Upper Colorado River
Endangered Fish Recovery Program

Dated: December 8, 2020

Biology Committee Webinar Summary

Tuesday, December 8, 2020 9:00 am – 2:00 pm MDT

BC Members: Dave Speas, Melissa Trammell, Dale Ryden, Paul Badame, Tom Pitts, Pete Cavalli, Harry Crockett, Derek Fryer

Participants: Tildon Jones, Jojo La, Kevin Bestgen, Kevin McAbee, Don Anderson, Tom Chart, Julie Stahli, Darek Elverud, Rich Valdez, Keena Elbin, Bart Leeflang, Brian Hines, Leslie James, Katie Creighton, Colleen Cunningham, Matt Fry, Chris Smith, John Caldwell, Zach Ahrens, Craig Ellsworth

Comments incorporated from Don Anderson, Harry Crockett and Melissa Trammell

CONVENED: 9:00 a.m.

1. Review and modify agenda – Dave Speas welcomed all participants to the meeting and thanked everyone for coming. He noted the agenda may run the full time this morning and said that Don Anderson requested additional time for the White River discussion.

2. Welcome 2021 BC Chair – Dave thanked Derek Fryer for being willing to serve as BC chair in 2021. The Committee elected Paul Badame as vice-chair for 2021 who will serve as BC chair in 2022

   BC Chair Schedule
   2012 CPW Harry Crockett
   2013 WAPA Jerry Wilhite
   2014 BOR Dave Speas
   2015 UDWR Krissy Wilson
   2016 WYGF Pete Cavalli
   2017 FWS Dale Ryden
   2018 NPS Melissa Trammell
   2019 CPW Harry Crockett
   2020 BOR Dave Speas
   2021 WAPA Derek Fryer
   2022 UDWR Paul Badame

3. Westwater Humpback Chub Population Monitoring Report – Kevin McAbee introduced the report and confirmed that the PDO is seeking approval of this report at this meeting. Brian Hines noted that the peer reviewers for the report included Rich Valdez, Randy Van Haverbeke and Bob Schelly. Brian said Rich recommended simplifying some of the discussion around the modeling results to make them clearer to a more general public. In addition, he raised some questions about the

differences between objectives in the RIPRAP and the scope of work for this project. Brian is planning to add in flow information to future versions of this report to address Rich's concerns. Brian also analyzed the relationship between abundance and CPUE and the results were significant. Bob Schelly provided mostly editorial comments that added clarification to the paper. In the next report, Brian will try to incorporate information about how the Aspinall Unit management affects the population. Randy's comments were more humpback chub specific. He requested the number of recaptures per trip be added to the report. Brian will add that into the next version as well. Brian asked the BC for their opinions on comparing habitat to population estimates in this report. He noted the difficulty of adding transects or other measurements into the sampling that currently occurs.

Brian reviewed the conclusions in the report, including increases in abundance, increases in model precision, and high numbers of juveniles. The trammel nets provided most of the adult captures. He noted the hoop nets were added to the sampling, which were very effective at catching juvenile fish. Antennas were also used to increase recaptures and added a lot of data to the models. Brian reviewed the recommendations presented in the report. He recommends continuing the robust design models because of their strong statistical power. He recommends implementing a separate process to target early life stages. He noted the importance of continuing to use antennas to increase capture probabilities and precision. Brian is considering baiting the antennas to encourage more detections. Brian also noted that Grand Canyon monitoring uses only hoop nets for sampling humpback chub, but he was reluctant to make a complete switch based on the dynamics of the upper basin. Kevin Bestgen agreed that the data they are getting using current methods are great and recommended that they continue using current methods. He noted that investigating those younger life stages would be valuable, especially to determine how invasive species may be impacting these populations. Paul Badame said the main problem in this population is tracking juvenile chubs through time, he asked if it was important to track those fish through time, and if so, if adding in new methods was recommended. Brian thought it was an important thing to measure to document how reproduction is affecting the population, but that they were so overwhelmed with fish that they may not be able to add more nets without losing effort somewhere else (e.g. not working up roundtail chub). Rich Valdez noted that hoop nets may not be as successful as other methods to target smaller fish. He recommended setting sets of minnow traps to target younger fish. Rich noted a relationship between flow and juveniles/adult ratio but noted that there is a 2-4 year delay in the relationship. Dave Speas thanked Brian for the well-written report and supported the incorporation of Aspinall Unit flows into the analysis. Dale said a report from Black Rocks is due out soon and they will incorporate some of the data from the Aspinall Unit as well. Melissa said the real reason the Grand Canyon switched away from trammel nets was to reduce incidental mortality in larger humpback chub. Brian said he has seen some damage from the trammel nets, but most of the mortality has been mitigated by sampling later in fall when water temperatures are lower. Rich said these reports out of Westwater and Black Rocks are very helpful. To the extent possible, he encouraged presenting estimate statistics (abundance, coefficients of variation, etc) in a common format for each humpback chub population report so that people can read them and follow them across time and across populations. Pete asked Kevin McAbee if there were remaining items in the scope that were not covered in the report. Kevin said the tasks in the scopes have been fulfilled and said if the BC would like further habitat assessment, we would need to add additional information to the scopes. Tom Chart said the

