

**Biology Committee Summary, March 4-5, 2019**

**In attendance:** Harry Crockett (chair), Paul Badame, Dave Speas, Melissa Trammell, Pete Cavalli, Dale Ryden, Craig Ellsworth. **Absent:** Environmental Representative. **By phone:** Tom Pitts

**Interested Parties:** Tom Chart, Kevin McAbee, Julie Stahli, Kevin Bestgen, Cheyenne Owens, Tildon Jones, Matt Breen, Mike Mills, Darek Elverud, Chris Smith, Travis Francis, Ryan Christianson, Don Anderson. **By phone:** Scott Winterton, Mike Partlow.

Comments submitted by: Pete Cavalli

**CONVENED: March 4th, 12:05 pm**

1. Harry Crockett was welcomed as the 2019 chair. Agenda was modified to read as appears below.
2. Schedule of Researchers Meeting through 2023 - Kevin McAbee reviewed the projected plan for the Researcher's Meeting for the next 4 years:
  - 2020 - San Juan Program (Durango, Jan. 14-15)
  - 2021 - Utah
  - 2022 - Upper Basin PDO (Vernal)
  - 2023 - CPW

Colorado and Utah traded years to prevent conflicts with internal meetings (schedule above is accurate and reflects the change). The PDO will remain aware of potential travel issues with Durango and will plan alternatives accordingly. *Update from Melissa Mata: The San Juan Program is conscious of potential issues related to travel in Durango and is working on a backup plan (potentially in Ft Collins so out of state travel requests will not change).*

3. Review technical report for Project 158: "Assessment of larval Colorado pikeminnow presence and survival in low velocity habitats in the middle Green River: 2009–2012". Kevin McAbee thanked both authors, Matt Breen and Tildon Jones, for all of their efforts producing this document as well as Dave Speas, Melissa Trammell, and Kevin Bestgen for their review. Matt Breen said that in response to low Colorado pikeminnow recruitment, the goal of this study was to assess the impact of small bodied nonnative fish on larval pikeminnow. They sampled backwaters, removed nonnative fish and added netting to exclude nonnative fish. In 2009 and 2010, the project was evolving. By 2012, the study design was fully implemented and changes in the fish community were documented over time. The study was designed to assess what happens to fish between larval sampling at

Echo Park in early summer and young-of-year (YOY) sampling in the fall. Four main conclusions were reached based on 2012 data, primarily using native fish surrogates (e.g. flannelmouth sucker) because no larval pikeminnow were found in backwaters in 2012. 2012 was a drought year with flow levels remaining below recommended levels. Larval pikeminnow were documented coming out of Split Mountain, but not at high densities. In June 2012, over 90% of fish were removed from backwaters prior to netting. Backwaters blocked with ½ inch mesh nets were significantly different than control sites and backwaters blocked with ¼ inch mesh. Both native and nonnative fish populations increased in the backwaters as the summer progressed, with significant increases in red shiner populations. With ½ inch mesh, fish may have been able to move between backwaters and the main channel to select for water quality or other conditions, which improved survival. Control backwaters contained the lowest concentrations of all fish species, showing that block netting can have a positive effect on survival of young fish. Competition for resources is likely affecting survival less than predation. Recommendations include:

- 1) continue block netting for another season of experimentation, with only control and ½ inch mesh treatments to increase replications. If pikeminnow survival increases in this additional year, the authors would develop recommended management actions.
- 2) Before implementing as a reach-wide management action, further study would be needed to assess whether change is expected at a population level if many backwaters are netted.
- 3) Continue monitoring larval drift and larval seining under this project. Conduct continuous drift net sampling as modeled by Bestgen and Hill 2016.
- 4) Recommend removing third backwater sampling for each 5-mile reach from ISMP and using that effort in a new study to evaluate trends over time with directional fyke nets in summer.

Melissa and Craig noted that predation by smallmouth bass may be documented by the directional fyke nets. Matt said that one advantage to the 2012 sampling year was that high temperatures may have encouraged bass to move out of the backwaters.

