

Biology Committee Summary - May 26, 2022

BC Members: Pete Cavalli, Harry Crockett, Dale Ryden, Dave Speas, Melissa Trammell, AJ Keith, Tom Pitts, Derek Fryer, Sarah Seegert

Participants: Kevin Bestgen, Katie Creighton, Ryan Christianson, Darek Elverud, Colleen Cunningham, Kara Scheel, Russ Franklin, Matt Breen, Jerrad Goodell, Andrew Schultz, Gene Seagle, Zach Ahrens, Koreen Zelasko, Kara Scheel

Program Director's Office: Julie Stahli, Tildon Jones, Chris Michaud, Kevin McAbee, Paul Badame

CONVENE: 9:00 a.m., Thursday, May 26th

Review/modify agenda – Pete Cavalli called the meeting together following roll call and reviewed the agenda. Dave Speas added an agenda item to the end of the field updates to discuss upcoming repairs and upgrades at Wahweap and Randlett-Ouray hatcheries and the funding that will be available to complete that work.

Program Director's Update – Julie Stahli announced that Koreen Zelasko will be joining the Program Director's Office (PDO) in July as the new Propagation Coordinator and mentioned a few of her upcoming duties. She also noted that the Outreach & Communication Coordinator job announcement has been posted and thanked Mike Gross for his assistance while acting in that capacity. A meeting to discuss post-2023 funding decisions between the federal agency Regional Directors and State agency Directors was requested and has been scheduled for June 2, 2022. The report to congress has been approved by both Recovery Programs and will continue moving toward delivery to congress without a funding arrangement spelled out.

2022 Spring Hydrology & Colorado River Operations – Stahli reviewed a presentation provided by David Graf, who could not attend, covering the current hydrology in the upper basin. In addition, notes regarding operations to manage flows in the Colorado River are included in this summary although they were not presented.

Spring 2022 Upper Colorado Basin Hydrology:

1. The story of Winter 2021/22 and the changes in snowpack since the last Committee meeting. We were clinging to a 'near median' water year mid-March, but the lack of precipitation or snow in most of March, April, and May resulted in a late-May snow water equivalent (SWE) in the Upper Colorado Basin at a 90% exceedance level water year (i.e., worst 10% May 20 SWE relative to other years). Overall, the unregulated April-July runoff into Lake Powell is projected at 51% of the 30-year median (1991 – 2020), which believe it or not, is better than the 29% runoff season into Lake Powell in 2021.
2. Since January 2021, immediately after a very large series of storms in late December, we've lost ground in the southeast and northern parts of the basin, but improved slightly in NW Colorado (Yampa), and held our ground in the Upper Colorado and Gunnison basins.

3. A depiction of SWE and year to date precipitation as of March 14. Basically, a little below average in most all the sub-basins in the upper Colorado Basin.
4. A depiction of current sub-basin snowpack conditions highlighted by the bright yellow and red numbers. It is expected that by May 26th the peak flows in nearly all basins will have passed.
5. Comparison of how runoff estimates from the beginning of March have changed, with the hotter, 'redder' colors indicating a change for the worse. Since the Upper Green started badly and missed out on the Christmas-New Year's storms, that region has stayed bad. The upper Colorado and San Juan went from 'OK' runoff predictions in early March to generally 40-70% of median over the last 10 weeks.
6. The upper Green River basin has been very dry all winter. The Colorado River was doing better in March, but now is projected to be like the Upper Green at about 55% of median inflow (unregulated April-July).
7. Both Flaming Gorge inflows and the Yampa River are in Moderately-Dry categories near 80% Exceedance levels.
8. Aspinall ROD peak flow targets for the Gunnison at Whitewater were first met April 16, and have currently exceeded targets (e.g., 6,000 cfs 5/19). Shape of hydrograph indicates surging snowmelt in mid- and upper basins.
9. Yampa Flow Peak – most recent CBRFC Forecasts shows 12,000 cfs 5/21 as peak flow in 2022.

Historic User Pool (HUP) Coordination and Operation: Approximately 11,000 AF of carryover water from the 2021 HUP water was available for west slope beneficiaries in April. There are tradeoffs between using this water for downstream purposes prior to fill, and 'firming' prospects for fill as runoff proceeds. Thus thoughtful, prudent management of this 'pre-season' pool of water is warranted.

1. HUP Irrigation April Startup Coordination calls were initiated March 30 by Reclamation. These calls are intended to address potential development of an 'April hole' (flows below 810 cfs) in the 15-mile reach (15-MR) as irrigation demands in the Grand Valley ramped up.
2. These calls utilize several water-managing entities throughout the basin. Reclamation's upper Colorado basin Decision Support System model is coordinated with Colorado Department of Water Resources, Colorado Basin River Forecast Center (CBFRC) and National Weather Service weather information and includes best available information about irrigation demands in the model.
3. In anticipation of flows in the 15-MR diminishing below 810 cfs, HUP surplus was released beginning April 11 through April 15. 1124 AF was released with specific flows of ~150-250 cfs intended for augmenting flows below the GVIC diversion (head of the 15 MR).
4. Despite the releases, flows fell below 810 cfs April 15 and hovered around 600 cfs for 3 days Apr. 15-18, reaching a low of 555 cfs, before rebounding over 810 April 19 (note - there is a three-day lag between releases from Green Mtn Reservoir and water showing up in Palisade).
5. Consultation with the Grand Junction FWCO office suggested that short-term flow reductions of this magnitude this time of year would not greatly impact fish movement.

6. Flows have been above 1,000 cfs since late April and have been between 6,000-8,000 cfs since mid-May but are likely past peak as of May 26th. Flows will not reach intended peak flow targets beginning at 12,600 cfs (½ bankfull flow).