habitat issue is really a different question. He said trying to track the connection between roundtail/humpback ratios and young cohorts and flows is valuable and interesting, but outside of what we requested for this report. Dave moved to approve the report. Pete seconded. The Biology Committee approved the report. Kevin McAbee will work to resolve the last remaining edits, provide 508 compliance, and post it to the website.

4. White Paper Humpback Chub Translocation – Dave Speas introduced the report, drafted by Rich Valdez througha process managed by Melissa Trammell. Melissa thanked everyone on the ad hoc committee that helped work out some of the thorny problems around any potential reintroduction. Melissa is hoping for conditional approval on this report after incorporating a few late breaking comments received from Derek Fryer, Leslie James, and Emily Spencer. Rich reviewed the history of the project. The genetic management units were established by Bohn et al. 2019 which directed conversations more specifically. Melissa managed the ad hoc group through a variety of conversations that resulted in consensus recommendations which are provided in the report. Rich reviewed the six populations present in the Colorado River basin, five extant and one functionally extirpated. The purpose of the white paper was to target reintroduction for the extirpated population in Dinosaur National Monument. The ad hoc team identified the reintroduction area, then the source, then the production strategy. Rich noted that humpback chub were originally thought (in the 1970s) to be equally distributed throughout the river, but now are known to be limited to rocky canyon habitats. The Bohn report indicated three distinct management units. The Green River (Desolation/Gray population) genetic management unit (GMU) was distinct from the Upper Colorado River (Black Rocks/Westwater and Cataract canyon populations) GMU. He noted the GMU for the Green River does not extend up into Yampa Canyon as we do not have fish in that system to collect data from. The white paper recommends Dinosaur National Monument as the reintroduction area, Deso/Gray as the source, development of a broodstock for paired or voluntary spawning, collection of 500 humpback chub, a multiple year effort, and development of two additional plans (one for hatcheries, another for reintroduction and monitoring).

   The reintroduction area is about 60 miles from Anderson Hole (RM42) down to the mouth of the Yampa and 25 miles downstream to Split Mountain Campground. They do not recommend introductions into Lodore specifically. Pete asked why 50 cfs was considered as a cutoff for investigating reintroduction areas. Rich said the target was arbitrarily selected with the goal of having continuous flow. Melissa said that HBC translocated in Shinumo Creek in Grand Canyon did not reproduce [with a base flow of about 7 cfs] but HBC translocated into Havasu Creek did reproduce, and Havasu has a base flow of about 65 cfs. Pete noted flow concerns associated with a climate change and pointed out that flows in the Yampa River have gone below 50 cfs in recent years, moreover current snow pack indicates that low flow conditions are likely again in 2021. Rich acknowledged that point and said really low flows in 2002 were likely a cause of the blinking out of that population. Pete asked for additional information prioritizing the Green or the Yampa in the report. Rich said the models were attempting to reestablish a fish population of substantial size and noted that these specifics would need to be addressed. Tom Chart noted the importance of the recalculation of transit loss by the Colorado State Engineer that will keep more water in the river under low flow conditions. Don agreed that Pete's concerns were on target, but said there are

positive signs along the Yampa including the State Engineer's Office transit loss recalculation favoring protection of Elkhead Reservoir releases, and new initiatives potentially benefiting Yampa flows such as the Yampa River Fund. Melissa said the report should include some of the limitations on the Yampa. Pete noted that Wyoming is interested in further water development in the Little Snake.

Deso/Gray was selected as the best source of fish because Deso/Gray is the nearest population to DNM. The population appears large enough to support the effort. Should the fish from DNM move downstream to Deso/Gray (about 100 miles), they would not be genetically changing the nearest neighbor population. Creating a second population with Deso/Gray lineage under this effort has conservation benefits for the species by providing redundancy to Deso/Gray. Based on conversations with SNARRC, recommendations include collecting fish from the wild and then developing a broodstock in a hatchery. A maximum of 100 fish per year could be collected. Rich said stocking rates should target a population of 600 adults and that target numbers would be recalculated based on survival rates. Rich said there are real logistical challenges in pulling fish out of Deso/Gray.