Matt reviewed changes suggested by reviewers. The authors cleaned up the executive summary, clarified the status of 2012 as an experimental year, and clarified treatments in a given year using a table. The authors also clarified that competition is a source of mortality for young native fish, but that predation is a more significant impact (once predation is controlled, natives can survive the effects of competition). Also, the study documented consumption of age-0 flannelmouth sucker by age-0 smallmouth bass. The authors clarified the value of ½ inch mesh size which allows for movement between backwaters and across different substrates depending on timing and flow implementations. Melissa and Dave applauded the authors for addressing their comments and moved to approve the report. Harry asked what a comprehensive analysis would look like to show a river-wide effect. Matt said it would likely be an extrapolation of the results found from efforts in treatment backwaters and that more thought would be needed before that recommendation was implemented. Tildon said that implementing the design from 2012 in another year may provide more optimal flow conditions and pikeminnow larval levels before it can be scaled. Kevin said working backwards from the PVA may give some indications of what level of change in survival may be needed. Dale agreed that the study is valuable just in its ability to document

a potential increase in survival whether it is scalable or not. Tildon added that the study may be able to document whether flows alone may be advantageous to pikeminnow or may indicate that ½ inch mesh netting may be advantageous, which would allow the team to set nets and leave them installed. Melissa agreed that densities of age-0 pikeminnow can drop dramatically between August and October and being able to document how is valuable. The report was approved by the Committee. >Julie will post on the website (*done*).

4. Resuming 158 backwater block netting based on report conclusions - The authors reviewed that the first recommendation is to repeat objectives 2-4 of the study plan for one more year under favorable flow conditions. Matt views this as a step-wise process, starting with a single year of additional netting and then determining how to best move forward. Kevin asked when they would have the information needed to determine whether or not they would move forward in a given year. Matt said they understand the system pretty well and once materials are on hand, a decision can be made based on flow conditions. Sampling occurs in summer, which fits well into schedules. 2011 was avoided because of high flow conditions. Tildon says flow conditions currently look good for this type of study. Tom Chart asked if the lower Green River might be a better location to further test the block netting recommendation (e.g., expand on Project 160), because age-0 pikeminnow are more common and suggested focusing experimentation with fyke nets in the middle Green where smallmouth bass are more prevalent. Matt and Paul pointed out that these intensive studies would be much more complicated in the lower Green River, because of less accessibility. Harry asked if the appearance of perfect sampling conditions may intersect with the current flow request letter. Tom said the flow request letter just continues to use flexibility in the ROD to get closer to the base flows recommended in Bestgen and Hill (2016). Harry clarified that low flow conditions could be mitigated by dam operations in most years, but that high runoff is harder to mitigate and keep base flows in the preferred range for pikeminnow. Matt agreed and said that both 2009 and 2010 fell into that preferred base flow range for pikeminnow (Figure 6 of report), but that 2012 did not. Tom asked what was covered by the current work plan. Kevin said that the objectives covered by the GRB-FWCO are funded, but the block netting is not currently covered. 2020 and out years could be addressed in the work plan, but the question to the Committee would be whether or not there is interest in funding additional work by UDWR and the cost of the nets. Dave noted that we are currently maxed out in the 2019 budget, so funding would have to be moved from elsewhere. Melissa said the backwater monitoring currently being developed by NPS may dovetail nicely with these efforts. Ideally, NPS efforts would begin in summer 2019. Chris Smith said GRB-FWCO is considering doing rapid surveys of backwaters that are currently seined. Matt said ordering of nets would need occur pretty soon if action is needed in 2019. The Committee tabled action for 2019, but encouraged inclusion into 2020 work plans.
5. Follow-up from Feb. 22 NNF webinar - Kevin McAbee reviewed the nonnative fish webinar that occurred in late February and provided the committee with the opportunity for any further discussion on nonnative fish topics. Based on the webinar, efforts to estimate abundance of northern pike in two reaches on the Yampa will proceed this year with reallocation of current budgets. In addition, concerns remain about the smallmouth bass populations in the White River. Both Chris Smith and Jenn Logan will be targeting populations just downstream of Taylor Draw Dam. Matt Breen will move 8 smallmouth bass