Coordinated Reservoir Operations (CROS):

7. A CROS coordination call was held May 20th to briefly discuss whether any opportunities for coordinated releases and bypasses from upstream operators could enhance the annual peak through the 15-MR without injury to water right owners. Reudi Reservoir will likely not fill; Wolford Reservoir will likely not fill; Green Mtn. Reservoir will only 'paper fill', and substitution releases from Williams Fork and Dillon Reservoirs are anticipated as they fill out of priority, so there really isn't any available unallocated storage at this time in the upper basin. Thus, the call concluded that unless significant changes occurred in the very near future, NO CROS OPERATIONS WOULD BE CONDUCTED IN 2022.

Audubon Society Wetlands Update – Tildon Jones

Jones talked about a site visit to the Audubon wetlands located in the Grand Valley. He met with Audubon reps and others to discuss plans for the wetland complex and the potential to use one of the wetlands to be managed for endangered fish. The wetland is situated between the Colorado River and the Redlands Water and Power tailrace allowing for both natural connection to the river and the potential to provide supplemental water for the “fish wetland”. Audubon is interested in providing habitat for multiple species through renovation of several wetlands in the complex with most of the habitats focused on forage production for waterfowl. Fish habitat development would be phase 3 of their ongoing upgrades and construction. Audubon is requesting a letter of support from the Recovery Program for development of one wetland to support native fish conservation. Audubon plans to use their own funds in combination with one or more grants they will write. Ducks Unlimited will provide design, engineering, and likely construction services as well. Cavalli asked if these ponds currently hold bass or other problematic fish. Jones said the Program breached the levy to allow fish access, but the inflow has since filled with sediment and the pond is currently dry. Speas supports the concepts discussed and thought the site visit was very helpful. Screening inlets and outlets to control fish movement was discussed with Audubon and they were supportive. Speas also thought that the potential to provide supplemental water would allow us flexibility in terms of species and purpose for use of the wetland. Crockett asked if we are offering support today. Jones clarified that he is looking for support from the Biology Committee (BC) to bring this to the Management Committee (MC) which would eventually approve a letter of support to the Audubon Society. Crockett would like to confer in with others in Colorado Parks and Wildlife (CPW) prior to approval but doesn't see any immediate red flags. Trammell asked if there would be a fish kettle or another way to collect fish. Jones said yes and showed where a new breach would be installed and a control structure to allow control of fish movement in and out as well as allow for fish collection. Pitts commented that the Grand Junction Reclamation engineers should review any plans and Speas agreed and said that the Provo Reclamation office may also look at it. Pitts mentioned that when this moves to the MC then it needs to be spelled out more specifically what role these actions play in recovery. Stahl explained that this provides a unique opportunity to support a new, highly interested, and publicly influential third parties' efforts which provide

recovery actions using their own funding, allowing us to conserve our capital and garner new public support. Ryden said that the way the flows move through this section of river is set up very well to allow natural entrainment of larval fish if that was a desired use of this site. There are also razorback and pikeminnow spawning bars just upstream of this wetland. It is also near the Service's Grand Junction office allowing for quick and easy access. The BC supported Jones continuing discussions with Audubon and then requesting the MC to consider a letter of support from the Program.

LTSP, Wetlands, & Bass Flow Spike Updates – Tildon Jones

The larval trigger study plan (LTSP) flows began on May 25th, following razorback larvae being first detected at the Cliff Creek on May 21st. Larvae detections at Cliff Creek and the Stewart Lake inlet continue to increase. Jones thanked the Flaming Gorge Technical Working Group (FGTWG) and Reclamation for acting so quickly. Flaming Gorge reached full bypass on May 26th which will continue through June 1. The Green River peak at the Jensen gage is expected to be near 18,000 cfs. The inlet gates are open at Stewart, Johnson Bottom, Old Charley, and Stirrup and filling. Sheppard Bottom will receive some water but will not be managed for fish entrainment since the river connection is expected to be brief. Starting the LTSP flows before Memorial Day was essential to avoid making changes to dam releases over the holiday weekend. Bestgen noted the timing for this was about as good as it gets with fish in the river and Yampa flows coming up at the same time. He expressed excitement over the ability to get all three experiments done in one year. Speas noted that the inflows to Flaming Gorge are in the 'moderately dry' category and that all three experiments would not be occurring if it was not for Drought Response Operations (DRO). He thanked Reclamation leadership and all the parties involved for their involvement and support and for how the releases were managed. Trammell agreed and said this has the potential to be a banner year for smallmouth bass that could be ameliorated by a flow spike. A coordination meeting will occur on June 6th to discuss timing of the flow-spike.

Pikeminnow Recovery Plan Summary – Tildon Jones

The current draft of the Colorado Pikeminnow (CPM) Draft Recovery Plan was summarized. Comments have been received from UCRP MC and SJRP CC members from Reclamation, New Mexico, and Western Area Power Authority. Two other agencies indicated their reviews would be forthcoming within the next few days. Jones discussed the recovery planning and implementation (RPI) approach to recovery planning, which primarily reduces the Recovery Plan to the statutory requirements and adds flexibility to the other components. He reviewed the components of the draft, including reviewing the separate roles that Species Status Assessments (SSA), Recovery Plans, and Recovery Implementation Strategies (RIS) play in the recovery planning process. In developing the CPM Recovery Plan, the Recovery Team updated the SSA to include information learned since the 2002 Goals were written. The Team developed a recovery vision, demographic and threats-based criteria, and general high-level actions needed to move pikeminnow from current condition towards the vision. The specific activities that are nested in the actions are still under development. Jones read the vision, criteria and actions as drafted. Crockett asked why 10 years was chosen for adult abundance, but 15 years was considered for recruitment. Jones explained that 15 years is the calculated generation time of a female to reach maturity, spawn, and produce offspring to replace herself. However, 10 years is the age at which most females are expected to reach maturity, so any adult over 10 years old

