



Biology Committee Summary

January 15, 2020 3:15 pm - 5 pm MST, January 16, 2020 8:30 am- 2 pm MST

Ft Lewis College, Durango, Colorado

Attendees:

BC Members: Dave Speas, Melissa Trammell, Paul Badame, Harry Crockett, Dale Ryden, Derek Fryer, Tom Chart. By phone: Pete Cavalli, Tom Pitts (day 2)

Day 1: Kevin McAbee, Tildon Jones, Julie Stahli, Lori Martin, Zane Olsen, Clay Tyler, Matt Breen, Mike Partlow, Matt Fry, Jojo La, Chris Michaud, Katie Creighton, John Hawkins, Brian Hines, Chris Smith, Don Anderson, Mike Mills, Keena Elbin, Kevin Bestgen, Travis Francis, Ben Schleicher, Amy Crittendon, Darek Elverud, Ryan Christianson, John Caldwell, Ben Felt, Jenn Logan, Tory Eyre

Day 2: Kevin McAbee, Tildon Jones, Julie Stahli, Lori Martin, Matt Breen, Mike Partlow, Chris Smith, Don Anderson, Mike Mills, Keena Elbin, Ryan Christianson, Ben Felt, Jenn Logan, Tory Eyre

Wednesday, January 15th

CONVENED: 3:15 p.m.

1. Nonnative fish discussion –

- a. Review of key findings – Kevin McAbee thanked Mike Partlow, John Hawkins, and Travis Francis for their presentations describing the 2019 efforts managing smallmouth bass, northern pike, and walleye, respectively, during the Researcher’s Meeting. Kevin continued by highlighting key findings from the 2019 field season. In previous years, this hour was developed to request changes in strategies, fieldwork, and budgets. PIs are not requesting those changes for 2020 because we have mostly reached the limit of our effort under current budget levels and because we are conducting the most useful field efforts. Kevin noted that the BC did cut budgets for certain nonnative fish projects and described cuts occurring in 2020.

Smallmouth bass: Catch rates were generally lower than in 2018 because of weak spawning success related to higher flows in 2019. The catches of the age-1 cohort of smallmouth bass spawned in 2018 was proportionally lower in 2019 than the years immediately following other high smallmouth bass production years, such as the density of the 2013 cohort caught in 2014. Kevin and PIs believe that this demonstrates that our

work may be reducing the production capacity of smallmouth bass in the basin. The 2018 year class appears weaker in the Green River (specifically in Desolation Canyon), but stronger in the White and Colorado Rivers. Viable size structures seem to persist regardless of effort levels in places like the White River, continuing this troublesome trend for this river. Catch rates for the Colorado River were down, but the smaller size classes are present. Adult populations are suppressed in most places, with various levels of young fish, which is a dramatic difference from a decade ago. There are persistent concerns, including populations in the White and dryer hydrologies that remain challenging. Fewer passes will occur during Project 110, despite bass spawning in that reach. On the Colorado River, the gravel pond work will not be performed in 2020. This work has previously removed sources of the certain nonnative species like black bullhead and largemouth bass. Paul asked about what the plan is for the White River in 2020. UDWR and FWS have updated the geographic coverage of the reach so that crews will only float in areas where they perform smallmouth bass removal. The reaches will switch at Bonanza Bridge. The flexibility and the coordination between the offices is incredible and allows the Program to make a lot of progress in reducing fish populations. He praised the PIs for their safety, effort, and collaboration.

Kevin Bestgen said the LFL did not provide an update around the native species response to nonnative populations (Project 140) at the Researcher's Meeting. Age-0 bass numbers were down across the Yampa River. Bass accounted for about 4% of the fish community, they are typically around 30%, and the bass were smaller than normal. Native fish then responded well with higher population levels, but no flannelmouth sucker were captured. Kevin Bestgen said that Project 140 will also be reduced in next year's budget.

Northern Pike: Over the last five years, northern pike catches have been declining basinwide. Only one pike was caught in the Colorado River despite intense sampling. CPW's work at the Mamm Creek Pitts have been successful in eliminating northern pike. However, pike have shown up at East Rifle Municipal Pond which will require additional effort to control. In the Green River, catches are lower than they were a decade ago and individuals captured there are probably from source populations in the Yampa River. The Yampa population has declined since gill-netting began, and efforts are underway to assess that population's abundance more accurately. Mark-recapture efforts were completed this year, data analysis is forthcoming. The Program did lose access to place gillnets in backwater 151, which was an area of high catch rates. CPW is working on regaining access. CPW worked with a landowner to berm off a backwater at the Ghost Ranch, which was a pike production area. Kevin McAbee thanked Billy Atkinson for that effort. The current catches in the Yampa River are dominated by younger fish. High catch rates of younger fish have happened before, and the catches did not lead to a subsequent increase in larger fish; we will continue to pay attention to that population and track and remove the younger fish produced this year. Kevin McAbee encouraged action outside of traditional shocking efforts and noted a lot of the recent successes have been novel ideas like netting backwaters or off-channel pits.