Brian asked if humpback chub are sexually dimorphic in Deso, allowing for field identification of males and females. Rich said they would need to be sexed in the hatchery; ultrasonic scanners can sometimes be used to determine sex in field conditions, though. Dave acknowledged that pulling 100 fish per year out of Deso/Gray is possible but may be challenging.

>Tom Pitts recommended that Don Anderson help evaluate the likely risks of very low flows in the Yampa in future years under current Program operations. Don asked if Tom was requesting an analysis that assesses the effect of now having Program flow management tools that were not available in 2002, such as the allocated storage at Elkhead Reservoir. Tom Pitts said yes. Jojo recommended including information from the Yampa River Management Plan. Rich said that analysis may move focus to the Green River section of DNM. Tildon said we have not seen a collapse of the native fish community in the Yampa, even in years like 2018. There are notable populations of roundtail chub, bluehead sucker, and flannelmouth sucker. Tildon said the roundtail chub currently move between the Green and the Yampa depending on flows and local conditions. Tildon recommended focusing on Deso/Gray as the source population, and broodstock and voluntary spawning as the reintroduction method.

Pete said in light of the predator effects we have seen in this area, he recommended incorporating more information about predators in the potential reintroduction area. Pete said he is specifically concerned with the smallmouth bass in the Green River. Melissa noted the report does note the presence of smallmouth bass. Dave said the native fish population in Yampa Canyon has been documented in the report and said the community is intact in that stretch of the river. Rich recommended adding in specific sections on flows and nonnative fish in the target reach. Pete appreciated that addition. Derek asked if PIT tagged fish that are currently used in population estimates would be removed from Deso. John Caldwell said less than 10% of fish captured during sampling are typically tagged. Melissa said information like that would be included in the hatchery and broodstock development plan, but acknowledged that it was an important discussion to have. Derek asked if these actions would lead the Service to manage each genetic management unit as

Distinct Population Segments. Kevin McAbee said Distinct Population Segments really pertain to listable entities. Humpback chub has never been managed as a DPS, nor has it ever been petitioned to be managed as DPSs. DPSs are typically not applied commonly because there is Congressional guidance to use the DPS classification sparingly. The goal is to maximize conservation for genetic diversity, not to complicate management. Significant portion of the range is evaluated in each listing decision. The DPS standard includes: is it discrete and is it significant. Kevin noted that DPS is not evaluated in the downlisting. Rich said that, historically, humpback chub has been considered for DPS dividing into upper and lower basins, but the species remained listed as is. Derek thanked Kevin for the information. Derek also appreciated Pete's concern about flows in the Yampa.

Melissa recommended delaying approval of the report until after additional response to comments into the documents. Dave recommended bringing the report back for review in January. Kevin McAbee said the ad hoc committee worked through the appropriate place for reintroduction, he is happy to add additional information into the report on nonnative fish and flows. He said the secondary benefit of replicating the Deso/Gray population is important from a genetic perspective and is evaluated in the 3 Rs that the Service uses to evaluate species in SSAs and 5-year reviews. Dave agreed. Kevin said the important question now is not where, it is whether or not this action is ripe for action. Melissa said the ad hoc committee realized that this was not the fastest, nor most expedient way to get chub back into Dinosaur National Monument, but it does contribute the most to recovery of the species. Pete agreed that the site was the appropriate one, and noted that his comments really point to that second question of whether or not these actions are ripe for movement. Dave agreed and referenced the hatchery group that will help weigh these options. Dave would like to separate approval of this white paper from the evaluation of whether the actions are ripe. Rich said he will still accept comments and will incorporate comments as soon as possible.

5. Update on White River Management Plan development – Don Anderson said his original goal was to provide an update, but with extra time, he is interested in tapping into the biological brain trust on this call to move forward. Don noted the White River Management Plan is moving forward with discussions around modeling of future depletions, including the potential effects of climate change and other uncertainties. The White River Planning Team is now looking for a comprehensive menu of possible actions in order to identify those that could provide the most benefit to the species to offset depletions. The document Don shared contains a tentative list of recovery actions that could be taken in the White River, casting a wide net around what actions may be useful. They are not in any order other than being grouped into the Program's areas of focus, nor are any specific actions being proposed at this time. The team developing the Management Plan proposes that experts would develop one page spec-sheets to outline the benefits and costs of each of the actions; these would provide a basis for follow-up discussion and identification of actions worthy of further consideration. Don has a column documenting potential leads for those efforts. Don anticipates workshops will be held on each of the program focus areas to evaluate the spec-sheets specific to those efforts. Don walked through the current options on the table to incorporate BC feedback. Jojo said the BC's input is really valuable and encouraged participation. Kevin McAbee encouraged participation from PIs who are interested in nonnative fish management actions, who were in many cases the idea generators for these efforts. Dave asked if vegetation control and monitoring were completed by the