would be considered part of the adult population. Because the species is slow growing, and slow to mature, the longer time frames are needed to assess demographic processes contributing to species viability. The decisions to use 10 and 15 years for specific demographic criteria were long conversations within the team. Trammell asked when the time clock starts as we are currently at a low adult abundance. Jones said that 5-year reviews always look backward to assess the condition of the entire species. It's best to think of these criteria as backward looking to evaluate if the species is resilient and viable. McAbee reiterated that there are four criteria to evaluate multiple demographic processes for the species, to best evaluate if the populations and species are viable. McAbee noted the time and cost estimates are for completing the recovery actions, not an estimate of time to recover the species. Jones reiterated that these criteria are targets and not contracts. During the 5-year status review, FWS evaluates T or E status using the recovery plan as guideposts.

Trammell asked why the Grand Canyon was not assessed in the Recovery Plan. Jones said the feasibility study of pikeminnow reintroduction potential in the Grand Canyon will be included in the next SSA, but the Team thought there was too much uncertainty regarding establishment of the species to include specific targets. McAbee noted that the vision does refer to at least three populations, acknowledging that a fourth population would have value to the species' viability. Keith asked about overall resiliency categories from the SSA. Jones said multiple scenarios were assessed by the Team that were evaluated against a rule-set. Viability was developed based on how the four criteria merge together to achieve different population dynamics. Table 19 in the SSA is a good reference for that discussion. Also, Table 25 of the SSA summarizes how each demographic factor resiliency threshold combines for overall population resiliency. Jones reviewed that we are currently developing estimates of time and cost to complete recovery actions with the assistance of the UCRP MC and SJRP CC. The post-2023 estimates already developed will serve as the basis for the estimates. The estimates will be broad, not detailed, and extend over a timeframe determined in consultation with partners. The RIS will be the next step in this process, starting after we complete the time and cost estimates for the Recovery Program. Jones noted the RIS is comparable to a pikeminnow specific RIPRAP. Speas asked if the BC would have an opportunity to review the draft plan. Tildon said the MC representatives were encouraged to confer with their BC members in reviewing the draft plan. Stahli added that this is a Service document, and as such it does not go through the same review process we use for Recovery Program documents.

Spring Sampling Updates – PI's

1. FWS-GJ (See appendix 1 for field notes) – Dale Ryden: Replacing pumps at Horsetheif has been completed still figuring out if those old ones can be rebuilt as spares. Good RZ spawning effort w 80% larval success rate. Giving some of those larvae to David Ward. Remaining fry have been moved to ponds for grow out. Early numbers at fish ladders and passage were in the 1000's during increasing flows. The peak has passed, and fish passage numbers have declined. Nonnative fish (NNF) trips for walleye have already gone out. 68 walleye were collected on one trip during turbid flows and a 251 mm WE was collected, both of those items are concerning.

2. CPW (See appendix 1 for field notes) – Harry Crockett provided a summary and acknowledged that Kara Scheel is on the call; she has filled the position previously held by Jojo La. Nothing currently at Mamm Creek pit but they will take another look if flows reconnect it. New Highline net is in place and appears to be working great. White River NNF passes are being conducted currently to avoid interference with pikeminnow estimates. One large female pike was captured in Kenny Reservoir. Rio Blanco drained through the winter and was down to isolated pools by April and complete fish kills are expected, thus removing a pike population. Yampa - 128 pike removed and the CPUE is down from last year. EF start in early May and CPU appears low and no CPM have been encountered yet. Elkhead net was set and only one bass was captured between the net and the spillway this spring. Nothing of concern was captured in the spillway below Elkhead. Catamount - about 900 pike removed which is about half of last year. Ridgeway tournament will occur again this year. Sweitzer - had an illegally stocked smallmouth bass population. Monitoring is continuing and no additional individuals have been found. CPW is proceeding with screening and stocking per the approved Lake Management Plan.
3. CSU (See appendix 1 for field notes) – Kevin Bestgen: Mid-April crews headed to the Yampa River, completed one pass. The next few efforts will focus on CPM estimates and nonnative fish removal. Two passes are completed with no pikeminnow caught. High densities of bass have been caught in Lily Park. Increasing flows move the fish to the margins, giving us good capture rates, and they are catching large numbers of bass and pike, which is concerning. No ripe bass have been caught. The windy and snowy weather has complicated removal efforts. Sampling in Green River in Brown's Park has begun. Flows have come up which makes near shore areas accessible for removal.
4. FWS-Vernal – Andrew Schultz provided the update for the Green River FWCO. The office caught 28 pikeminnow over 3 passes through Desolation Canyon. They did catch a concerning number of smallmouth bass in Desolation Canyon. Nine pikeminnow were captured in the White. PIT antennas have been deployed in the Desolation Canyon reach, with 1 pikeminnow detected. The Ute Tribe has agreed to monitor the antennas and change batteries which dramatically extends the life of the antennas. Andrew thanked all the partners that help them accomplish the work. Light trapping started on May 10; the first larvae was detected on May 21. Old Charley and Johnson are open and filling. Antennas are out on razorback bar and Echo Park. Cleopatra's couch antennas will go out in early June. Nonnative fish removal projects will commence in June and the team will PIT tag all *Gila* species encountered. Andrew said lots of opportunities are available for people to help with sampling. At the hatchery, spawning has occurred for razorback sucker and occurred as expected. The hatchery will be looking to replace a lot of the materials used for the spawning. They have received 20,000 bonytail fry from SNARRC and they are doing well. Colorado pikeminnow have been stocked into two outdoor ponds in conjunction with David Ward from USGS. They have 2,500 other pikeminnow that need to be moved to other facilities (Ward might take 1,000). They continue to support a few humpback chub individuals from Desolation/Gray Canyons. Andrew also noted that the facility needs to get updated and are looking to improve the reliability of the water system, looking to achieve safer staffing levels and improve the hatchery. The facility has very low staff for a while which has made maintenance difficult. They have a long list of

improvements that can be shared. Melissa asked where the pikeminnow came from. Andrew noted they are pikeminnow from SNARRC that were brought in to help train Ouray staff on how to effectively rear the species.