The largest problem is the presumed illegal introduction of pike into Kenney Reservoir, coupled with catches in the White River close to Taylor Draw Dam. This represents a new in-channel location within the White River basin for this problematic species. CPW has been removing northern pike from the reservoir, but their presence is still concerning. Tom Chart reminded the BC that a White River contractor will be brought on by CWCB to develop the White River Basinwide Management Plan and asked if there were things that we should keep in mind when interfacing with them. >Kevin McAbee said he would start conversations with the PIs to develop lists of possible projects should opportunities arise. Melissa Trammell said she would prefer to have tools to contain the northern pike population in Kenney if they are not eliminated completely.

Kevin Bestgen said CWCB is considering providing funds to the Water Center at CSU to investigate novel methods of controlling northern pike in reservoirs in the Yampa River basin. If funds are approved, Kevin will be using these funds to look at pike spawning and reproduction in reservoirs. The efforts will focus on evaluating spawning timing, vegetation levels, and possible reservoir management actions to influence management decisions at Stagecoach Reservoir and others across the watershed. Harry Crockett said that the Upper Yampa Water Conservancy District is aware of this effort. CPW also attempted to reclaim Chapman Reservoir in the upper Yampa watershed in 2018, but the treatment was not successful; therefore, they treated it again in 2019. Sampling indicated that there were no pike remaining after the 2019 treatment.

Melissa Trammell asked about the streamside gravel pit that was reconnected to the Yampa River main channel during high flows in 2019 that was mentioned at the Researcher's Meeting. Kevin McAbee explained that the river breached two levees at a gravel pit near Craig and created a new channel through the gravel pit pond. The new habitat looks favorable for pike. Elam Construction owns the pit and is working on ways to restore the pit levees, in conjunction with the USACE. Discussions are ongoing in regard to what the channel will look like after the rehabilitation work. The ACOE and Elam Construction have been working closely with the Program to ensure that remediation efforts will not enhance nonnative fish habitat when the project is complete.

Walleye: In the Green River, catch rates were very high immediately below the Tusher Diversion. UDWR coordinated efforts by moving effort from the middle Green River to this location to address the problem. Walleye sizes are different between the middle and lower Green River, with the lower reach harboring smaller sizes. In the Colorado River, there are reaches with higher catch rates than other reaches in the Colorado River, in addition to smaller fish caught in the fall. The evidence, as described in the 123d annual report, points to continued migration of adults out of Lake Powell. Principal Investigators (PIs) have brainstormed what questions we need to answer to better manage this species and recommend developing a technical report to review current knowledge, data gaps, and potential research. While the annual reports are comprehensive and basin-wide, there is a need for a better synthesized report to dig further into the existing data. Dave Speas asked when that might be added to the workplan. Kevin McAbee indicated the tight work

