

Dated: February 1, 2018

Biology Committee Summary, January 24 & 25, 2018

Wednesday, January 24, 2018

Uintah Conference Center, 313 E. 200 S., Vernal, Utah

Biology Committee: Dave Speas, Melissa Trammell, Jerry Wilhite, Harry Crockett, Dale Ryden, Paul Badame, Pete Cavalli, Brandon Albrecht.

Others: Tom Chart, Julie Stahli, Kevin McAbee, Don Anderson, Mike Mills, Koreen Zelasko, Matt Breen, Katie Creighton, Ben Felt, Kevin Bestgen, Ed Kluender, John Caldwell, Jenn Logan, John Hawkins, Cat de Vlaming, Aly Hink, Cameron Walford, Christian Smith, Randy Staffeldt, Mike Partlow, Mike Fiorelli, Chris Michaud, Brian Hines, Zach Ahrens, Travis Francis, Darek Elverud, Ben Schleicher, Matt Fry, Dave Schnoor, Jerrad Goodell, Tildon Jones, Tory Eyre, Kyle Dick, Jacob Mazzone, Adam Barkalow

Thursday, January 25, 2018

Biology Committee: Melissa Trammell, Jerry Wilhite, Harry Crockett, Dale Ryden, Paul Badame, Pete Cavalli, Brandon Albrecht, Tom Pitts (via phone).

Others: Tom Chart, Julie Stahli, Kevin McAbee, Don Anderson, Mike Mills, Matt Breen, Katie Creighton, John Caldwell, Zach Ahrens, Jerrad Goodell, Tildon Jones, Kevin Bestgen, John Caldwell, Ed Kluender, Jordan Nielson, Matt Fry, Dave Schnoor, Randy Staffeldt

By phone: Charlie Ferrantelli, Edalin Koziol, Patrick McCarthy, Melissa Mata, Laura Bellinger

Convened: 4 pm Wednesday January 24th, 2018

1. Introductions, agenda modifications, & welcoming of new chair, Melissa Trammell
2. Discussion of draft report "Abundance and survival rates of razorback suckers *Xyrauchen texanus*, Green River basin, Utah, 2011–2013" by K. Zelasko, K. Bestgen, & G. White. Brandon said the report was well-written and well-done; all of his comments were addressed in the latest revision and proposed that the report be moved for approval at this time. Dave recommended the continued consideration of antenna data in population estimates. Melissa reminded the committee about the work done in Black Rocks using both capture and antenna data. Dave reviewed the presentation by Maria Dzul on using both datasets in the Grand Canyon. Kevin Bestgen said the next step in this analysis would be to examine the incorporation of that data. Kevin McAbee asked about the recommendations presented to increase first-year survival. He thought the report explains that the stocking program is successful and he thinks additional funds might be better used in the field to increase wild recruitment rather than working towards further increasing survival of stocked fish. Koreen explained that she offered the suggestions as a potential tool to increase first year survival, not as a recommendation to prioritize those efforts over others. >The committee tabled discussion on prioritization of efforts to improve stocking success vs wild recruitment to future meetings for both bonytail and razorback sucker (PDO will add to future agendas). The committee approved the

report as final, barring any final comments from the reviewers, and recognized Koreen's work as thorough and complete. > Julie will finalize and post to web.

3. Review 2017 Nonnative Fish work and discuss 2018 plans - Nonnative fish annual reports are posted to the UCRP website and available for review. Kevin McAbee praised all the PIs for their nonnative efforts, and thanked those that presented at the meeting. The PIs now annually discuss each year's nonnative fish efforts by conference call instead of through the nonnative fish workshop. This works well because there are not large-scale changes from year to year. The PIs do not have any major revisions to recommend on any nonnative fish scopes of work.

Walleye - Travis Francis presented work at the Researchers' Meeting, information can also be found in the comprehensive walleye report.