5. UDWR-Vernal (See appendix 1 for field notes) – Matt Breen noted that weather has not been helpful which has resulted in some sampling being cancelled. The third pikeminnow pass is wrapping up today. Total of 7 fish in pass 1, 15 in pass 2, 22 thus far in pass 3. Razorbacks have been collected in designated miles. Stewart Lake's gate is closed, waiting for flows to come up. They are not expecting a complete fill, but they will pull in as much water as possible. The crew is planning to light trap in the inlet and in the wetland to determine densities and confirm entrainment. White River bass removal is waiting until FWS finishes the pikeminnow estimates.
6. BLM-Vernal (See appendix 1 for field notes) – Jerrad Goodell shared a few photos and a video of the first water entering the wetland through the recently completed water and fish control structure at Stirrup wetland. Light traps confirmed larvae, so Jerrad is filling the wetland. They are calibrating remote water management with the company that put in the gate. The wetland fills at lower levels, which lets it fill earlier. Following initial inflows, four presumed razorback larvae were captured just inside the gate this morning (5/26). Jerrad will confer with FWS to confirm the identification.
7. UDWR-Moab (See appendix 1 for field notes) – Katie Creighton said all walleye removal is focused just below Tusher. Flows were very low but 41 walleye were removed with similar CPUE from recent years. Two small walleye were captured. Smallmouth bass captured were similar to previous years, with no northern pike. More (71) walleye and smallmouth were removed during 128. Pikeminnow passes were delayed because of very low flows and should have potentially been delayed more. Two passes have been completed they only encountered 13 pikeminnow, which is very low in comparison to previous years. They did see a few 1-2 year old fish. Razorbacks were also captured at predicted amounts. Razorback larvae have been found in all predicted sites during Project 160. Zach said larval suckers were first collected on May 4th. A steep increase in Colorado River flows allowed for a pulse of hopefully sucker rich water into the wetland. Larvae have been confirmed in Matheson. Gate height is now 5.25 feet which is about 3 acres of area, which did not fill the entire wetland, but it is expected to be able to be maintained during the summer.

Bestgen expressed extreme concern regarding the number of Colorado pikeminnow that are currently being captured during this year's pikeminnow population estimate sampling (Project 128). The 2017 and 2018 estimates were each just under 900 fish and capture numbers were 557 and 346 respectively. The low capture numbers this year indicate that the upcoming pikeminnow estimates will likely decline precipitously from the last batch. He encouraged developing or supplementing broodstock if additional actions can be considered. Speas asked if we could start stocking progeny from the current brood held at the Southwestern Native Aquatic Resources & Recovery Center (SNARRC). Jones said that Tracy Diver's analysis indicated that the broodstock at SNARRC were not appropriate for stocking to the Green River subbasin. Speas asked what the timeline may be for generating production from the newly collected and more representative broodstock held at SNARRC. Jones said they are still genetically testing the collected individuals, most of which are age-2. He anticipated we are a minimum of five years away from production. In addition, the Program needs to consider how large we want the fish to

be when stocked. >**Badame** will add this topic to future agendas. Speas would like to hear more from SNARRC about whether we should be using the fish we have. The Committee and interested parties should refer to the 2019 Tracy Diver et al. Paper for in depth analysis and recommendations regarding the use of the existing pikeminnow broodstock: [Genetic evaluation and history of captive broodstock populations of endangered Colorado Pikeminnow \(Ptychocheilus lucius\)](#)

Bipartisan Infrastructure Law (BIL) – Dave Speas

Speas reviewed the passage of the BIL which identified \$50M for the environmental programs in the Colorado River Basin. A small team of Reclamation, water users, and PDO representatives from both Programs developed a preliminary list of projects that were priorities for the program to position the Programs to implement projects if funds were available quickly. The group focused on projects that were shovel ready. Some of those projects have already been approved for funding. Reclamation has provided \$8 million in their FY 22 BIL spend plan to the Upper Basin Program, covering the Grand Valley Irrigation Canal (GVIC) rehabilitation (\$6M) and improvements to the Service’s Ouray-Randlett and the Utah Division of Wildlife’s Wahweap hatcheries (\$2M). Reclamation expects the funds to be available for distribution in June. Dave is currently planning to transfer approximately \$1M to Wahweap and \$1M to Randlett-Ouray for those repairs and upgrades. Wahweap currently has a feasibility and build plan which is focused on upgrading the electrical system that runs to the ponds. They may also repair some ponds if they have money left over. Dave will be working with Randlett to spend those funds as efficiently as possible. Kevin appreciated Dave’s work on this effort and the Committee all provided words of appreciation to all who provided early groundwork which led to this outcome.

Discussion: Program Efficiencies – McAbee described how this topic originated from the Post 2023 conversations. The PDO used the directive to evaluate ways to save time on behalf of the PIs, committee members, and PDO staff. The Program has matured, offering new opportunities, such as the addition of a database and database coordinator that allow us to look at data beyond a single project. In addition, our focused has shifted from a lot of compliance monitoring to a more adaptive management framework, based on the large amount of trust that has been developed between and among the partners and PIs. We are talking about a few options today, some of which may not save funding specifically, but will save time and allow for its redirection into beneficial activities.