plan that was just completed does not leave room for something of this magnitude. Kevin pointed out this might be helpful before the 2023 program vision is solidified. He envisioned that this would likely be a more data summary and review, and identifying data gaps and future research needs. Tom Chart suggested NFWF Section 7 funds would be appropriate for this project. Kevin McAbee also pointed out there are two components to walleye management: stocking for sportfishing in reservoirs and management of the species within rivers. The States are currently investigating reservoir management possibilities, such as sterile fish stocking. Harry Crockett asked if this would be similar to the modeling reports done for smallmouth bass and northern pike. Kevin McAbee indicated he didn't see it being that sort of analysis because that analysis was more quantitative, based on mark-recapture studies; this report would make recommendations for future research. This work could be done via a grad student or existing agency personnel. Dave Speas asked if there were any discussions about reallocating effort from other species specifically to walleye. Travis Francis said the PIs make those decisions on the fly as targeted removal near Westwater Canyon is typically very important, but this year was not very productive. They adapted to target larger populations in Professor Valley. Dale Ryden noted that the offices do what makes the most sense, specifically in relation to nonnative fish removal. Kevin Bestgen reminded the BC that Green River population estimates for Colorado pikeminnow, specifically for juveniles, are declining; which he attributes to higher walleye populations in the lower Green River. He advocated for additional effort in that reach. Dale said it is common to find adult walleye populations in the same areas as young pikeminnow. Melissa Trammell asked if the PIs are taking stomach contents of captured walleye. Chris Michaud said they do collect stomachs; most are empty, but they did find at least one consumed bonytail in 2019. Tildon Jones said one or two pikeminnow were found in stomachs of walleye during Colorado pikeminnow population estimate passes in 2018. Melissa Trammell said the fish coming over Tusher Wash or through the power plant may be disoriented and are especially susceptible to predation by walleye. Chris Michaud said since the diversion was rebuilt, walleye have been present right below the passage that was included. There may be some advantage to the blocked fish passage at Tusher because it concentrates walleye and makes catching walleye more efficient. But there are disadvantages because native fish are very vulnerable after coming over the diversion. Chris recommended removing the blockage, but potentially timing that to occur after serious removal efforts have been completed, which may allow for efficient removal of walleye and subsequent pikeminnow passage. Chris said walleye are commonly captured at the return channel, but that walleye were found there before the rebuild as well [see related discussion the following day; Summary Item #11]. Tom Chart asked if there was any sampling information from the San Juan waterfall that may indicate timing of walleye migration. Dale said they pick them up in the spring when razorback sucker are also common, but specific timing is uncertain as walleye would have already traveled many miles up the San Juan before they are detected. They may have traveled quickly or have been in the lower river for a long time.. Travis said smaller size classes of fish are captured in fall sampling vs spring sampling on the Colorado, so migration patterns may change based on

life stage.. Paul said movement dynamics are a priority for information gathering, noting that the middle Green and Desolation Canyon harbor some of the largest walleye in the basin, indicating they may be staying in reaches where they have plentiful food. UDWR has been looking at walleye movement in Lake Powell, but noted that it is difficult to track them after they leave because antennas are not common in the arms of Lake Powell. Darek Elverud said far more walleye are found in the Colorado arm in Lake Powell than in the San Juan. >Add the walleye research report to the next BC agenda to determine scope and timeline.

Kevin reviewed other species of interest. Largemouth bass increased in the Colorado River in 2018 and 2019, potentially from off-channel sources. Removal of nonnative fish from ponds has been discontinued in 2020. White sucker are still a concern in many reaches. Also, 23 striped bass were captured in the Colorado and 2 burbot were found in the Green River. One of the burbot was captured in Mitten Park near the Yampa River confluence, the other at Razorback Bar immediately downstream of Dinosaur National Monument. One grass carp was captured in the Colorado River and many green sunfish were captured in the White River, which presumably spilled out of Kenney Reservoir.

Kevin McAbee said a lot of data sharing occurs annually and praised the PIs for their adaptive efforts. There has been interest in a nonnative fish workshop and asked what the goal would be for a workshop. Melissa said periodic discussions don't provide sufficient information to keep track of long-term trends. She said reviewing the smallmouth bass model would be helpful. Dale Ryden said we should be open to meeting at different times of year, not requiring it to occur before the work planning process. Kevin McAbee agreed that we should consider all timing options; he is open to all suggestions and encouraged feedback from the BC and PIs in coming months. March was suggested as a potential timeframe. Dave Speas said a workshop could host a discussion about a request for proposals to figure out what novel solutions we should be working on. On a related topic, he described Reclamation's Challenge Award grant program where the government awards prizes to individuals who develop novel ideas or technologies to address a widespread problem that agencies are addressing. Dave gave an example of a proposal to eradicate quagga mussel using CRSPR technology.

>Add a nonnative workshop discussion to the next BC agenda as well. Kevin said a good nonnative discussion was held during the post-2023 planning technical workshops, which may provide a good foundation for future discussions. Kevin said in the last decade, the nonnative fish program has made substantial progress at keeping populations under control and reiterated the importance of that success.

2. Review reports due list

- a. The BC approved allowing the CNHP final report to be a compilation of the five annual reports on development of the database.