control field days (4 spring and 4 fall) from the Green River to the White as field conditions allow. Paul thanked the NNF presenters for the high quality of their presentations. Dave asked if the pike abundance estimates were included in budgets. Kevin explained that the field work would occur within the context of current budgets (just changing dynamics of current pike removal efforts). Analysis for the Hayden/Craig reach is included in John Hawkin's 98c budget. Tildon added that no funds are currently provided for the 98b analysis, but it could occur in either 2019 or 2020. Funding will be considered as part of the upcoming SOW process.

6. Wetland Updates - Tildon Jones and Scott Winterton presented some revised technical drawings of the Stirrup Wetland (attached) which were reviewed by stakeholder group. Drawings call for excavation of a channel from the bottom contour of the wetland to the gate, ensuring draining to the water control structure. The wetland would drain into a fish kettle through a stop log structure, then through a screen to capture fish in the kettle, and finally through a water control gate to the canal and river. In order to drain the wetland into the kettle, but to prevent the river from entering into the wetland during fall, the gate is designed to be at a higher elevation than the kettle bottom. Digging the channel too deep runs the risk of connecting the river in the fall, which would prevent draining. 3 feet of water would remain in the kettle during the drain, which would be pumped to the river. There is also a frame to install screens to prevent large-bodied nonnative fishes from entering when the wetland is filled. The wetland is 8 ft deep when full; even with evaporation, this wetland would provide suitable habitat for the duration of the summer. Even when the river is at some base flows (4682 ft elevation), the river elevation could be 3' above the elevation of the bottom of the wetland and kettle (4679). Sedimentation of the gate area may be an issue, but draining the wetland could assist in removing sediment build-up. The current design includes a ramp for heavy equipment to clean out the area where sediment is likely to settle. Overwintering fish could also be possible in the Stirrup, as demonstrated by past studies. The water control structure and gate will allow for a pulse of razorback to be entrained, but it will fill quickly, so it may not be possible to entrain multiple pulses of razorback. Different mesh-size screen panels (4' by 10') can be installed in this facility as designed, and the Program will need to decide on the mesh size. Tildon asked if the committee is willing to move forward with this design for compliance analysis as it resolves the previous problem of not being able to drain the wetland. BLM is drafting an MOU for the facility to describe ownership, operation, and funding. Dave expressed support for the project, especially as a deep water location that may be valuable for bonytail. Harry and Craig agreed. Tildon reviewed the fact that the Stirrup is currently the most promising site in the middle Green. Dale reiterated the importance of documenting the costs of O&M. The Committee supported continued movement on this project.
7. Reservoir Screening update
  - o Red Fleet screen design - Paul said that Red Fleet is on track. The NEPA process is finishing up, which was delayed by discovery of the Ute Ladies' Tress. Utah resolved this issue by developing a mitigation fund to specifically address very small pieces of land with Ute Ladies' Tress (e.g. a 16th of an acre), which will likely be held by their ESMF office in Utah DNR. Engineering and planning is close to 100%. Actual final cost is currently being assessed, but will be

forthcoming soon to determine cost allocations between the state and the Program. The MOU is in place for Utah to own the screen placed on BOR property. The MOU will be used as a template for Starvation. Utah thanked Wes James for his efficient project management.