program in other places around the basin. Tildon said monitoring does occur in the NPS scope around Flaming Gorge flows; vegetation control is not a routine activity. Tom Chart said our partners do complete vegetation control, but the Program's actions occur in flow recommendations which prioritize an active channel. Paul Badame encouraged discussions with BLM around vegetation control. Tildon said conversations are occurring within the scope of the White River Partnership. Tildon said the White River Partnership is now being coordinated across both Colorado and Utah. Tom Chart said activities are being discussed in other forums like the White River Roundtable as well, but reminded the group that the goal of this plan was to set the groundwork for a Programmatic Biological Opinion and the team is looking for actions that can be taken to offset future depletions. Dale agreed with the need to draft stocking plans and recommended removing the word "best" from the recommended action table. He recommended Matt Fry, Zane Olsen, and Brian Sheer all help out with the hatchery efforts. Tom Pitts noted that if this follows the course of other PBOs, all of these actions would be needed to be added in to the RIPRAP and would likely strain annual funding when annual funding is currently at a premium. Tom Chart agreed that the work plan is tight right now and ongoing post-2023 discussions highlight future funding uncertainties. He concurred that all incorporated actions would be in the RIPRAP. Rich said the White River has been shown to be an important tributary where populations could expand into. He asked if the White River was a place where populations of the species could be established fully, not as a component of larger systems. Don said we have seen value to the habitat provided to both Colorado pikeminnow and razorback sucker. Tom Chart said the goal is to preserve the current conditions that the White River provides for endangered and native fish. Tom is not expecting greater usage than we see now, but prioritizes maintaining strong native fish populations. Rich praised the effort and thought the action list was valuable. Don noted the importance of flat lining budgets and our limited capacity to accomplish this entire list of recovery actions. Don will resend the document to the BC following this meeting and requested input on who should be incorporated into these discussions. Tom Chart encouraged sending out the example spec sheet as well. Melissa found the list to be very thorough and encouraged paring down the list to the most essential actions.

6. FY22 and FY23 Budgets – Julie reviewed the budget issue, what we are looking to accomplish, and the target funding amount that could alleviate the shortfall. The PDO is asking the BC to indicate the approach they prefer (targeted or across the board cuts). These decisions will go into developing Program Guidance for PIs, which will be used to write SOWs for 2022-23. Paul said he considered option 6, but noted the downside is that all of the budget cuts for Utah would fall on a single UDWR office. They were uncomfortable with any cuts to Wahweap. Overall, Paul supported the PDO "strategic cuts" option, with some minor revisions. Kevin McAbee asked whether UDWR discussed shifting project responsibilities between their offices to cover funding reductions. Paul said they had not considered those yet, but he felt that was a good suggestion. Dave Speas indicated he was tending towards cuts to NNF and monitoring (option 4). Dave asked Don whether cutting the Uinta River flow gage would hinder implementation of Duchesne River flow recommendations. Don believed there was another gauge that was used. Dave asked about the final report for the sediment monitoring project and whether that would be removed with cuts. Tom Chart said the final report was due in 2021. Don said the initial commitment was for 5 years, which ends in 2021. Melissa said there were already some general recommendations derived from the existing data set, but a longer data set would be helpful. Dave asked about the PIT tag SOW, explaining that it had a fixed cost for