3. Discuss potential PIT Tag/Database session - Dave Speas sees a need for a session specifically to discuss how to use antenna data more effectively. Presentations at the Researcher's Meeting showed that there are PIs across the basin that are looking at how to best use the data in independent analyses and incorporate the data into population estimates. The group last met in Ft Collins at CSU in spring of 2017. Dave said that meeting was productive, but the concepts were still pretty new. With new information it may be time to revisit the conversation. Dave said Dr. Mary Conner at USU is still working on these concepts with other fish species and CSU presented some interesting analyses of razorback sucker as well. Tom Chart suggested that we collaborate with San Juan PIs if there are issues that overlap between the programs. Paul supported the concept but suggested that specific goals and outcomes should be defined in the scoping of the workshop. PIs recommended separate workshops for population estimation/antennas and nonnative fish work. Harry said many of the questions will require university support. Dale noted there may be some things we can address outside a workshop. >Dave will work with the PDO to develop an outline and will reach out to PIs to submit questions.
4. Elect BC vice-chair – Dave nominated Derek Fryer to serve as vice-chair. The BC welcomed Derek as the new vice-chair. Dave acknowledged Harry Crockett's service during the last year as chair and thanked him for leading the group.

ADJOURNED: 5:00 p.m.

Thursday, January 16th

CONVENED: 8:00 a.m.

5. Bonytail stocking – Zane received a request from David Ward (Grand Canyon Monitoring and Research Center) who is seeking 5,000 bonytail larvae for research purposes. Zane frequently has volunteer spawned fish that are available. The BC supported providing the fish to David.

6. Canal salvage in the Grand Valley – Dave Speas reminded the BC that canal salvage was eliminated during the budget scoping process. Volunteers from several agencies, including CPW, FWS, NPS and BOR completed a smaller canal salvage project. Dale said FWS has completed salvage for the past 15-20 years in two canals, Grand Valley Irrigation Canal and Grand Valley Water Users. About a week after the canals were turned off, they would look for areas that were still holding water and then sample using electrofishing or seine nets to salvage fish. There are a number of areas that can hold up to 6 ft of water all winter long, including a few siphons and other areas that are difficult to sample. Irrigators typically need to pull the screens from time to time during the irrigation season, so canal salvage was designed to ensure fish were recovered from the canal. Salvage can be dangerous as many items are discarded into or entrained in the canals (e.g. rebar, riprap, shopping carts, trash) and canal access on foot can be difficult. There are weather concerns, including an inability to salvage in rainy conditions because it's dangerous and can damage canal roads. Salvage success varies widely based on conditions. FWS crews have pulled up to 60,000 fish out of the canals, primarily the non-listed, native three-species, but low numbers of endangered fish are caught in most years. Dale noted that sampling at the end of the year only picks up a certain percentage of the fish entrained, and more loss may be occurring throughout the irrigation season. Dale believes this is a worthwhile effort, for both native and endangered fish in the river. Carp, channel catfish, and white sucker are also present in the canals, but few toothed predators are present, meaning that survival of prey fish can be pretty high. Endangered fish have been captured, but they are typically stocked razorback sucker or stocked bonytail. A large portion of native fish are common in GVWU because there is more opportunity for entrainment and there is more standing water. Dale thinks there is a resident population of fish in the canal and that spawning is occurring in the canal, specifically roundtail (multiple year classes have been collected). Dale typically uses a barge shocker mounted in a pickup truck. Annual salvage efforts typically require a crew of 8 people for two weeks. They block net the canal and then shock between the two nets, collecting fish along the way, and depositing them in a hatchery truck.

FWS and CPW have received phone calls asking for canal salvage from members of the public, which is different than in the early years when people were uncomfortable with FWS presence along the canals. The canal companies are interested in salvage efforts, both from a recovery and a compliance perspective.

Harry seconded Dave's suggestion of revisiting placing this project on hiatus. Harry felt it generates a lot of goodwill and cooperation with canal operators. CPW spent more time than

they originally planned working on this, and Harry didn't think that would be possible in out years without assistance. Tom Pitts asked whether canal salvage is a requirement of the 15MR PBO. Tom Chart said we didn't see that in the PBO, but might need to revisit if listed fish captures increase. The PBO identifies a need to address take and determine its magnitude. The current salvage data indicates the screen operators are in compliance as the PBOs require monitoring plans be in place to assess take. Jenn Logan said CPW's effort in 2019 varied slightly from what Dale described. They went to the hotspots directly, and did some recon to identify others. FWS loaned CPW a stocking truck which was critical to making the project work. Both canals had a lot of fish in the hotspots. They completed 9 days of work, some in response to tips from the public. In GVIC, 1859 fish were collected, including flannelmouth sucker, roundtail chub, and bluehead sucker in order of abundance. There were also 4 razorback sucker and 7 bonytail. In the GVWU canal, 4185 fish were retrieved, including mostly flannelmouth sucker and roundtail chub. There were also 2 razorback sucker recovered. Four of the razorback sucker were stocked in Rifle in the previous 5 years, and 2 at Palisade. Six of the bonytail were stocked in 2019. Melissa pointed out that nonnative fish are left in the canal, so there still may be calls from the public as those die off. Dave recognized the relatively high abundance of roundtail chub and noted this project may serve as the source for repatriation and relocation projects considered by other programs.

