sundays; all gatewells were in criteria.

Found an estimated 40 adult sturgeon, 3 to 5 feet in length, in roller gate slots A & B of MU 15 on Sunday, 8/2 PM. Attempts to dip basket unsuccessful on 8/5. JD OPS attempted to flush fish back into the draft tube with " speed-no load" , with the roller gates pushing the fish down; unsuccessful on 8/6. MU 15 OOS due to electrical issues 8/5 through 8/10. MU 15 was finally dewatered on 8/14 and all sturgeon were salvaged from its scroll case by transfer back into the draft tube.