- Starvation screen update - Paul said Starvation is on track to meet its 2020 construction date. The MOU is currently going through review with CUPCA, CUWCD and BOR. The original design has been moved downstream to outside of the Primary Jurisdiction Zone. The ground will be re-surveyed, but the original design stands. UDWR-Vernal will be actively monitoring the temporary screen during runoff this year. NEPA was completed in the old location, and should be relatively straightforward for the new location.
- Scofield Reservoir - The modular, movable screen is planned for construction in spring 2019, downstream of the dam wall. Funding is already in place. BOR is considering reconfiguring the outlet works; if that occurs, a screen will be considered as part of the design. Sampling will continue downstream of the screen to ensure no escapement is occurring (especially of tiger muskie).
- Ridgway reservoir - Value engineering has narrowed the scope of the project to two options. The first is a net like Elkhead that would block the spillway. The second option is a rigid screen that would be located up on the apron on the dam. Discussions will continue to decide between the two, which would then result in more complete designs and environmental compliance requirements. CWCB has provided \$1 million for the solution, with the remaining ~\$1.3 million provided by the Program. Harry said the estimates of smallmouth bass have declined, which is making the tournament less popular. A coanda screen was proposed downstream from the spillway, but BOR did not find that option to be acceptable. Kevin said the apron on Ridgway provides a unique opportunity for a rigid screen which makes it very difficult for fish to get behind it and downstream. O&M of a rigid screen would likely be considerably less than for a net. The rigid screen is more protected from the elements and is likely to degrade more slowly. *Update: during the Ridgway meeting on 3/7, the rigid screen was identified as the optimal solution and designs are being developed for that option.*

8. Colorado pikeminnow avoidance - Data from the recent Green River pikeminnow estimate indicate that avoidance may be occurring; declining capture rates are seen through time and after each pass. Tildon reached out to the San Juan program who has done some related work. Ben Stout from USU completed his master's project and noted there was no clear signal that tagged fish were avoiding electrofishing boats. He found that some fish were captured by boats and others were detected by antennas, even to the point where they may be two "separate" populations. Tildon is continuing to assess what our options are to move these efforts forward, including study designs using both methods and a known number of fish. Examining bias in data in the database may also be an option. Tildon noted we currently have wagon wheel antennas available and an upcoming season of pikeminnow estimates on the Colorado that may provide a unique opportunity. The Colorado River estimates also use nets. Tildon said the goal is to determine whether our estimates are biased, where fish that have been caught using electrofishing and tagged are less likely to be recaptured. Kevin Bestgen said that in order to estimate heterogeneity of datasets, many passes are needed with high

capture probabilities (25-30%). Currently, we complete 3 passes and our capture probabilities are between 5-10%. Some analyses have looked at possible effects and no evidence of bias has been found. The White River antenna has been identified as a possible data source. Using STReaMS to compare passive and active captures during the 2016 to 2018 period could be a good place to ground truth this concept in the Green River subbasin. Dale said that the duration of avoidance is an important aspect, with longer avoidance terms being a larger problem. Kevin Bestgen said captures decrease over time within a year and across multiple years in the Green. If avoidance is occurring, it is currently being exacerbated by nonnative removal occurring across the basin. Travis noted there are 20-30 mile stretches of the Colorado and San Juan rivers newly exposed by Lake Powell where fish may or may not be residing. The lower Green may also be valuable because electrofishing is limited to pikeminnow estimates. >Tildon, Kevin Bestgen and Julie will work together to assess STReaMS data.

9. Program Director's Update - Tom Chart reviewed the organization chart and a spreadsheet of responsibilities for the PDO shared at the December Management Committee meeting. He noted the PDO still has vacancies in the Deputy position and the administrative support position. The office is currently seeking to fill the Deputy position permanently. It will be announced as part of (4) GS-13 positions for Deputy Directors across Region 6 sometime in the coming months. Two ARD positions have been vacated in the last month through retirements, so those vacancies are the highest priority for hiring staff at USFWS. The work plan has Coordinator assignments in the table to help clarify who will be reviewing each scope. Julie will attach the org chart and spreadsheet of responsibilities to the meeting summary (*done*).
10. Green River Flow Recovery Program Request Letter - Recommendations are forthcoming out of the GREAT which will suggest updates to the flow recommendations for the Green River falling into three categories: larval triggered spring flows, revised base flows in August and September (Bestgen and Hill 2016, Grippio *et al.* 2017), and flow spikes to disadvantage smallmouth bass. The flexibility in the ROD of up to 40% of base flows can provide flows consistent with Bestgen and Hill under most flow conditions. The Reach 2 flow targets are suggested to be changed. Both the larval trigger and baseflow revisions have been incorporated into flow management for several years. The Program is seeking to experiment with flow spikes when flow conditions support the action. Reclamation has indicated that they do not want to launch into NEPA until information has been collected to assess all three components of the revisions. In service of that goal, all three have been included in the flow request letter to provide experimental results if hydrology allows. The flow spike study plan was approved last fall. The letter was out for BC revisions until last Friday, the PDO received comments from BOR, CREDA and WAPA. BOR noted some technical issues with our description of a flow spike, which will be addressed by the PDO. Remaining issues will be presented to the Management Committee to be discussed in conjunction with their review.
11. Program Laserfiche - Julie asked for clarification regarding the purpose of the Laserfiche hosted by CWCB. The committee values the existing laserfiche as a source of Program documents. The PDO stated it will not post new information to the laserfiche, except upon request. The laserfiche will continue to house important historical documents. All new