Dave anticipates future conversations during work planning efforts. The FWS scopes were typically ~\$32K. Tom asked if we need to discuss cleaning debris out of the canal with the companies. Dale said debris is just part of the canal process and cleaning the canal between when it is turned off and when they salvage is not a reasonable request. GVIC could be rebuilt after 2023 plan because of complications with screen operation. . Tom asked if there could be other sources/ways for fish to get into the canals. Dale said it is possible, but not probable. Tom said it is tough to turn our back on this effort, especially with the high catch rates and the public visibility. We need to look for efforts that bring volunteers in, which may help address this problem and may spread the endangered fish message through the Grand Valley. Tom identified a paddling group, led by John Whipple, interested in organizing floats for trash collection and promoting CPW and the Program. The group is new, but interesting in helping if opportunities arise. >Add discussion to July meeting agenda to brainstorm how canal salvage can be accomplished in the long term. Tom Pitts thanked the crews for getting this done in 2019. Tom Pitts also recommended sending a report to the canal company to make sure they are aware of what came out of the canal. Tom also recommended a press release including information on the screens and the salvage efforts.

7. HBC translocation plan next steps – Melissa reviewed that the Program has been talking about re-introducing humpback chub in Dinosaur National Monument (DNM) for the past few years. As part of this conversation, Rich Valdez voluntarily wrote a report about possible options for translocating humpback chub into various Colorado River basin locations, including DNM. Subsequently, Shane Capron identified some fish from the Grand Canyon that could be translocated into DNM. However, recent genetic reports indicate that Grand Canyon fish should not be moved into any upper basin populations. WAPA has spoken with

Melissa and PDO in an effort to restart this conversation. The PDO believes that NFWF Section 7 funds could support Rich in finalizing the report for the best way to reintroduce humpback chub into DNM. Melissa will be setting up discussions with Rich in the near future. The proposal to solicit Rich Valdez' assistance using Section 7 funds will be brought to the MC for approval. If anyone would like to be part of that process, please contact Melissa. The scope of the effort has expanded to consider all re-establishment options, not just translocation. Tom Chart said the goal is to create a planning document that can be implemented when funds and resources are available. Dave said having the report available from SNARRC is a key element of this effort. Tildon said a recent bonytail study (<https://doi.org/10.1002/tafs.10105>) indicates that the mating system in bonytail (aggregate, broadcast spawners) suggests genetic variation can be maintained from parents to offspring without paired matings and intensive management, given adequate conditions. If this is true for humpback chub as well, paired matings are not needed. Derek suggested that inclusion of some of the logistical issues would be helpful in this report to assess feasibility. >Melissa will send out the current draft and reconvene the group.

8. Flow implications from GREAT report and 2020 Green River flow request letter – Tom Chart explained the technical committees approved the GREAT report and the MC saw that draft in December. Additional hydropower analyses have been of interest to WAPA. Once those analyses are complete, the report will be brought back to the MC for final approval. Derek is currently exploring what analyses are of value and developing a scope which will be brought back to the MC at their next meeting. Derek is working hard to make progress on this effort and include the right people in the conversations. Tom said it would incumbent on the PDO to present the hydropower impact analysis in light of the potential economic benefits the program could derive from the GREAT flow experiments (e.g. reduced intensive nonnative fish control).. Tom's hope is that the 2021 flow request letter can include all three recommendations from the GREAT report and is seeking to have the analyses and approval complete by the time the Recovery Program's 2021 flow request letter is drafted. Tom noted all study plans also need to be in place before those requests are made. He will continue to update the Committee on progress on those study plans. The current flow request letter includes LTSP flows and adjustment to base flows using flexibility allowed under the ROD. Tom has switched the priority of those efforts, prioritizing base flow alterations in the coming year because of the status of Colorado pikeminnow in the Green River basin. The dire condition of that population is the focus of the Program this year. One example of how the revised priorities could affect implementation of the experiments is that the Flaming Gorge Technical Work Group could recommend an abbreviated release under LTSP to achieve the target base flow in a timely manner. Tildon clarified that if we need to make tradeoffs between LTSP and larval pikeminnow drift, pikeminnow will be prioritized, but conversations will be adaptive as the year develops. Melissa asked if the priorities will change in coming years. Tom said that the prioritization of the individual experiments is based on the best available information on the status of the endangered fish; as the status changes so could the priorities. BOR has expressed interest in the Recovery Program incorporating a matrix of possible experimental outcomes based on possible hydrologies.

