Upper Colorado River
Endangered Fish Recovery Program

Dated: September 8, 2014

September 8, 2014, Water Acquisition Committee Conference Call Summary

Participants: Brent Uilenberg, Michelle Garrison, Kirk LaGory, James Greer, Tom Pitts, Erik Knight, Jana Mohrman, Tom Chart, Melissa Trammell, Robert Wigington, Toby Minear, Ray Tenney, Andrew Gilmore, and Angela Kantola.

Assignments are indicated in the document in bold, preceded by a ">.

CONVENE 1:00 p.m.

1. Introductions, review/modify agenda

2. Review 4/15/14 meeting summary – The summary was accepted as written.

3. Overview of 2014 hydrological conditions – Jana reviewed Upper Basin hydrologic conditions in this wet 2014 water year (see graphs in Attachment 1 *Jana to attach graphs.*) Jana noted that 2014 was the first year that the Aspinall ROD was fully implemented, and it was classified as moderately wet. Gunnison tributary flows were just average, flows from the Aspinall Unit made up the rest. Jana said field conditions she observed indicated the cobbles moved as predicted. Flaming Gorge releases provided four days above 18,000 cfs after larvae were detected in the Green River. Jana showed July and August monthly average base flows compared to targets, all exceeded the targets.

4. Geomorphology Peak Flow Study Plan – Jana describe the history of this plan and the different peak flow interpretations by Pitlick and Williams. (Tom Chart e-mailed a chronology of the development of this plan on August 29.) The four high-priority topics of the proposed study are: (1) peak flows needed to maintain the connection of floodplain wetlands to the main channel; (2) peak flows needed to prevent channel narrowing; (3) peak flows needed to maintain spawning habitats and other gravel and cobble-bed benthic habitats; and (4) peak flows needed to build and maintain connected backwater habitats.

   In response to a question from Melissa Trammell, Kirk LaGory said Table 4 is a little confusing, but the plan would be to have a fine-sediment monitoring gage upstream and downstream of the most critical reaches to get a sense of input and output and determine mass balance. The Green River work also looks at connected backwaters (not a priority for the Gunnison River). Robert Wigington asked about the distinction between floodplain wetland connection and connected backwater. Kirk said connected backwaters are in-channel habitats that form behind sandbars and are used by Colorado pikeminnow. Tom Chart noted the Management Committee had questions about how this study fits with the Green and Aspinall study plans. Kirk said he thinks they fit nicely together, but we need to better describe the objectives in this plan. This peak flow plan will look at the Green River and Aspinall study plans, information gathered on peak flow relationships, and then identify data gaps so we can reduce uncertainties and better identify peak flow needs for the fish and their habitat. Table 4 identifies several high priorities, with the far right column showing those which have been or are being addressed, versus those that still need to be addressed. Andrew asked about the middle Colorado River reach priority in Table 4 and if we're expecting we can get higher peak

flows than currently recommended; Kirk said this reach would be part of the network where they propose to look at sediment mass balance. Melissa asked Tom Pitts about his concerns and he said that he thinks they'll be addressed in the next draft of this study plan with clarification of the objectives and relationship to the Aspinall and Green River plans. Tom Chart said this plan is best viewed as a technical supplement to the Aspinall and Green River plans. Comments were due October 1, but >the group that drafted the plan will provide a revised draft by *?* and then establish a new date for comments.

a. Gunnison River hydrophones – Toby Minear of USGS said they couldn't conduct their hydrophones work on the San Joaquin this year due to drought, so with assistance for travel costs from the Program; they were able to arrange three trips to the Gunnison River, instead. An important question for the Gunnison is at what discharge bedload transport begins, particularly for gravel and larger grain sizes? Toby described limitations of traditional bedload sampling. Calculated transport from rating curves can be significantly different from actual bedload. Hydrophones are a "surrogate technology" to improve temporal resolution for sediment mobilization, but they don't provide sediment characteristics. Hydrophones can provide hi-resolution bedload data, and then the acoustic intensity can be correlated to bedload samples. They studied RM 29-42 in the Gunnison River, which has important Colorado pikeminnow habitat related to hi-flow events (gravel islands, ripples, and side channels). They used two in-situ hydrophone sites (over about a one-month period month in June and July) and experimental longitudinal floats with mobile hydrophones on three different days. They would have liked to have captured more of the rising limb of the hydrograph. Toby noted the hysteresis effect they saw, which is typically related to supply limitation. Even at relatively low flows, the data indicate riffles were being re-worked once the bed was mobilized. Toby said he's still working to combine the data and GPS to estimate bed shear stress. Toby thinks both the mobile and in-situ hydrophones offer a useful technique for the Program, though it would be helpful to also calibrate them with actual bedload sampling. The in situ method provides better temporal resolution, but mobile hydrophones provide more reach-scale information. The costs are pretty reasonable compared to actual bedload sampling. A short report on this work is forthcoming. Jana added that the results appear to indicate that initial bed mobilization at ~ 6,900 to 9,500 cfs and significant transport at >13,300 cfs (per Pitlick, 1999), as opposed to no gravels below13,300 cfs (Williams). Jana discussed possible future study plans; Toby said they can do a 5-year contract with agreement to work in the best 3 of the 5 years in order to capture the best hydrologic conditions. Tom Chart thanked Toby, Mathieu, and Jana for pulling this together.