information will be posted to the Program website; Julie requested that any omissions please be brought to her attention. Julie also described the Program's RefWorks library, which is an additional resource for stakeholders. >Julie will send federal employees information on the shared RefWorks account.

12. Consent agenda - The November meeting summary was approved. >Julie will post to the website (*done*).
13. Schedule next meetings - The committee scheduled a webinar on May 10 from 8:30 to noon, MT and an in person meeting on July 8th and 9th in Vernal (begin 1pm MT on the 8th until 5pm MT on the 9th) to discuss the 2020-2021 Work Plan and a field tour of floodplain sites on July 10. Julie sent google calendar invites to the Committee and interested parties.

**ADJOURNED: 4:15 pm**

**CONVENED: Tuesday, March 5, 8:00 am**

14. Cheyenne highlighted an opportunity to suggest symposia for the joint TWS/AFS society meeting in Reno, NV during the last week of September. Cheyenne asked if there was interest from the BC to support a Colorado River themed Symposium. Concerns were expressed about travel limitations. Dave recommended contacting the GCMRC. Kevin Bestgen recommended contacting DFC to make this suggestion.
15. The Committee reviewed the recommendations from FY18 annual reports and requested the following changes.
  - 165 - Clarify that pulses for Stewart Lake are supplemental water not river water.
    - Determine how to better track Stewart Lake progeny
    - Matt called the BCs attention to the funding needed for a digital flow gage in Stewart Lake to document the flow coming into the wetland, ideally in real time.
  - 131 - Melissa asked how many humpback chub are currently at Ouray-Grand Valley. Dale confirmed that 27 fish are currently in captivity there from Westwater.
  - 160 - Tildon clarified that the expanded sampling includes the riverine section of Colorado River downstream of Cataract Canyon that has been exposed as Lake Powell drops. Pete suggested the addition of trawling nets (new in WY) to try to access species or life-stages that do not currently get caught. Tom said they will have discussions in conjunction with the monitoring group during post-2023.
16. Review of draft RIP/RAP revisions and assessment - Kevin McAbee congratulated George Weekley, Pete Cavalli and Melissa Trammell for finding the treasure hunt in the RIP/RAP table. Kevin said the glossary is updated this year to try to clarify some of the abbreviations used in the RIP/RAP. RIPRAP tables:
  - General tab:

