

**Biology Committee Conference Call  
May 9, 2007, 1:30 p.m.**

Participants: Kevin Gelwicks, Dave Speas, Tom Chart, Melissa Trammell, Bill Davis, Shane Capron, Tom Blickensderfer, Krissy Wilson, Tom Pitts, Angela Kantola, Trina Hedrick, Kevin Bestgen, Bobby Compton, Craig Walker, Tom Czaplá, Dave Irving, Tim Modde, Chuck McAda, and Bob Muth.

Assignments indicated by a “>” and at the end of the document.

1. Tagging technology – The Committee discussed the pros and cons of using the Program’s current standard full duplex (FDX) 134.2 kHz PIT tag (11.5 x 2.1mm and 0.09g; implanted in the fish body cavity using a hypodermic needle) versus a larger half duplex (HDX) 134.2 kHz PIT tag (23.1 x 9mm and 0.6g; implanted in the body cavity using either a very large hypodermic needle or via incision and suture) for the purpose of tracking stocked razorback sucker exiting the Stirrup floodplain in spring 2008 and 2009. The larger HDX tags can be read at a greater distance (up to ~1.5m, versus ~ 0.6m for the smaller FDX tags), which would be an advantage for the antenna array and stationary PIT tag reader to be constructed at the floodplain outlet. Also, the reader can be further away from the antenna when using HDX tags. To answer the Biology Committee’s question regarding the potential to implant fish with both tags, Bobby Compton said he experimented with reading HDX and FDX tags placed next to each other using a standard, hand-held Program tag reader and an Allflex reader. The Allflex reader has a function to scan both HDX and FDX tags either together or one or the other (3-position toggle switch). Bobby experienced some problems scanning the larger HDX tags on all settings when he placed the HDX and FDX tags side by side. In this configuration, the larger HDX tag was not detected, but the smaller FDX was detected (by either machine). When he rotated the larger HDX tag 90 degrees or moved it 1 cm away from the FDX tag, then the HDX tag was detected. With Allflex reader set to read both tags, the smaller FDX tag was always read first. The standard Program hand-held reader always read the smaller FDX tag when both tags were in any configuration. Tomorrow Bobby will set up an antenna array to conduct further tests (on both the Program’s standard 134.2 FDX tag as well as the old 400 kHz FDX tag). Bobby noted that antennas are stronger than hand-held readers. > Bobby will e-mail the Committee a short description of the experiments he’s conducted after he completes the antenna test tomorrow.

With regard to whether or not surgery/sutures are required for the half duplex tag, Bobby said researchers at UW are going to try surgical staples this year. In the fish implanted for his study, they made a surgical incision instead of a needle punch thinking it would be less invasive; however Bobby thought the actual “surgery” requires only 1-2 minutes to complete. Tim Modde said razorbacks bled considerably when his crew made incisions to implant radio tags, so a needle injection might be better. Dave Irving said Mike Montagne has concerns about surgical insertion. Bobby Compton said he thinks the depth of insertion of the tag would be the most important factor in how safe it will be to

inject the larger tags.

The group discussed the numbers of fish to be tagged; Tom Czapla said we currently have 1,500 age-2 fish to tag, and he would recommend tagging a similar number of age-1 fish in the fall. Craig said the antenna and reader set-up used in the Pacific Northwest (Klamath) costs ~\$4,500. UDWR is installing a system at Utah Lake near Provo now; this installation will be complete June 1. The Committee discussed the potential for ambient electrical interference from the small power line that goes over the Stirrup floodplain. The antenna array equipment won't be released from Utah Lake until September or October, but if they don't experience interference from the larger power lines near Utah Lake, it is unlikely there would be interference from the small power line at Stirrup. Bobby thought that power line might be far enough away that it wouldn't interfere, anyway. Bobby mentioned that the research facility at the University of Wyoming is setting up a test on batteries and two different sizes of solar panel to determine power longevities. Craig said Klamath uses solar power backed up by a battery.

Kevin Gelwicks observed that if the larger HDX tags are \$2-\$3 apiece, then we won't save money using those (with a "homemade" system), but the issue of tag size and read range remain. The Stirrup breach is 20-25 feet across with 3-4' of water depth. The Committee discussed the fact that FDX tags are available in a larger size, as well, and that a larger FDX tag would likely have a greater read range. Tom Czapla suggested tagging the first batch of age-2 fish with our standard 134.2 FDX tags to test the technology UDWR is developing at Utah Lake, then when we tag the age-1 fish in the fall, reconsider whether we need to add the larger HDX tags (after we've seen results of UDWR's work at Utah Lake). Melissa suggested the opposite approach might also work, but the Committee decided to go with Tom Czapla's proposal. Tom Czapla said he thinks we can construct some sort of weir at the Stirrup outlet to keep the fish within 2' of the antenna; the Committee supported that idea if it can be done without deterring fish emigration through the outlet.

2. SOW for razorback recruitment emigration from the Stirrup floodplain - Trina Hedrick outlined this 2-year scope of work. The Committee discussed pros and cons of Task 1 and agreed it should be taken out. Trina addressed questions submitted by Bill Davis and agreed to add a day or two to sample over-winter water quality (perhaps in January and February). UDWR will need a HydroLab, which Trina will try to find without having to purchase a new one. >Shane Capron will see if Western will provide the HydroLab (and also whether they will be doing aerial photography or any other study this spring). The Committee discussed whether it would be better for UDWR to pump the water, hire a contractor, or seek to borrow the ONWR pump for this study; >Trina will check into this. With regard to the water right, apparently only a temporary permit is needed and will be simple to obtain. The scope will show a range of costs for the PIT tag array (using the current FDX system or adding HDX tags). >Trina will revise the scope of work and re-distribute it to the Committee within a week, and then Committee members will have 1 week from that date to submit any additional comments. If no comments are received, the SOW will stand approved. The initiation of a razorback sucker / bonytail acclimation experiment (discussed to occur at Baeser Bend) was postponed due to a

short supply of razorback sucker larvae available for experimental purposes this year and more time needed to prepare the floodplain site (eg. modification of levee breach and establish a pumping location). >The PD's office directed Tim Modde to develop a SOW to cover acclimation site preparation.

3. Green River flows – Tom Chart said Rick Clayton believes Reclamation will begin ramping up releases this Saturday and reach full power plant capacity on Monday. The flows will reach Jensen on Tuesday, peak on Tuesday or Wednesday at 10,000 – 12,000 cfs. To meet the moderately dry year spring flow objective identified in the Flaming Gorge Record of Decision and Biological Opinion, Reclamation will operate releases to maintain 8,300 cfs or greater at Jensen for 7 days. Reclamation will consider extending full power plant releases (~4500 cfs) beyond the 7 day duration target if there are larvae in the system and if doing so would maintain sufficient floodplain connection (as determined by Recovery Program field crews).

ADJOURN: 3:00 p.m.

#### ASSIGNMENTS

1. Bobby Compton will e-mail the Committee a short description of the experiments he's conducted after he completes the antenna test on May 10.
2. Shane Capron will see if Western can provide a HydroLab for the Stirrup study (and also whether Western plans to do any aerial photography or other study this spring).
3. Trina Hedrick will check into whether it would be better for UDWR to pump the water, hire a contractor, or seek to borrow the ONWR pump for the Stirrup study. Trina will revise the Stirrup scope of work and re-distribute it to the Committee within a week, and then Committee members will have 1 week from that date to submit any additional comments. If no comments are received, the SOW will stand approved.
4. Tim Modde will develop a SOW to cover acclimation site preparation for Baeser Bend.