- STReaMS & data management – Chris Michaud reviewed updates for the STReaMS database. Michaud has convened a team of individuals who are interested in continual improvement to the database with a mission of leveraging multiple perspectives, refining database design, advancing data quality and optimizing data access. Michaud highlighted changes present in the permanent array data which include adding a PIA Gear Type for data queries as well as adding the ability to filter by array (which allows for pieces of the full antenna to be pulled out). He is almost done uploading 2021 data and provided a side note that uploading of the three species data (not managed by the Program) is often years behind. Michaud offered that the delays come because of process issues, not because of the PIs. The data we have is highly complex and is difficult and time consuming for PIs to manage. His goal is to address inefficiencies in the system to reduce workload for everyone and streamline the process. Improvement steps include standardizing data collection which can be customized for each office’s needs, allow for rapid generation of

data summaries, ease data collection in the field, and save a lot of time both in the field and in the office. In 2022, this process was implemented for Project 128. The data will be collected, submitted and QAQC'd by mid-June. Michaud noted one of the biggest advantages is that PIs can spend time on really thinking about the data. Bestgen said the process is going pretty smoothly, with a few bumps, but well worth the effort.

- Nonnative Fish (NNF) report consolidation – Kevin McAbee said we are focused on effective communication of this very complex element. The goal is to move deliberately towards improved reporting, to maximize quality and disrupt PI workload as little as possible. McAbee noted that many reports cover the same species, and only differ in geography or timing; yet these reports can be difficult to compare because of differences in reporting. The PDO believes that Michaud can create common figures for all reports (of a similar species) that allow for direct comparisons which PIs can easily put into their reports. Secondly, we usually depend on a single PI to consolidate data from many sources to present at the researcher's meeting. Michaud could consolidate all the data and produce figures and tables that will support that consolidated presentation. This would serve as the foundation for species specific basin-wide efforts in the future. As part of this process, he can easily generate summaries that provide the information needed for the annual performance reporting (PPR) to Reclamation as well. Trammell asked if there was room for specific requests if PIs have ideas around how they want to present things. McAbee agreed and thought next steps would be for Chris and Kevin to develop some drafts and then get feedback from the PIs. AJ Keith thanked McAbee for the effort and really appreciated the consolidation concept and noted that as a new member of the BC, a lot of McAbee's thoughts resonated. McAbee asked the BC and PIs to expect some examples in coming months and to provide feedback. His goal is to be deliberative about how the process moves forward to provide the most amount of benefit.
- Submission timing: data, fiscal reports, annual reports – PIs are currently expected to submit annual reports to the PDO prior to data submission. The only way we can implement the changes McAbee described is to flip the deadlines to require data submissions prior to annual reports. The proposed reporting schedule for NNF projects only would be:
 - **NNF data submitted by Nov 1** - Michaud and PIs would work together during month of November to create common graphs and figures. Data can always be submitted earlier if available, and PIs can discuss with Chris if November 1 is a tough deadline to meet.
 - **NNF annual reports due Dec 9**
 - **NNF coordination calls week of Dec 12th**
 - **PDO posts NNF reports by mid-Jan (~15th)** for BC review and assessment
 - **Researcher's Jan 31 - Feb 1 & BC Meeting - Feb 2**

The Committee and PDO will need to consider future scheduling of Researcher's Meetings in consideration of how this worked during the 2022/23 process. McAbee noted that we may be able to compress the time frame in future years once we have worked the bugs out. Matt Breen thanked both Kevin and Chris for their work on this as he thinks it has promise. He was concerned about the Nov 1 deadline for NNF data and thought that would be difficult to accomplish. McAbee said both he and Michaud will be flexible and are looking to work with PIs, especially for those who are still collecting data through October. Michaud reiterated the need to make incremental steps and make this slow and

reasonable. Michaud's goal is to cut the amount of time between field collection to submission by orders of magnitude. Crockett agreed with Breen and noted that November is a pretty crazy month for CPW PIs but noted he will do what he can to help support this process.

Visual Comparison of PIT Array Locations and Physical Collections – Chris Michaud talked about the different types of information collected during pikeminnow estimates. The data includes razorback sucker data in STReaMS from 2018 specifically during Project 128 from permanent arrays, portable antennas, and in-river captures. Michaud displayed the entire sampling area and then permanent antennas, which are typically not on the mainstems, but are mostly on tributaries. He then added portable antennas to the map, which are in targeted locations, mostly around spawning bars and tributaries in the upper Green and Yampa. Michaud displayed the Project 128 sampling reaches. He noted that this razorback data comes as an ancillary request on top of both nonnative fish removal and pikeminnow collections. He added permanent arrays which didn't produce a lot of razorback sucker within the sampling period, with the exception of Tusher Diversion which detected over 100. Michaud added portable submersible projects designed to pick up razorback sucker at known spawning locations, which all had more than 200 unique individuals. His conclusion is that these portable antennas may be an underutilized resource depending on our questions. Trammell asked what the ask is for the BC. Michaud noted there is no ask, just some information to think about as we consider antennas. Trammell called attention to the use of antennas just below some passage structures that document fish approaching the structures and then backing off. Breen noted that the antennas with a lot of data are from Project 172 which was cut from the program's budget.