Tom sees the utility in that, but recognized that with a flow request deadline of February 28, the program should preserve flexibility in our annual requests to account for the variable and uncertain hydrology at that early date. Tildon said flow runoff is very difficult to predict, in both timing and duration, and therefore management actions are also difficult to forecast by the request letter deadline. Dave asked why the delay is necessary and what the hydropower impact analyses will tell us because the amount of water (specifically requested for flow spikes) identified in the GREAT report was very small. Derek said before these flow elements are implemented on a routine basis, it is important to WAPA to have the implementation effects documented. Tom Chart asked if it was possible that an analysis on flow spikes could be possible before this summer. . Derek said he will work diligently on these efforts, but he is unsure if that deadline is reasonable. Derek reiterated that during the Management Committee meeting, concerns were stated about how it would be implemented and those concerns should be honored. Harry asked if there were additional concerns other than hydropower. Melissa said NPS has had some concerns around effects on habitat, but has a monitoring plan nearing completion to study those effects. NPS is not seeking to delay implementation of the experiments based on those concerns. Melissa reminded the group that pre-flow-spike field work is needed as part of the study plan, so agencies need notice before they are implemented. Tom Chart said that the PDO is working closely with Dr. Kevin Bestgen to draft a revised base flow study plan. Tom expects they will have a draft to share with the technical committees in the next few weeks.

9. 2018 – 2019 Sufficient Progress memo & 2020 RIPRAP review updates – Tom Chart said the Sufficient Progress memo went to the MC and received comments from State of Colorado, NPS, Water Users and Reclamation. Tom revised the memo accepting the majority of the comments from stakeholders and provided responses to their comments. Tom reviewed the document with FWS representatives in WY, CO and UT who approved the draft document. The revised memo is currently in surnaming for Regional Director signature. She may have comments or alterations to that document. Although slightly outside the reporting period, final Yampa River depletion accounting reports submitted by CO and WY were recognized in this draft memo as was progress on the 15-MR depletion report. The RIPRAP review will soon begin for the February 1, 2019 –January 31, 2020 period in the PDO. We will be doing internal reviews and sending that information out by email instead of in-person meetings. We are attempting to make this process more efficient to allow for time for competing priorities in the program.

10. Floodplain wetland updates

- a. Stewart Lake Marshmaster treatment - Mike Partlow said the Marshmaster treatment occurred at Stewart Lake in December. The treatment flattened all cattails in the wetlands, but didn't chop the material up. The crushing treatment eliminates starch reserves, which is similar to the burning treatment. A subsequent storm added moisture to the wetland which helped to compress the vegetation. The next step in the treatment is to submerge the flattened vegetation as soon as possible, which needs to occur before the cattails re-emerge to prevent oxygen from reaching the roots. A report will be

forthcoming from the contractor, including GPS referenced maps on the treatment area and success rates. Mike thinks the burning reduced the starch reserves as the plants did not grow as successfully this year as they have in previous years. Mike is currently working with the irrigation company to deliver water earlier than normal, but they need to wait for warmer temperatures. Matt Breen noted that UDWR has strong relationships with the company and he is not concerned with implementation.