- i. Recommendation - continue targeted walleye removal at current levels and continue to target hotspots of capture in response to environmental conditions; continue to monitor for spawning and potential recruitment.
- ii. Important notes:
 1. Duchesne River - continue UDWR opportunistic sampling in coordination with Ute Tribe; smaller fish and high catch rates (Fiorelli presentation at Res. Mtg.).
 2. Walleye was captured in Johnson Bottom (suspected to be Red Fleet escapees because of co-occurrence with yellow perch).
 3. Hotspots in Lower Green (Tusher Diversion and Green River St Park to Ruby Ranch) increased catch in 2017.
 4. Lower Westwater Canyon increased catch is troubling, but walleye were not encountered during humpback chub monitoring.
 5. High numbers of gizzard shad in the Colorado River may support increased walleye populations.
- iii. The BC approved the above recommendation and recommended that all PIs scan all nonnative fish for PIT tags before destruction.

Dale asked if we have an indication of whether or not we will be permitted to sample along the Duchesne again in 2018, as this is an obvious source of walleye. Kevin said we will continue those discussions on an opportunistic basis and agreed this is important. Matt Breen clarified that access is dependent on flows, operation of the fish passage, and 3 species work and could not commit to specific nonnative fish efforts in the Duchesne. Matt could reallocate efforts out of 123b as opportunities allow. The committee supported reallocation as Matt deems appropriate. Tildon Jones noted that relationships between USFWS and the Tribe are being rebuilt and the Program is open to any sampling efforts the Tribe may be interested in. Melissa asked if PIs thought additional triploid/diploid testing would be helpful. Kevin clarified that the current protocol recommends testing all walleye <300 mm and that is funded by the Service (outside of the Program). Kevin has the protocols and can distribute as needed. No additional testing was recommended. Paul Badame said Red Fleet's outlet will be screened in 2019 (which was the

source of yellow perch and potentially walleye last summer). Harry asked about the otolith work on walleye occurring in the Colorado. Travis said he has not heard anything additional on that project, but will pass on any information to Dale to return to the BC. UDWR will continue efforts to add both sonic tags and PIT tags to walleye in Lake Powell to track movement. Paul recommended that all sonic tagged fish be returned to the river instead of destroyed. UDWR will floy tag all sonic tagged fish so they are easily recognized. >Chris Michaud will figure out a unique floy tag for this purpose and distribute that information to the group.

b. Northern pike - Ed Kluender presented at Researcher's Meeting

- i. Recommendation: continue early season netting where possible, especially in the Yampa; early season electrofishing is not as high a priority; continue Steamboat to Hayden work, with population estimate about every 5 years; monitor Browns Park production closely.
- ii. Important information:
 1. High flows from Flaming Gorge created high quality northern pike habitat in Browns Park, lots of YOY captures over a long time span representing multiple cohorts.
 2. Stewart Lake razorback suckers were found in northern pike stomachs near Stewart Lake outlet; UDWR is protecting that channel from large piscivores in early spring.
 3. Gill netting in Yampa River - lower catch rates, but more effort is occurring because it continues to be the most effective and efficient removal.
 4. A substantially large 2015 northern pike cohort was not found in the 2017 Yampa electrofishing sampling at high densities.
 5. Steamboat to Hayden - 3 passes in April; will age fish for spawning dates to increase presence in spawning window; population estimate about every 5 years (will target years without Colorado pikeminnow estimates).
 6. Low captures of northern pike in the Colorado River; none in mainstem sampling, only 2 in backwater downstream of Rifle.
 7. Mamm Creek Merwin trap and sampling continue to work.