Razorback Detection & Capture Patterns in the Green River – Kevin Bestgen reviewed that the Program requested that CSU evaluate razorback sucker data, particularly to develop population estimates. For the fish that were collected in 128, CSU developed a series of population estimates for 2008-2010 and again in 2013-2015, but the boundaries of the estimates were very large. In this latest analysis, they used both the captures and the detections shown by Michaud. Koreen Zelasko reviewed the physical captures from 2016-2018. She noted that 90% of the fish were only captured once, which is not useful for abundance estimation. When antenna detections were added in, they noted a trend within the numbers that indicates the antenna detections and physical captures do not work well together. For some reaches and years, there is nice overlap, in others, the detections are outside of the physical capture windows. Even with detection data, recaptures are really limited, which prevents good population estimation. In Desolation/Gray, recaptures from detections were higher when adding in all the detections throughout the years. To conclude, Zelasko noted low physical captures in some years and passes, timing of detections, and an absence of detections in some places mean that detections can't remedy the low physical recapture rate. She did note that this indicates a "good problem" to have in that there are too many fish to recapture efficiently. We will be bringing some questions back around whether or not we need survival estimates or abundance estimates, or recruitment metrics. Bestgen said a de-facto estimate can be created using survival estimates and known numbers of fish stocked. However, antenna data cannot effectively find any untagged wild fish. Trammell asked if we are using all data for survival estimates. Zelasko said the Barker model used for survival uses all data from all sources because it assumes an open model. Bestgen asked

that we consider sending assistance to the middle Green to help them boat all the razorback sucker they encounter. Bestgen asked if this analysis would be valuable to summarize and document in a report. Crockett supported having documentation and encouraged report submission. The Committee agreed.

Small Committee Creation: Future PIT Array(s) Locations & Purpose – The team should include PI's, Committee members, and people with analytical ability. Current volunteers include:

1. Dave Speas
2. One UDWR-Vernal Biologist (to be determined)
3. Peter McKinnon
4. Darek Elverud

>**Committee members and the PDO** will ask any BC members not on the call and any interested PI's if they are willing and available to join this small team.

Administrative and Consent Items

- Reports due list - Paul Badame reviewed and updated the reports due list in conjunction with PIs
 - >**Kevin Bestgen** will provide updated dates for multiple CSU reports
- Previous meeting summaries approved
 - January 27 meeting summary – Comments from Dave Speas incorporated.
 - March 15-16 meeting summary – Comments from Pete Cavalli and Dave Speas incorporated.
- July 11-12 Meeting in Grand Junction at the Doubletree Inn in the Grand Parlor room. The meeting will run from 1 - 4 p.m. on the 11th and from 9 -12 on the 12th. For the second half of the 12th, we will set up a site visit for any interested committee members to see the Audubon wetland (priority on Audubon) and Las Colonias Park for I&E signs installed last summer, Horsethief Ponds or somewhere else. A block of 15 rooms is available for reservation until June 20th at \$96.00 per night. The event name is “US Fish & Wildlife”.

Doubletree Inn
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ADJOURNED at 2:39 p.m.

Appendix 1: Detailed Field Updates

Grand Junction FWCO spring sampling updates

5/26/2022

We haven't had much of a chance to go through our data sheets yet, so this update is necessarily somewhat vague. In the absence of spring Colorado pikeminnow (CPM) population estimate trips this year, most of our office's field activities so far have taken place in either the San Juan River or Lake Powell. Most of our scheduled field work for the Upper Colorado River Endangered Fish Recovery Program is still to come.

Ouray National Fish Hatchery – Grand Valley Unit:

The two infiltration gallery pumps at the Horsethief Canyon Native Fish Facility (HCNFF) ponds have been successfully replaced. That work concluded on May 16th. There are a few small loose ends to tie up with this installation, but none that effect the ability of the pumps to successfully deliver water to the grow-out ponds. One issue still up in the air is that we assumed that the pumps being pulled out of the infiltration gallery would be able to be rebuilt and then retained on site to act as spare units for the infiltration gallery, when needed. However, those pumps (which were a fairly cheap model of pump) were in much worse shape than expected, once removed. They may not be able to be rebuilt and may instead need to be replaced with new pumps. We're still coordinating with BoR regarding this issue. Thank you to all the REclamation and Grand Valley Water Users (GVWU) employees who assisted with this successful pump exchange. GVWU also loaned us their boom truck to remove the old pumps and install the new ones, so thanks to GVWU for that as well.

Ouray NFH-GVU had a very successful razorback sucker (RZ) spawning effort this year. We got lots of eggs and had a hatching success rate above 80%. So, lots of larval RZ this year. We're making arrangements with David Ward from GCMRC to give him some of those excess RZ larvae to use in his ongoing nonnative fish predation studies (we've done this in several previous years). We received our bonytail (BT) fry from Southwest Native Aquatic Research and Recovery Center (SNARRC). Both young RZ and BT fry have been stocked into grow-out ponds at HCNFF for the 2022 growing season.

Grand Valley Water Users and Redlands fish passage facilities:

Both fish passage facilities are up and running. GVWU was opened on April 25th and Redlands was opened on April 26th. Prior to high flows (all 14 days of it), the GVWU fish passage was passing thousands of native fish per day (mostly native flannelmouth sucker, bluehead sucker, and roundtail chub). The numbers of fish per day were lower at Redlands fish passage prior to high flows, but were still several hundred fish per day (again mostly common native fish species). The numbers of fish using both fish passages dropped dramatically during the few days of high water, but as flows are receding, numbers of fish handled daily are increasing again quickly. Three of the four target fish species -- BT, RZ, and humpback chub (HB) -- have all used the fish passages so far this spring. No CPM have been

collected in fish passages yet, but it's still very early for CPM, so no large concerns associated with that yet.