- b. Stirrup revised construction plans - Scott Winterton and Jerrad Goodell joined the meeting to discuss the Stirrup. Tildon reminded the BC the Stirrup project has been discussed before, but a few things have changed requiring additional approval. Ryan Proctor from the Force Acct Crew at Reclamation visited the site and revised the estimate based on access and additional concrete work that is necessary. The changes in design and cost increases require additional review at the technical committee level before it is approved at the MC level. Tildon described the Stirrup wetland: The wetland is deep and currently connects at approximately 18K cfs. Razorback sucker larvae have been documented at this site in previous years. Bonytail have been stocked into the site previously. Construction will include a water control structure, a fish kettle, a fish screen, and a ramp for cleaning. The gate is on a lip within the water control structure, which will require pumping once the water reaches the level of the lip. Without the additional elevation of the gate, the gate could be flooded at baseflow levels so it is approximately 3 ft higher than the kettle. The kettle, however, is designed to be the lowest point in the wetland, allowing all water to drain to the control structure. The gate lays flat towards the river. One of the design changes removes the box culvert because getting it to the site was not cost efficient. The current cost estimate is \$709K, which is about \$150K more than originally scoped. The major increases come from increased concrete and man hours needed to install it. The cattle guard is 12 ft wide to move small vehicles across. In 2018, the wetland did dry up, so Tildon is fairly confident that we will be able to dry it through pumping with little groundwater infiltration. Tildon is unsure of the flow needed to inundate the wetland, but it should connect under most LTSP flow conditions. The structure should allow for controlled connections between 3,000 and 18,000 cfs, maybe higher. Extremely high flows would overtop the gate, but not the structure unless the berms around the wetland would also be overtopped, which has not been observed in very high water years like 2011. Fish biologist Jerrad Goodell, of the Vernal BLM will work in this wetland as an in-kind service however program funding is required for materials and seasonal labor (see approved scope of work). Operational costs are expected to be very low. UDWR and FWS-Vernal will help as needed. Don asked if the ownership issues have been resolved. Tildon will be applying for a permit with Utah State Lands regardless of ownership for construction. Jerrad and BLM staff are working on NEPA now. Construction is likely in 2021 in conjunction with the Starvation screen. Tildon asked the BC for approval for this project to be built. **The BC approved the project and expressed their support for modifying this unique site.** Tildon said the goal of the habitat group during post-2023 discussions prioritized a portfolio of wetlands that allow for diverse management options and noted that Stirrup is a key part of that

puzzle. Matt Breen said survival estimates from Stirrup indicated that fish preferred to stay in wetlands for 2-3 years. Mike asked if a boat ramp could be added into the scope. Jerrad said it would likely not be a big deal to add in to the NEPA analysis. The BC recommended inclusion of the boat ramp into the NEPA analysis and into construction if possible.

11. Tusher Wash fish passage – Tildon Jones said Ryan Christianson is working on the contract with the canal company for maintenance on the fish passage and the canal screen. The contract is not currently in place to transfer funds for that cleaning, but Tildon encouraged conversation about the benefits of increasing native fish passage against the costs of allowing walleye access to Desolation Canyon. The passage was built in 2016 and it filled quickly with driftwood and has not been cleaned since. Walleye are currently stacked up just below the passage, especially in spring. One option may be to allow the passage to fill during high spring flows and delay cleaning until after crews can go in and remove walleye. Paul asked if antenna data were available to see any native fish movement. Kevin Bestgen did an analysis as part of the Colorado pikeminnow population estimates. Transition rates for Colorado pikeminnow between the lower Green and the middle Green in 2011-2013 and 2016-2018 did not change, which may indicate that pikeminnow can ascend the structure. Kevin Bestgen did caution that with low capture rates, those results could be misleading. Tildon also looked at some data from the antennas at Razorback Bar and at Tusher Wash. He found at least one fish that went into the passage and showed up upstream, but the data needs further exploration. There are bypass gates used during higher flows that could allow fish to pass upstream. Paul said that walleye routinely move through Cataract Canyon so it may be habitat preference that is keeping walleye in the area rather than the clogged fish passage preventing movement. The area is nursery and juvenile habitat for Colorado pikeminnow and has dense sucker populations which may be appealing to walleye. Dave asked if not cleaning the structure creates concerns for the structure itself. Tom said the original agreement required keeping the passage open at all times. Kevin McAbee agreed, saying the passage is supposed to be kept operational year-round, with minor exceptions when unsafe conditions preclude cleaning. Harry asked if cleaning the passage would provide the answer to whether a clog is preventing passage. Tildon said 2020 will not provide sampling data upstream of the diversion, but Colorado pikeminnow population estimates on the Green resume in 2021. Data will be available targeting walleye below the diversion. UDWR is planning one bass removal trip from Deso through Swasey's in August, but that may not be at the correct time to find walleye. Colorado pikeminnow populations do increase between Swasey's and the diversion (~2 miles). Kevin McAbee said his priority is allowing passage for Colorado pikeminnow, regardless of how many cleanings that takes. Melissa agreed that allowing pikeminnow to transition is the most important aspect. Paul asked how the debris will be cleaned. Tildon said a backhoe would likely be needed to pull debris off the trash rack. They would then likely deposit the debris in the river downstream, but a lot of debris is already there from Tusher Wash. Kevin McAbee noted that dropping the debris close to the attractant flows would be a problem. Ryan said Reclamation told the canal company that they would likely need to buy equipment to clean out the passage, so any recommendations on appropriate

equipment would be timely. Ryan is planning on a meeting with them in the next couple months and needs to know what to include in the scope of work that allows for reimbursement. Dale recommended requesting cleaning to keep the passage open year around consistent with the original contract, and reevaluating in future years as needed. The BC agreed.