Tildon expressed concern that individuals from Browns Park will show up in the wetlands this next year and asked for continued focus on wetland/river inflows. Jerry asked if anyone has looked to see if large piscivores might be eating wetland fish as they are released back to the river in the fall. Matt acknowledged that they have never really looked in the fall. >UDWR-Vernal will explore options to protect those fish for a longer period because fish coming out of the wetland seem to have high site fidelity, which may make them vulnerable to predation in the channel. Harry asked if the Yampa River population estimate would be focused specifically on the Steamboat/Hayden reach. Kevin confirmed that it was because it matches with historical efforts and could provide a long-term comparison data set. John Hawkins asked for two

marking events followed by a recapture event and then cleanup events to try to remove the counted fish. The estimate would provide a baseline to assess net effectiveness at Catamount once it is installed, and that less-frequent, more-comprehensive estimates are preferential. The effects of the Elkhead net and netting work may also be better evaluated by an estimate. >PDO will add discussions about northern pike population estimates in the Yampa to future agendas, as appropriate.

c. Smallmouth bass - John Caldwell presented at the Researchers Meeting

- i. Recommendation - continue current efforts for removal, as crews know where to sample and when; continue abundance estimates where ongoing; continue Surge; low snowpack in 2018 may encourage bass reproduction and recruitment, so crews should prepare for earlier runoff and increased effort
- ii. Important information
 1. Increased catch of YOY and age-1 in Colorado River (warm autumn temperatures) and lower Westwater Canyon catch of large bass are troubling.
 2. High flows in Green reduced catch of smaller bass in Lodore, Whirlpool, and Echo.
 3. Concentrations of age-1 fish are high near White/Duchesne/Green confluences.
 4. High quality bass habitat is present in the Duchesne. Flow management is likely the only way to control that population.
 5. Desolation catch rates declined substantially, and catch was concentrated in a 10-mile area.
 6. White River population continuing to establish and expand despite control. FWS will sample additional sections in Colorado, which have not previously been sampled between CPW and UDWR; UDWR will adjust timing to increase catch with improved water clarity.
 7. Declining catch in both Middle Yampa and Yampa Canyon of adults. Even with subadult increases, we continue to suppress adults in Yampa River. Surge continues to work and Elkhead screening was a positive action.

Kevin reiterated the potential effect of low snowpack on early reproduction and told PIs that increased sampling effort may be needed this year. Melissa expressed concerns about the increases seen in the White River. Kevin recommended consideration of a flow/sediment release from Kenney Reservoir. Tentative explorations of these concepts indicate that the operators may be willing to work with us, but there may be legal/logistical constraints that would need to be worked out. Tom Chart noted that we are currently working on flow recommendations and a basin management plan, which could be used as an opportunity to incorporate creative management actions. Tildon said there are three channels that can be operated independently that we might be able to use to create optimal conditions for bass disruption. Jenn Logan noted

that drying out some of the channels post-spawning may have an effect as well and expressed concern about the amount of water required to move sediment far enough to not impact roundtail chub and bluehead sucker populations. Cameron said the operator didn't know about the Program but seemed open to discussions; Cam also recommends thorough exploration of what turbidity/flow would be needed before we try to change operations. John Hawkins asked if there are small-scale efforts that could be completed to explore sediment dynamics, potentially as part of Surge efforts. Pete asked if there were any options to manage flows in the Duchesne to affect bass reproduction. Kevin Bestgen said each spike flow assessment would have to be considered on a site specific basis with the tools available at that point and recommended continued exploration of what effects we can cause in different situations. Literature does not exist regarding nest abandonment from turbidity separately from flow changes, so we don't know what levels of turbidity would be needed to impact bass. Paul said there is evidence from a fire on the White that might provide guidance. >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. Cam suggested expanding e-seining below Taylor Draw Dam, targeting age-0 fish. The committee recommends that future discussion occur within the RIPRAP process and potential adjustments of future scopes.

d. Other info

- All adult grass carp tested were diploid (3 in Green and 2 in Colorado). Dr. Kocovsky is applying for internal USGS money to create a risk assessment for the Colorado River specifically.
- Gizzard shad were the most abundant species removed in Colorado River in 2017 - Are gizzard shad going to exit Lake Powell in high numbers post-quagga infestation? Gizzard shad are common in Lake Mead, but gizzard shad hasn't established in the Grand Canyon despite being in large numbers in Mead.
- Utah chub captured in Green River Canal likely escaped from Scofield Reservoir (Price River basin). During a recent site visit, Paul Badame observed hundreds of thousands of fish escaping over the spillway, but noted that similar events have occurred in the past without population establishment.
- The committee recommends that PIs record all captures of yellow perch.