We are still working with GVWU to hopefully get some sediment removal work done at the GVWU fish passage this year. In addition, the propane generator (which is approx. 20 years old) which powers the GVWU fish passage facility, has a leak in the radiator. This is about a \$4,500 fix and we are working with GVWU to get that problem fixed -- possibly by the end of this week.

Aspinall fish community sampling:

Larval fish monitoring trips for this study will begin sometime in the next few weeks.

Nonnative fish removal trips:

We have done a few nonnative fish removal trips so far this spring. Walleye numbers appear to be high once again. The largest catch for walleye on one of these trips was 68. The concerning part of that number is that this happened during a high water, high turbidity trip (most of our walleye are usually collected during low water, low turbidity sampling trips). In addition, we collected a small walleye (mid-200 mm TL range). While this fish may have come upstream from Lake Powell, it seems equally likely that juvenile walleye may indicate some level of in-river reproduction/recruitment by that species.

CPW field updates for UCRP BC, 5/26/2022

Mamm Creek pits:

No surveys this year. Will set the Merwin Trap in Pit #1 if flows below Glenwood Springs reach 12,000 cfs, the level at which the river connects to the pit through the notch. While flows are decent, it appears unlikely that we will hit 12,000. Current forecast is for a peak at 9,100 cfs.

Rifle Municipal Pond:

Completed 6 days of pike removal in April, with good depletion from 37 pike on the first net sets to four or fewer on the last days. Did one additional day recently and removed six. Slight reversal of the depletion trend probably just due to a month between sampling events. Most of the pike removed have been juveniles.

Highline Lake:

New spillway net is in place. Ben Felt checked it before and after the reservoir filled and it appears to be working great.

White River:

CPW is working in our non-native fish removal passes around the Service passes for pikeminnow estimates, so we don't interfere with the population estimate. As a result, our first pass is today (5/26). Did complete one three-species population estimate in April downstream of Rangely.

Kenney Reservoir:

Netted for five days with up to 14 net sets per day and a few overnight sets. Caught one very large female pike, gravid but still green. We were able to get into the coves in the upper lake this year. We captured and tagged lots of 3 species within the lake, particularly roundtail chub and flannelmouth sucker. We also caught quite a few mountain whitefish. Setting overnight at Kenney is problematic due to bycatch of native species. We generally check nets every 2 hours throughout the day to minimize mortality.

Rio Blanco Reservoir:

We continued draining the reservoir through the winter and spring using pvc siphons, gas pumps, and a diesel pump that USFWS Vernal loaned to us. The USFWS pump was extremely helpful. By April, Rio Blanco was drawn down to a few small, isolated pools of water that should experience complete fish kills or go totally dry by this fall, when reservoir outlet repairs are expected to be complete. We may be able to start refilling Rio Blanco this fall or next spring, depending on how long the outlet repairs take. This was a good opportunity to remove that pike population from a reservoir that is not connected to the White River but very close to it.

Yampa River backwater netting:

CPW and USFWS Vernal captured 108 Northern Pike during the 26 days that nets were set (4/4-4/29). This is a decrease in pike captures and an increase in days of backwater netting compared to last year. We haven't calculated CPUE yet but it will be a decrease from 2021.

Yampa River Electrofishing:

CPW started electrofishing the Yampa River on May 3rd and we are currently on our second pass through the 5 reaches that we electrofish. None of that data worked up yet but anecdotally CPUE seems fairly low. We have not captured a pikeminnow yet.

Elkhead Reservoir Spillway Net Evaluation:

CPW conducted the spring "pre spill" evaluation of the spillway net by setting a gill net in between the spillway net and the spillway and another gill net in the stilling basin, each set for 5 days, checked daily. One largemouth bass (216 mm tl) caught between the spillway net and the spillway. The net is evidently still working well and greatly reducing if not entirely eliminating escapement from Elkhead. The stilling basin net is not as informative about Elkhead escapement because fish can move from Elkhead Creek into the stilling basin at high flows. We caught 38 white suckers and one creek chub in the stilling basin; likely all came up from downstream.

Elkhead Reservoir:

We set fyke nets for three days this spring to capture and mark northern pike using FLOY tags. Will use the Elkhead tournament as the recapture event to get a population estimate. Captured 408 pike during that effort so we should be able to get a good population estimate. Closer to the tournament we'll electrofish to mark smallmouth bass, so as to obtain a population estimate from the tournament for that species as well. The tournament will be held June 18th - June 26th. As always, we appreciate the financial support for that from CWCB, and the logistical support from everyone who comes out and volunteers.

Catamount Reservoir:

21 days of fyke trapping and gill netting removed 892 Northern pike. This is 50% of the number removed in spring of 2021. CPUE roughly the same as in recent years (except 2020, anomalous due to covid restrictions). A sharp depletion emerged after day 5:

Stagecoach Reservoir:

Six trap nets deployed for two nights May 23-25. Only three northern pike captured.

Also set gillnets for two nights in a small wetland / pond adjacent to the reservoir that connects under County Road when the reservoir is closer to full. Caught 7 pike in there. It has a screen with a 1.5" opening; we're working with the District to try to replace that with a screen that will exclude smaller fish.

Experimental vegetation spraying is scheduled to occur in very soon this spring, an effort to reduce vegetation in the upper two feet of the reservoir, and thereby reduce spawning habitat.

Casey's Pond:

(Pond in Steamboat Springs, across the highway from the Yampa; connected but screened). Pike removal by gill netting 3 days in late April, removed 67 pike, slightly lower than 2021 and way lower than 2019.

CPW has just initiated discussions with the City about modifying the screen to further minimize escapement potential.

Crawford Reservoir:

Conducted netting for pike suppression this spring. Exact numbers unavailable but around 100 pike were removed.