- III.a.2.c. Harry asked if it is true that walleye are not self-sustaining. Kevin Bestgen clarified that three larvae had been captured over two years. Captures of juveniles remain rare.
- Pete asked if another line should be added to address grass carp as captures expand; Kevin McAbee said it is addressed in III.A.1. Kevin Bestgen said Kocovsky is still working on grass carp in Lake Powell and said if grass carp spawn in rivers, they are likely spawned in the Green. Conversely, larvae were found 15 miles downlake, which may instead indicate that reproduction is actually occurring in the lake itself. This would be an unusual and unexpected life history based on current knowledge of the species.
- IV.A.4.c. Humpback genetics will be discussed at future BC meetings.
  - >The PDO will schedule a long block of time (e.g. 2 hrs) to discuss the report and subsequent ramifications in conjunction with the next BC meeting. The BC prioritized collection of fish out of Deso/Gray to support development of an upper basin broodstock.
- IV.A.4.b. Dave recommended new thoughts for bonytail, including stocking gravid fish, stocking in Lake Powell and new wetlands like Stirrup and Matheson.
- Dave and the Committee praised Melanie and others for impressive I&E accomplishments in 2018.
- >PDO will add reference to VII.B.1. to the work that was not accomplished because of the lapse/change in funding and an associated (X)
- >Cheyenne will double check the data from 1995 and 1996 in the Propagation tables for pikeminnow and razorback sucker to figure out which is correct.
- Pete asked if any of any of the bonytail put in the Colorado ponds are ever seen again. Dale confirmed that they are sampled annually and about 150 (bonytail and razorback sucker) are found annually and stocked out into the river.
- Add a line on the General: Monitoring tab to reference the need for PIT tag antenna maintenance on a basinwide basis (around line 145).
- Green River tab:
  - Interest was expressed in figuring out how to spread information that would have been presented at the Researchers' Meeting. >PDO will follow up and develop a plan. (*update: Julie emailed list-serve on 3/13/19*)
- Yampa River tab:
  - Melissa will send information to be added to I.A.1.g. about NPS monitored sediments sites.
  - III.B.1.a.(2) - move exclamation point? CPW managed six total spillway net cleanings and inspections. Four spillway net inspections/cleanings by local contractors, and two by the net manufacturer. CPW plans to continue with at least four net spillway cleanings/inspections in 2019 to maximize performance of the net. ! Costs of cleaning (\$12K) exceeded CPW's

commitment (\$10K); they will not seek reimbursement and consider this in-kind to the Program.

- Colorado tab:
  - PDO will assess gray boxes on the instream flow section and clarify which should be gray
  - WAC needs to assess IB5a(1) and (2) - especially Mark Wondzell- maybe add the same concept to the Green River (through Canyonlands)
  - Julie will update the Salt Creek data information
- Gunnison tab:
  - WAC needs to look at I.B.4 and I.C. all
- Hydrology Summary - Kevin McAbee said the summary is a comprehensive analysis of 2018 hydrology. He encouraged the BC to review and submit any comments to Don.
- RIPRAP text - Kevin asked the BC to review and submit changes in track change mode. Kevin will plan on compiling all comments and submitting to the MC by the end of March. He will send it out to the BC first only if there are substantive comments that need to be reviewed. Please submit comments by COB Tuesday, March 19.

17. Review of draft Program Guidance - Kevin McAbee asked all to review Program Guidance sent out last week. Please submit comments by COB Tuesday, March 19. All should be aware of all of the changes required by BOR this year, including budgets in the excel format provided. Kevin and Dave will set up webinars to run through the budget tables to help any PIs who are interested navigate the sheets. There are two spreadsheets (one for Federal and one for non-Federal). Scopes are due to the Program Office in late April. We will send out scopes to the BC in June for review during the July in-person meeting in Vernal.