Adjourned 5:55 pm

Convened: 8:00 a.m. Thursday, January 25th in UDWR Vernal conference room

4. Welcome, introductions

5. Scheduling

- a. Next meeting - April 2 1:00-5:00, April 3 8:30-5, Grand Junction office, FWS conference room;

- b. 2019 Researchers Meeting - Jan 15-16, BC Jan 17 - Moab
- 6. Elect 2018 BC vice-chair - Harry Crockett elected vice-chair.
- 7. BC October summary approved. >Julie will finalize and post (*done*)
- 8. Reports Due List - the committee reviewed and updated.
- 9. Review of Desolation Canyon Humpback Chub report

John Caldwell reviewed the comments from the BC. Most of the comments were based on what data was used when and clarifying descriptions of data. Survival estimates were produced from 2001-2015, but they used tagged fish from 1985. 2011 was excluded because there were not enough recaptures in that year. John added additional descriptions where appropriate to reduce confusion. Pete said his comments were addressed and encouraged further exploration of using antennas to assist in population estimates. Melissa encouraged the use of the Black Rocks example to incorporate antennas into the next Deso-Gray sampling rotation. Paul said those options would be explored in the next scope. Kevin Bestgen noted in the importance of placing antennas outside of the study area (which would require specific definition of the study area) and suggested working with Gary White on study design. Katie Creighton said Mary Connor will be helping with the design process and reiterated that Deso-Gray is a unique system with its own sampling challenges. Tom Chart wanted the BC to be aware that in the previous draft report the authors characterized the population as stable in the long term, but the recent draft indicates that the data collected from the 1990's to current do not support stability. The BC supported and approved the draft as written.

The next sampling effort is scheduled to occur in 2018, so changes in scope were discussed. John would like to increase use of antennas and hoop nets in conjunction with trammel netting and reduce the emphasis on electrofishing. John is interested in mapping habitat types throughout the canyon to help extrapolate sampling efforts across the system. Tom Chart supported the addition of hoop nets and antennas in 2018 and suggested the mapping efforts occur after John has had a few more years of experience in the canyon. Melissa said that other efforts during nonnative fish and other population estimates provide electrofishing data throughout the canyon. Paul said Utah also completes 3-species work in each basin every 4 years. The goal is to create a community monitoring effort for each of the mainstems. >Julie will finalize report and post (*done*). >UDWR will provide a revised scope by email by 1/31/18, BC to provide comments by email by 2/9/18 to Tom Chart. BC approved new scope, posted to the web on 2/20/18.

- 10. System Conservation Pilot Program: TNC and TU - Jordan Nielson & Edalin Koziol

The System Conservation Pilot Program is a drought mitigation program designed to explore an incentive based, voluntary market for consumptive use water to provide system reliability in the Colorado River. In other words, a market to keep Lake Powell and Lake Mead levels high enough to continue to meet Colorado River compact obligations. In 2017, participants in the program from the Price area were obligated to send nearly 2000 AF down the Price River to Lake Powell. Because of the high water in the spring, they sent more than five times that amount.

If all Utah projects are accepted for 2018 there will be an additional 5000 AF in the Colorado River that would have been consumptively used on crops. Far more water will be conserved in the Green River by farmers and ranchers in Wyoming. Additional projects are also developing in

Colorado. There may be an opportunity to use the System Conservation Pilot Program in the future to work hand in hand with other conservation goals in the Colorado River.