Harry asked where the walleye are specifically. Paul said walleye are present across the entire area between the diversion and Green River State Park, but they are highly concentrated just below the curve of the dam and right below the power plant.

12. Update on Colorado pikeminnow SSA – Tildon thanked everyone who submitted comments on the draft SSA. He is close to finalizing the revised document. Overall, comments were minimal. Tildon will send the revised draft to the Recommendation Team, which is made up of Assistant Regional Directors from legacy regions 6 and 2 in early February. The recommendation from that team will be taken to the Regional Directors where a final decision on a 5-year review will occur. Tildon anticipates completing the 5-year review in spring of 2020.
 - a. Update on recovery planning – Tom Chart reviewed the discussion at the Management Committee meeting around recovery planning in conjunction with the many priorities currently in the PDO’s work plan. Some members of the MC have been very interested in a recovery plan revision to help them understand the Service’s current vision of recovery and to provide direction for the stakeholders in planning for post-2023. The original suggestion was to address humpback chub, but Kevin McAbee outlined a strong case for working with Colorado pikeminnow instead. Tom said we did not want to get in front of the humpback chub proposed downlisting action and associated public comment period, and we are not interested in starting that process until the final downlisting rule is published. The decisions concerning what species to work on and when to begin will be made by Regional Director Walsh, but will likely be based on a recommendation from the PDO. Kevin McAbee reiterated that the 5-year reviews for both humpback chub and razorback sucker recommend revising recovery goals for both of those species, committing the Service to those actions in the future. So the Service will work on revised recovery plans, the question is when. FWS did not make the same recommendation for bonytail. Kevin also noted that the 5-year reviews and proposed downlisting rules for both razorback sucker and humpback chub discuss the Service’s perspectives on recovery and encouraged stakeholders to review those documents. Tom Pitts asked when recovery plans would likely be completed for CPM. Tom Chart said we would work with the recovery team on a timeline during the initial meetings, but was unwilling to commit to deadlines.

Harry asked where the razorback sucker downlisting rule is. Tom Chart said it has gone to FWS Headquarters, we are working through some solicitor comments. Kevin McAbee said it is very difficult to make any predictions on publication dates because of varying times of review.

13. CNHP request for species distributions – Julie explained that CNHP was interested in using the STReAMS database to populate their distributions database. Harry asked why they couldn't use the data compiled through CPW's permitting and reporting process. >Julie will ask CNHP about using CPW's records to accomplish this same task (*done*).

14. Administrative tasks

- a. Updates to scopes 138 and 29c - Paul reviewed that \$30k was approved to replace a fiberglass raceway in the last 29c scope of work. UDWR has had some internal discussions and agreed to provide additional internal funds to build a concrete raceway that will not wear out in approximately 5 years. UDWR is not asking for additional funds from the Program but wanted the BC to be aware. Julie summarized the changes to the 138 scope moving funds from the PDO to the Moab office to fund database management work over the next four months.
- b. Review and approve October 24, 2019, Biology Committee webinar summary – *A revised summary was sent with this agenda. - BC approved the summary.*
- c. Schedule next webinar – March 20th from 9 am – 2 pm.
- d. Schedule summer in person meeting – July 8, 1 pm – July 9 at noon in Grand Junction
- e. Dates and hosting for Researcher's Meeting 2021 - January 12-13, BC on January 14th hosted by Utah in Moab.

ADJOURNED: 11:36 a.m.

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.
 - 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. 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.*
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. The hatcheries need new guidance from the PDO which will incorporate HCP protocols. Julie Stahl 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.*

4. PDO will figure out how best to distribute spill contact information (potentially on the website). *Pending.*
5. 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.
6. PDO will start conversations around a razorback sucker monitoring plan, including revisiting the 2012 report for recommendations.
7. Tildon, Julie and Kevin Bestgen will use STReaMS data to explore signs of pikeminnow avoidance to electrofishing.
8. 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.*
9. Don and Tom will determine if canal salvage is required under PBOs. *1/24/20: Tom and Don read the PBOs, noting that a monitoring plan was required. Tom does not interpret that to mean that canal salvage is required.*
10. Kevin will work with PIs familiar with the White River to suggest potential management actions in concert with the White River Basin Management Plan.
11. Future BC agenda items:
 - a. Inclusion of canal salvage in future work plans.
 - b. Discuss options for a walleye synthesis report.