**ADJOURNED: 12:23 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. Humpback Chub (refugia/broodstock development / genetics)
  - The Program will develop an action plan for establishing refugia for humpback chub (avoiding getting bogged down in genetic analysis) and continue to add new wild fish to hatcheries. Mike Roberts has recommended building in limiting factor/life history studies to better understand what’s going on in the system that’s affecting humpback chub populations. After Wade’s report is received, a workshop should be held to include discussion of when and where fish would be stocked. Tom Chart recommended outlining questions for a workshop, conducting the workshop, and then finalizing the action plan. *10/27/14: Reclamation awarded contract to SNARRC for analyzing remaining fin clips and completing report (including lower basin data). 1/15/15: data on upper basin chubs will be written up within about a year. The subgroup developed a list of questions for Wade to address (Tom Czapla sent to BC 1/21/15); Melissa Trammell will find and send the plan development proposal document to Tom Czapla by January 21 and Tom will send it to Wade with a courtesy copy to the Biology Committee and Kevin Bestgen. (Done). Wade will revise the scope of work (done). Additional work pending results from Wade. 5/23/17: Wade says Sandra, who did the testing, has left the office so the Westwater samples will not be analyzed for another year. Tom Czapla asked if the Committee would like the report now without Westwater samples, or in a year to include the Westwater samples. Dale is concerned that the Westwater data will get lost if we do not wait to include it in the final report. The Committee agreed we want the Westwater data included in the analysis; meanwhile, Tom will distribute the working report (if Wade agrees) to the BC to provide an update. Tom Czapla said we will wait to figure out what to do with the fish at FWS\_RH until we get the white paper on Yampa River transfer. ● Tom Czapla will follow up with Wade Wilson and get recommendations on securing additional fish for broodstock (e.g. from Deso/Gray). Wade recommends more broodstock (minimum of 50) from Deso to support the stock at Randlett of 10-13 fish. Pete asked what we would do with these fish. The committee isn’t sure, but it will be affected by the white paper and results of the final report. Sandra had recommended a single broodstock from the Upper Basin. 9/17/18: Dale has not collected wild fish this year, they were waiting for temperatures to cool off, but with funding concerns, Dale thinks collection this fall is unlikely. Dale asked if HBC are downlisted, do we need to retain refuge populations? Tom Chart said downlisting would not negate the need to keep hatchery stock. Tom said we still need to figure out what fish are appropriate for Yampa Canyon, which will affect broodstock decisions. Melissa said the fish originally available from the Grand Canyon are no longer available; they were*

*stocked into Bright Angel Creek in the Grand Canyon. The group will reconvene. Kevin McAbee reiterated the importance of these actions for HBC which will gain important sideboards during the recovery planning process.*

- Program needs to continue to evaluate fish for Yampa Canyon replacement. 3/12/19: A draft HBC genetics report was distributed to the BC by Tildon on 3/6/19. Cheyenne Owens will help these discussions move forward in 2019.
2. The Committee endorsed an experiment to tag smaller hatchery razorback and bonytail (for fish coming out of floodplains). Tom Czapla will investigate which hatchery could do this. Tom Czapla will check the BO written for scientific take permits to see if any change in permitting would be required. *1/13/16: Matt Fry is experimenting with tagging smaller fish and will document this work for the Committee in the Ouray NFH 2016 annual report. Tom Czapla will make sure this has been written up. Melissa Trammell said Dave Ward has done a great deal of work on this and will send references to Tom Czapla. Dale Ryden and others emphasized that experienced hatchery personnel likely will always be able to tag smaller fish than seasonal technicians in the field. Tom Czapla will compile information he's received and provide it to the Committee in advance of the May webinar. 5/23: Tom Czapla will request write-up from Matt Fry. 7/14/17: In progress; 10/12/17; Tom Czapla sent draft to the Committee for review on September 29; to be discussed in January 2018. So far we received comments from Pete Cavalli and Dale Ryden, are any other BC members planning on sending comments? 1/25/17: Discussed at the January meeting; Tildon Jones will assist Matt Fry in completing the report. Any additional comments should be submitted by Feb. 15. 11/8/19: Cheyenne will assist Matt in the development of this document as Tildon assumes other responsibilities.*
  3. Biology Committee members can share any thoughts/comments on proposed graduate research projects back to the Committee and the Committee will track as a future agenda item to determine any next steps or specific projects we want to focus on. *3/7/17: Although FY18 budgets appear constrained, we can always put these on a contingency list and keep our eyes out for other funding sources.*
  4. Floodplain follow-up assignments:
    1. 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.
    2. PDO will develop a prioritization strategy for both the Colorado and the Green by the end of August and will schedule a call (Sept-Oct) to continue discussion.