Edalin described the problem of drought and its potential impacts to the Colorado River Compact. Long-term water supply in the upper basin is expected to decline. Therefore, we need to manage that risk and plan accordingly. The SCPP was authorized by Congress in 2014 as a means to create a market for consumptive use savings, and pilot projects are primarily funded through the Upper Colorado River Commission, Bureau of Reclamation, and major water providers. Trout Unlimited is involved to preserve both warm and coldwater habitats. TNC involvement is focused on creating solutions prior to the emergence of a water crisis. There is a market for this program, as applications under this program have increased from 2015 to 2016, and again to 2017, particularly with agricultural operations. Split-season fallowing projects are common in Wyoming; farmers get the early season hay and then stop watering and graze in summer rather than produce hay. Full fallow, alternative crops, and other projects are common in Colorado. In Utah, full season fallowing is common, abandoning marginal alfalfa production. The 2018 goal is to expand the Program to larger entities (canal companies vs. single producer). Large proposals were received from Native American tribes, water districts, and entire watershed basins. Average costs are about \$165 per acre-feet. Price is based on the crop, not the water.

Grand Valley Water User Association - implemented a 2017 pilot project participation to investigate how the water user association could protect itself from drought, how the community would react, and how its operations could add a new revenue stream. Individual users within the association applied to participate (10 users won the lottery to fallow 1250 acres). 3200+ acre/feet water savings at ~\$1 million in payments. These water savings directly benefited the flows in the 15-Mile reach. The Association wanted to expand this effort, but instead of using SCPP, they are enacting their own program for smaller acreage landowners. Reduced water use on ~1000 acres for ~2200 AF reduced consumptive use.

Price River - Carbon Canal Company - initially there was reluctance to participate; no applications were received in the first year. In the second year, 6 applicants saved ~1900 af. As part of an Emergency Watershed Protection project to rehabilitate their diversion, TU provided some match and enrolled acreage to reduce water use. TU and TNC want to expand this effort in the Price watershed to other canal companies with the goals of ensuring consistent water in the river and eventually providing fish passage.

The program is progressing by increasing the scale of the implemented projects, including growing up to the entire basin scale. Key questions: Who pays? How much risk is acceptable? How do we ensure the water makes it to Lake Powell? Can we store these savings in CRSP reservoirs and then release them at environmentally important times (i.e. summer base flows) and send that water to Powell? Expand the localized benefits to a basin-wide scale.

Melissa emphasized we definitely want the saved water to be used at appropriate times. Jordan described that the program needs to be reauthorized beyond 2018 and it's important to mention support to elected officials. TU thinks they can expand the program to \$10-12 M per year. Tildon clarified that this program allowed preservation of water rights, and short-term non-use without risk of losing those rights. In Colorado, there is no modification to the water right, but protecting those flows to Lake Powell is an important remaining question. In Wyoming, project size was limited to determine how saved water could be shepherded downstream. In Utah, Jordan has

communicated with Green River Canal Company and will continue to do so. Unique partners, project styles (non-fallow), and larger scale projects make applications more likely to be funded.