5. White River SOW for Management Plan – Michelle Garrison reviewed the proposed revised schedule, which reflects that we've not yet contracted with a consultant. CWCB has begun the contracting process, but are still refining the SOW (and will share that with the Water Acquisition Committee). Colorado will invite some Program participants to be on the evaluation team. We'll consider the proposed revised schedule a draft to be finalized once the consultant is on board.

6. Upper Basin Drought Management Plan – Michelle explained that the Secretary of the Interior asked the Basin States to develop drought contingency plans in light of the continued drought in 2012 and 2013. The Lower Basin plan will focus on a plan to reduce demand. Upper Basin States have been working with USBR's big CRSS model to determine what would be required to maintain minimum power pool in Lake Powell. The simplest method is to release water from Flaming

Gorge, Aspinall, and/or Navajo reservoirs. Using the 1988-2007 period of record, the southern portions are exceptionally dry, the northern portions less so; therefore, initial results suggested Flaming Gorge could most likely contribute, with Aspinall and Navajo less likely (depending on hydrology). Under discussion are: 1) what types of releases would be made (e.g. maximum flow target for that year category or up one or two categories [the latter already is allowed in the Flaming Gorge ROD]) and how those releases would relate to the ROD(s); and 2) how to recover storage in the reservoirs that made the releases and how that recovery would that relate to the ROD(s). Reclamation is doing more detailed modeling using CRSS and will then look at individual reservoir models (results will be shared with the Recovery Program). They hope to have enough information by December to let the Secretary know what they think would work. More long-term planning for a continued drought scenario would include flow augmentation through cloud seeding, tamarisk removal, and Upper Basin demand management.

7. GRUWAT next steps – James Greer said the model has been developed; model runs are done and are being analyzed. James scheduling another GRUWAT team meeting in the next month to report on model results and analysis. Then they will present the information to UDNR to look at potential methods and criteria for flow protection. Jana asked if we could invite interested and available Water Acquisition Committee members to participate (once the GRUWAT meeting is set); James agreed.

8. Draft SOW to evaluate flow and temperature recommendations in the Green River – Tom Chart said this circles back to the Green River Study Plan which identified 3 major areas of research (floodplain, backwater, nonnative fishes), and called for this evaluation once that research was completed. With the synthesis reports all or nearly complete, it's time to go back and evaluate the flow and temperature recommendations themselves, which is what this SOW would accomplish. It would be an 18-month effort with Kirk LaGory and Kevin Bestgen working on it ~25% of the time at a total of ~$260K (WAPA willing to cover ~50%). Thus, Program annual funds cost would be ~$130K over 18 months. Some of the work could begin now; some would need to wait for results of the backwater synthesis (not yet complete). The objectives are to provide an overall evaluation and status assessment of the Green River flow and temperature recommendations based on operational, biological, and physical information collected from 2006 through summer 2014. The end product will be a report that summarizes the review and provides the Recovery Program clear recommended revisions of Muth et al (2000) should this evaluation suggest it is warranted. Andrew asked if additional NEPA would be triggered if the outcome was to change flow recommendations; Tom Chart said that would be Reclamation's call.

9. CFOPS – Tom Pitts said he has input from water users on the draft he sent out last April and is incorporating that in a revised draft he'll provide to the water users and Water Acquisition Committee soon. If substantive additional work is required, the water users may recommend hiring someone (via Section 7 funds). The next draft will identify the Service's "fish pools" and which ones are subject to exchange (base to peak flows), and that will need to have State Engineer review to determine what is legal.

10. Capital projects update – Brent Uilenberg said the focus this year has been on the OMID canal automation project, Phase 2 (regulating reservoir). The contract should be awarded by the end of this month, and then hopefully the reservoir will be completed mid to late summer next year. To finish a Tusher Wash screen design, they need monitoring data back from similar work at the

Hogback Diversion, but data collection has been delayed by electrical interference with the PIT tag readers. We also need to whether to augment the proposed fish weir with an electronic fish barrier, and Smith-Root likely will conduct the lab research on this. Realistically, the data should be available sometime in 2015, with a possible contract award in 2016.

11. Schedule next meeting, webinar, or conference call – Jana suggested another call/webinar in ~ 3 months when we have news on the White River contract, GRUWAT, CFOPs, and hydrophones. Jana will send out a Doodle poll at the appropriate time.

ADJOURN 3*:15* p.m.

Attachment 1

Jana, here's how to pull your slides in from Powerpoint:

1. In PP, select all, then copy

2. In Word, paste special>.jpg. Then re-size and change layout to "tight."