*10/27/17 - Draft discussed by Committee; comments due within two weeks to the Program office. Tom Chart will then take it back to Brent and Ryan and see about next steps. 1/25/18: Prioritization now dependent on elevation surveys and larval information. 9/17/18: Tom expressed support for moving forward with the Stirrup on the Green River and noted the Matheson may be the best option on the Colorado River. The PDO expects to make progress on this issue as soon as we get additional staff online.*

3. *Matheson wetland consideration - 9/17/18: Paul said excavation of the inlet channel was continuing and alterations were being made to the design to determine the inlet structure. 11/8/18: Tildon has assumed prioritization of wetlands as part of new duties and will bring discussions of Matheson funding back to the BC as appropriate.*
4. *BLM concerns regarding ownership of Stirrup wetland. Paul Badame will bring this information to Todd Adams (Utah rep on MC) to discuss in water resources at the UDNR level. 4/3/18: Jerrad Goodell will investigate and provide an answer in April. 7/17/18 – Paul Badame provided an email from Jerrad Goodell to the BC, indicating that the issue is a BLM manager and Utah FFSL need to agree on the location of the high water mark. Dave Speas will send out design/cost information on the Stirrup wetland once attained. 9/17/18: Dave recently learned that construction crews are not available to conduct this in spring of 2019 and is only available to construct in spring of 2020 if we can commit to their schedule. Design has also been delayed because of work on higher priorities. Dave will host a phone call towards the end of October to move this effort forward. Dave recommends scheduling BC review once the design package is ready. Current cost estimates are ~\$500K. The Management Committee provided approval to keep planning to allow for BC review. 3/12/19: The BC approved plans for Stirrup - see above.*
5. *PDO will add discussions about northern pike population estimates in the Yampa to future agendas as appropriate. 9/17/18: Melissa recommended discussing this before SOW process. 3/12/19: Discussed at the NNF workshop, will be deleted after this summary.*
6. *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.

7. SOW Updates (delete after SOW process in FY2019):
  - Update Stewart Lake management SOW. Matt Breen will revise the SOW for FY19 and beyond.
  - John Caldwell - will fix the map on Project 129.

*3/12/19: Julie reminded the PIs to fix these issues in the upcoming SOW process, this section will be deleted.*
8. The hatcheries need new guidance from the PDO which will incorporate HCP protocols. Julie Stahli will provide as time allows. Guidance will include collection and reporting of environmental data. Stocking discussions will happen earlier in the year and be more comprehensive. *11/8/18: Julie and Cheyenne will convene a group of BC members and hatchery managers to develop a plan forward for bonytail. 3/12/19: The bonytail group met on 3/7/19 to discuss options for a food study. Future meetings will be scheduled to support the propagation element as needed.*
9. Geomorphology/CPM nursery habitat symposium - Jerry Wilhite and Melissa Trammell will explore starting a symposium at either the Researchers Meeting or Utah AFS. *Pending.*
10. PDO will figure out how best to distribute spill contact information (potentially on the website). *Pending.*
11. Kevin McAbee will hold a nonnative fish workshop sometime in the Winter-Spring of 2019-2020.
12. PDO will start conversations around a razorback sucker monitoring plan, including revisiting the 2012 report for recommendations.
13. Maintenance of cheese blocks: Dale will email hatcheries to see how many cheese blocks are still in operation and can be distributed to field crews (done 9/17/18). Julie will distribute information to field crews and compile recommendations for when cheese blocks should be used (done 9/28/18). *3/12/19: No cheese blocks are still in operation. Item will be removed after this summary.*
14. PDO will develop and distribute a list of staff responsibilities to the Program after their upcoming staff meeting. *Attached to the March meeting summary. Item will be removed after this summary.*

15. PDO and UDWR will distribute information about the Researcher's Meeting and upcoming BC meeting as it becomes available including potential symposia or associated meetings and Matheson field trip. Includes previous assignment: PDO will convene a group to explore data around pikeminnow avoidance of electrofishing and present results at the January 2019 BC meeting. In conjunction, Dave Speas will request that Mary present at the Researcher's meeting if possible. *3/12/19: The Researchers Meeting was cancelled because of the government shutdown. The PDO will work on a plan to distribute information that would have been presented at that meeting.*
16. Melissa will develop a SOW for monitoring of vegetation and channel narrowing as part of the FY20-21 SOW process.
17. Tildon, Julie and Kevin Bestgen will use STReAMS data to explore signs of pikeminnow avoidance to electrofishing.
18. Julie will distribute RefWorks information.