11. Update on Green River Flow Evaluation Team - Don Anderson gave the group an update. Kirk LaGory should have a revised report out to the technical committees in March. Summaries of Reclamation's flow modeling results are being completed and proposed monitoring plans for the experimental flows being finalized. Concerns have been raised by NPS about the effects of spike flows and elevated base-flows on vegetation and potential channel narrowing which may lead to additional monitoring (see 12 below).
12. NPS proposes a strategy to monitor biotic and abiotic resources potentially affected by the experimental Green River base and SMB spike flows, and establishment of an adaptive management process to inform Program decision-making based on the monitoring results. NPS is concerned the recommended experimental flows will narrow the variability of base flows, which may encourage establishment of vegetation and channel narrowing. NPS funded an expert opinion white paper that should be ready for publication and distribution to the BC soon (*2/7 update; will be published by NPS in March*), which outlines the importance of establishing a monitoring program to ensure any changes are documented as they occur. A workshop will probably be convened to develop decision pathways based on observations (similar to many of the presentations offered at the Researcher's meeting). >Melissa will distribute information as it becomes available. Harry asked if NPS would request that monitoring would be provided by the Program. The details would need to be worked out across multiple agencies.
13. Floodplain updates
 - a. Review any BC comments on floodplain prioritization document - Tom Chart reviewed the scope of the prioritization and noted that we are looking for additional information on larval presence in the Colorado. Katie's team has provided monitoring information from the lower Colorado reaches. The next step will be to get surveyors on the ground to determine elevations of each location. That information has been provided for Matheson.
 - b. MC approved \$20K for preliminary design plans at Stirrup. USBR will provide an initial set of concept plans. BLM has expressed concern around the ownership of Stirrup and whether it belongs to Forestry, Fire & State Lands (Utah) based on the high water mark. Jerrad has been working with the State to try to clarify. Forestry & Fire clarified that a permit would be needed for the channel, but did not provide information about ownership. Tildon said this has not come up before during other efforts on the refuge, but he was understood that it only applied to the navigable waterway and not wetlands that attach at high flows. >Paul will bring this information to Todd Adams (Utah's rep on MC) to gather Utah Water Resources perspective. Tildon said we stocked bonytail into the Stirrup this year and saw good survival, but low growth rates, and noted the continued importance of this wetland.
 - c. Review of flow releases from Flaming Gorge in 2017 and lack of razorback sucker production - Flow releases were driven by >200% normal snowpack, which created flows out of Flaming Gorge of 8600 cfs starting in March. Flows decreased to 6600 cfs for about 3 weeks in May, then increased to 8600 cfs in June which coincided with larval presence. Flows below the Yampa confluence increased from 14,000 to 18,000 cfs when larvae were present, but many of the wetlands had connected a month earlier and were likely seeded

with nonnative predators. Tildon and Kevin Bestgen stocked larval fish in Johnson to test their ability to get through the exclusion device (all exclusion devices are different). Kevin conducted light-trap experiments to discover distance effectiveness. Light-trapping may have yielded information on food sources available for larval fish, which is being explored by LFL. At least one wild razorback sucker was documented in Johnson; wild larvae were documented in Shepherd and Stewart. No fish were discovered after summer in Shepherd, despite multiple sampling trips. Tildon worked with the refuge to try to reset the wetland for next year, but it was not possible to drain it to reset it. The refuge may be open to treatment if a permit is attainable. Both wild and hatchery fish may have been part of the fall release from Johnson. Tom noted that this year provided key information about our ability to achieve Reach 2 peak flow targets. Regardless of the flow conditions in the Green, if the Yampa does not contribute significantly, attaining the wetter Reach 2 peak flows may be impossible. Flows also affected larval Colorado pikeminnow through both temperature and flow, with 7-9 C differences seen between the Green and the Yampa at the confluence and persistent high flows. Kevin Bestgen reiterated the importance of both flows and timing in supporting Colorado pikeminnow recruitment. First larval presence was July 2 and high flows were sustained until July 4; base flows were not achieved until July 11.

- d. USGS and CSU larval drift study - couples a physical model of the river (USGS) with experimental larval releases (CSU). The primary release area will be near the historic spawning bar to examine drift to nearby wetlands. The BC approved \$40k last fall but those funds (along with BOR funds targeting other non-federal agency) are currently held up in the Departmental review process. Melissa asked if it would be better to postpone to another year with higher water. Kevin Bestgen has been assured by USGS that it could be done in any year, but is also concerned that low flow conditions may not provide optimal information.
- e. Matheson update - Zach Ahrens said that phase 1 construction which was planned for FY17-18 will now occur at earliest next fiscal year in conjunction with phase 2. Phase 1 includes excavation of the pond and channel. The permits were delayed as phase 1 and phase 2 were lumped together. UDWR is now short \$110,000 that is available in FY17-18, but potentially not in FY18-19. The project has a lot of support at the State.