annual equipment acquisition. He indicated that SOW could probably be reduced pending discussions with PIs about their annual equipment needs. Melissa thanked everyone for their time and effort towards this exercise. Melissa started with option 6, with some exceptions. She disagreed with sediment and channel monitoring cuts. These are priorities for NPS. In conversations with NPS staff, they prioritized annual remote sensing work, not periodic. She did feel the pre-SMB flow spike monitoring may be up for debate since we have not implemented one of those. She also recommended keeping cuts to canal salvage in the Grand Valley. She zeroed out broodstock collections in her recommendations because we likely will have completed all or most of the collections by FY22 of FY23. Dale indicated he was leaning towards options 4 and 6. He supported keeping canal salvage zeroed out and said he would recommend reallocating that funding towards NNF removal in the Colorado. He also thought Grand Junction funding for the Surge was less productive than other efforts given the lack of native fish in that reach compared to other reaches. He thought option 6 was probably more favorable to the FWS-Vernal office, which he acknowledged covers a lot of different projects and areas. Julie said we would take all of today's input and create a single option for consideration by the committee in January. Tom Chart recognized that the demand for funding will be sustained, if not increased. On the supply side, Fisheries offices in FWS has concerns with limits to FWS overhead despite significant contributions to hatcheries and FWCOs. Harry said option 6 appears to be favorable to CPW. He recognized that CPW sees benefits to canal salvage and they did not feel it could be done without some involvement from FWS. Harry recommended keeping some funding commitment there, maybe at a reduced amount as CPW could continue to provide staff to that effort. He cautioned that NNF removal cuts are concerning given the amount of work missed in 2020 due to COVID. Kevin Bestgen said they have not reviewed this proposal in detail, since it was a BC assignment but he was willing to provide comments. Pete Cavalli indicated he used option 6 as a starting point. He was uncomfortable making extensive cuts to NNF removal. Kevin McAbee reviewed NNF cuts included in the PDO's suggestions. He explained that we reinstated NNF budgets from prior years and then made cuts from there. These are not cuts in addition to those made in recent years. Julie confirmed this was the case for all projects. Dave Speas drew attention to Project 140 (native fish response) and thought that might be conducted more periodically instead of every year. Kevin Bestgen explained that the project did address more than just NNF, and it is one of the few projects of its kind in the basin. Kevin McAbee said that project was reduced in 2020-21 and he kept those reductions moving into the future for option 6. Rich Valdez commented that the Lake Powell inflow might provide good habitat, and the reach may be more informative than Cataract Canyon itself. Melissa requested a description of the headers used in the table discussed today.

7. Consent agenda –Approval of October 2020 Biology Committee summary. The summary was approved, pending revisions from Harry and Derek.

8. *Next Meeting: Friday, January 15th, 9-2*

ADJOURNED: 1:52 pm

Attachment 1: Assignments

The order of some assignments has been changed to group similar items together. For earlier history of items preceded by an ampersand "&", please see previous meeting summaries.

1. Floodplain follow-up assignments:

    a. The Program Director's Office will discuss terms of the Escalante wetland and Lamb property leases with Ouray NWR (Dan Schaad, Sonja Jahrsdoerfer, and Andrew Pettibone) to ensure the Program really benefits from them. Tildon noted that the easements may be protecting these floodplains from other development. Tildon said there are two easements being proposed to be open to oil and gas leasing though the BLM - Pariette and Escalante Ranch. Pending. *12/15/20: Tildon has had discussions around these property leases and the current funding covers administration of the leases and cannot be reduced. This item will be deleted after this summary.*

2. Exploration of using alternative methods of nonnative fish control in systems where traditional mechanical control is ineffective/infeasible. Kevin/Tom/Don will start the discussion with relevant parties and bring agenda items back to the BC as necessary for both the White and the Duchesne. Kevin will talk to Jenn, Chris Smith, and Matt Breen to get more information around the White and Kenney Reservoir. *9/17/18*: Don and Tom discussed releasing water in the White for algae control, which might also have benefits of removing nonnative fish. Tom said they released water in early July to control *Cladophora*. CSU field crews were on site and the PDO will check back to determine the effects on the fish population. Kevin Bestgen confirmed sampling occurred pre- and post- flow. The data has not been worked up yet, but will be in the off season. Kevin Bestgen thinks the event occurred pretty late in the spawning season and may not have had a large effect. Tom noted that Alden said it may need to occur on an on-going basis for algae control.

3. PDO will figure out how best to distribute spill contact information (potentially on the website). Pending.

4. The PDO will develop a plan to have in depth conversations on nonnative fish issues and inclusion of PIT antenna data in analysis and will schedule workshops or meetings as appropriate. *12/15/20: Kevin McAbee will schedule a nonnative fish forum to be held as part of the online Researcher's Meeting in January of 2021. This item will be deleted after this summary.*

5. PDO will start conversations around a razorback sucker monitoring plan, including revisiting the 2012 report for recommendations.

6. Julie will distribute RefWorks information. *1/24/20*: USFWS has run into some major implementation challenges with RefWorks and will continue to seek collaborative tools to share resources.

7. Kevin McAbee will work with PIs familiar with the White River to suggest potential management actions in concert with the White River Basin Management Plan. *12/15/20: The discussion at this meeting outlines these actions. This item will be deleted after this summary.*

8. Future BC agenda items:

    a. Discuss options for a walleye synthesis report.

9. Program participants will work with Lindsey Bruckerhoff to support modeling efforts.

10. Don Anderson will evaluate the likely risks of very low flows in the Yampa in future years under current Program operations to be included in the Humpback Chub Translocation White Paper or subsequent planning documents as deemed appropriate.