14. Stewart Lake update

- a. Matt Breen presented information regarding Stewart Lake (attached presentation). The inlet channel was dredged this fall. It is important to use the inlet for water management to provide maximum fill and adequate water quality. It was last dredged in 2012 following 2011 sediment deposition. UDWR will likely have to dredge this every couple of years.
- b. Matt provided more specific updates on UDWR's plans for cattail management in Stewart Lake. Cattails overtook all the open water habitat that was present in 2016. Selenium remediation operations (fill / drain each year) promote cattail production. This remediation precludes many options for cattail removal. Therefore, burning is the best option. Utah Forestry, Fire, and State Lands have created a burn plan for the wetland for spring 2018 which will remove >70% of the fuel load with initial burn, and subsequent burns to maintain open habitat. The plan provides a local training opportunity for firefighters and will aid in the safety of the nearby communities. Impacts to fish from ash are a concern, but without

action, the wetland is not useful for fish. Flushing the wetland will be attempted prior to larval drift. Matt emphasizes cattail management needs to be a part of all wetlands we manage.

- c. Matt requested that the Program build assistance for dredging and burning into the SOW as a Program commitment. Estimated ~\$5000 cost per dredge, projected to occur every other year. Burn team costs ~\$1000 for travel and logistics and will occur annually. >Matt will revise the SOW for FY19 and beyond.

15. Update on SSAs - Tom Chart

- a. Humpback chub SSA was approved by Regional Director Noreen Walsh on December 13th; Tom and RD Noreen Walsh will complete necessary Service reviews; the next step will be a 5-year review in early 2018. Kevin McAbee will be the lead for efforts in 2018.
- b. Colorado pikeminnow PVA: A draft report was provided to the PVA team on October 24th; Phil Miller will revise based on comments and a draft final will come to BC for review in early February. The SSA that will follow has the least clear timeframe, but the SSA and subsequent 5-year review deadline is Sept 30, 2018.
- c. Razorback sucker SSA: PDO will begin working on this soon, now that the Colorado pikeminnow PVA and humpback chub SSA are nearing completion. Julie Stahl will be the lead for this effort, with the goal to complete the SSA and 5-year review by Sept 30, 2018.
- d. Bonytail 5-year review to be completed by end of FY18-19, but without a SSA.

16. Review report "Pit tagging small bodied razorback sucker and bonytail"

Matt Fry has experience with tagging small razorback suckers held for broodstock. The committee received the report on 9/29/17. Pete Cavalli and Dale Ryden submitted comments. Many of the comments were clarifying in nature that Matt will address in the text. Matt requested assistance to improve/clarify the statistical analysis; Tildon volunteered. Tildon also suggested PIs use the pre-loaded PIT tag needles and trays to improve efficiency and reduce damage to fish being tagged. >The committee members send any additional comments to Matt Fry in the next few weeks and Matt will bring it back at a future date. The committee thanked Matt for his efforts and recognized the importance to increase releases and prevent unnecessary culling and potentially to tag smaller fish in the field.

17. Health condition profiling workshop update

A workshop was held on November 29th in Grand Junction, with representatives from most of the hatcheries in the Upper Basin. Wade Cavender and Roger Mellenthin (Fish Health Specialists for UDWR) outlined and presented the program and procedure. Participants were able to dissect bonytail and razorback sucker (two fish for each participant) for hands on experience. The process takes 2-3 minutes per fish, with a requirement of 30 fish per lot. Each station will now collect this information and submit it with STReAMS submissions. Then this information can be associated with stocking events in STReAMS.

Dale asked if guidance on submitting this information, guidelines and timelines, need to come from the PDO. Julie is advocating for more standardization between the annual reports and the STReAMS submissions. She believes a more thorough guidance for the hatchery data standardization is appropriate and > will provide that as time allows.

18. Mitochondrial DNA discussion -Tildon Jones

FWS is accepting suggestions for species that might be fully mapped for mitochondrial genomes. Differences in mitochondrial DNA would allow for identification of species regardless of phylogeny. We could also use environmental DNA (eDNA) where a biologist would take a water sample to test for presence/absence, which might be appropriate for either endangered species or nonnative species (ie burbot). Many sportfish are already mapped, 3-species are already being worked on, the *Gila* complex has been covered. The recommendation from geneticists is to have 5-10 complete sets. Tildon recommends mapping the 4 endangered species. In GenBank, three complete sets are available for razorback sucker; two are complete for roundtail chub. No complete sets are available for Colorado pikeminnow, humpback chub or bonytail. The committee prioritized humpback chub, roundtail chub, bonytail, Colorado pikeminnow then razorback sucker.

19. Review of Upper Basin Researchers Meeting topics and potential impacts to Program work plan -

Melissa emphasized the need for further discussion into smallmouth bass control with flows and turbidity, along with other novel ways to control nonnative fish. Tom Chart said the hydrological presentations were interesting in the context of recommended flow regimes. Melissa recommended a presentation from the USGS if there was interest, potentially in conjunction with a report from the GREAT. Tom also emphasized the continued focus on antenna information and appropriate use.

20. Previous Meeting Assignments were reviewed and amended.

Adjourned at 12:51

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 (broodstock development / genetics)

As identified in the 2012 sufficient progress assessment and requested by the Management Committee, the **Program** will develop an action plan for establishing refugia for humpback chub (avoiding getting bogged down in genetic analysis). 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 Czaplá sent to BC 1/21/15); >Melissa Trammell will find and send the plan development proposal document to Tom Czaplá 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 Czaplá 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 Czaplá 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 Czaplá** 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.

2. Kevin McAbee suggested the database manager’s first assignment should be summarizing and analyzing the STReaMS bonytail data, to provide the committee and hatcheries with an initial idea of the number of fish that remain in the system over time, and the characteristics of those fish. The Committee agreed. *1/12/17: Julie presented some information at the researchers meeting and will continue this work with the PIT antenna information. 5/23/17: Presented information. >Julie Stahli will continue to look at flow relationships and health conditions. >Tom Czaplá will get health condition information distributed and check with Bozeman on the fatty liver analysis. Wahweap and Ouray-RH are the only two who are doing health condition analysis. Tom has asked all hatcheries to do this prior to stocking. Krissy Wilson put up a google site with all necessary references. Tom said we will provide additional training later in the year, maybe October. Tom contacted Gibson Gaylord (Bozeman) who was doing fatty liver analysis. He has samples from Ouray (conditioning ponds that are in natural conditions and normal fish) and Mumma. Results*

will be presented in summary for bonytail addressed below. Tom Czapla will ask for additional context from the Bozeman Lab. The group (below) is talking about sampling wild roundtail chub to use as a comparison species, but needs to work out details.

3. 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.*
4. **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.*
5. 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.*
 - b. **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.
6. Discussion on prioritization of efforts between stocking vs wild support of razorback sucker. **PDO** will incorporate into the planning process
7. **Chris Michaud** (UDWR-M) will determine a unique floy tag to insert into radio-tagged walleye and distribute that information to the group. These fish should be released alive into the river to establish movement patterns. – 2/12/18: Done, floy tags are yellow and say “Do Not Kill – Research Fish”.

8. **UDWR-Vernal** will explore options to protect juvenile razorback suckers in the channels just outside of Stewart Lake. Fish coming out of the wetland seem to have high site fidelity which may make them vulnerable to predation in the channel.
9. **PDO** will add discussions about northern pike population estimates in the Yampa to future agendas as appropriate.
10. National Park Service white paper regarding monitoring pre and post-spike flow. **Melissa Trammell** will distribute information as it becomes available.
11. 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.
12. 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.
13. Update Stewart Lake management SOW. **Matt Breen** will revise the SOW for FY19 and beyond.
14. The hatcheries need new guidance from the PDO which will incorporate HCP protocols. **Julie Stahli** will provide that as time allows.