Ridgway Reservoir:

CPW will conduct another smallmouth bass tournament at Ridgway this summer. As reported previously, the screen is completed and very impressive.

Sweitzer Lake:

We have begun design of an outlet screen per the approved Lake Management Plan. It still appears that we have eradicated the illegally-introduced smallmouth bass. Once the screen is in place we will stock with largemouth bass and other warmwater species compatible with endangered fish recovery.

CSU Larval Fish Lab

Yampa River 2022

Trip 1:

4/19 – 4/28

4/20: 9.9 Motor broke down on first section of Steamboat pass 1. Switched to Jet boats downstream for training

4/21: More Jet boat training

Completed 1 full pass-through Steamboat NP removal with the help of Vernal office (borrowed Honda motor). Good #s on lower stretch. Caught 39.5" female NP before she spawned. Few ripe females (4/27). Recap NP with PIT tag but no Floy tag left on fish. (3DD.003BBEB3C3). River flow @ 1200cfs. Mike Williams helped FWS-Vernal with project 98B for 3 days. Various crew members helped Kate Lawry with BA netting during this entire trip.

Trip 2: CPM pass 1

5/2 – 5/11

Day 1: 112-106.5 – Blizzard in the afternoon

Day 2: snow day – set fyke net in Morgan Gulch

Thursday – Saturday finished CPM pass 1 in LYC

Sunday – SMB removal pass 1 – good fishing due to flows increasing rapidly

Tuesday – Lily Park CPM pass 1 – CPW Meeker came to help with 2 boats and 4 people. Tory EL on River right, DT river left with 2 processing boats (1 per side). Great fishing, multiple NP and many SMB. No pikeminnow. Shocked around confluence but super windy in afternoon.

Trip 3: CPM pass 2

5/16 – 5/25

5/17: 124-117 Slow fishing (7330 cfs) – launched from South Beach

5/18: CPM pass 2 in Lily Park with just LFL (6 people) JP EL river left and DT river right. Really good numbers of SMB (55.3-52)

5/19: Red flag warning. Set fyke net in Horse Gulch in morning. EL Horse and Morgan Gulch. 1NP in Horse. Not much in Morgan Gulch.

Boat maintenance in afternoon. Replace Sea Monkey lower unit with déjà vu. Need to take other unit in to Jimmy to fix insert for reverse gate.

5/20: Snow Day

5/21: Check fyke and sample 117-109

5/22: 109-100

5/23: Lower stretch of Lily Park (52-47) just LFL: some NP and adult SMB throughout, no CPM

5/24: Upper stretch of Lily Park (55.3-52) w/CPW: High #s of juvenile, sub-adult SMB, several NP.

Sampled around confluence at end of day but still no luck catching Pikeminnow.

River dropped persistently for a week straight slowing catch in LYC but Lily Park remains productive for non-native fish removal regardless of flows.

Green River

Sampling underway Tuesday in Green River in Browns Park, to remove northern pike, and white sucker, and to monitor Colorado pikeminnow use of lower Vermillion Creek. Flows are coming up today (26 May) so sampling should begin to yield results soon.

UDWR—Vernal 5/26/2022 BC Update

128—Almost finished; 5 miles of 3rd pass to be finished today (5/26/2022)

Pass 1, 04/04-04/21:

- 7 CS—5 tagged, 2 untagged
- 84 RZ; designated river miles only

Pass 2, 4/25-5/05:

- 15 CS—10 tagged, 5 untagged. No recaps from 1st pass
- 55 RZ; designated river miles only

Pass 3, 5/10-5/26:

- 22 CS—15 tagged, 7 untagged. One recap from 2nd pass
- 132 RZ; designated river miles only

Totals

- 44 CS 490-845 mm TL
- 271 RZ

Stewart Lake

- RZ larvae captured by FWS in light traps at the Stewart outlet canal on Sunday 5/22
- Started filling (slowly) on Monday 5/23; wetland near equilibrium on Wednesday 5/25
 - o Closed gate yesterday, the majority of filling yet to begin
 - o Will resume filling when water arrives today or tomorrow (need a head of water); fill as fast as possible with available high flows, switch to maximum fill at inlet soon after
- Resume light trapping in outlet canal today to monitor RZ densities (FWS pulled traps Tuesday)
 - o Set light traps in wetland to verify entrainment when depth allows, Friday or Saturday

BLM-Vernal Spring Field Updates - 5/26/2022

- Light traps set on the river side of the gate 5-24, 5-25, and 5-26. Larval RZ caught all 3 days.
- Wetland filling began 5-24
- Larval RZ caught in the wetland 5-26
- SCADA is operational for remote operation of gate.
 - Gate measures and reports water levels on river side and wetland side of gate.
 - Gate can be set to maintain specific CFS entering wetland or raise and lower gate height remotely.
 - Measures cumulative total acre-feet of water entering wetland.



UDWR-Moab Spring Field Updates - 5/26/2022

#123d- Walleye removal in lower Green River:

- Focused walleye removal effort had a reduced window this year, from March 17, 2022- April 14, 2022, totaling 6 trips with additional effort piggybacking on Project 128. All focused effort has been on the Green River from approximately RM 128- 120, immediately below Tusher Diversion.
- Low water made access to habitat difficult (1800- 2500 cfs).
- Total effort has been 17.24 hrs of shocking with 41 WE removed -> CPUE of 2.38 fish/hr, which is consistent with previous years.
 - 2 WE under 250mm were captured.

- 15 SM were also removed with a CPUE of .87 which is also consistent with years past.
 - Effort will be focused soon on the tail end of Westwater on the Colorado River where a significant number of SM were encountered last year (26 fish/hr).
- Through Project 128 an additional 79 WE have been removed so far from RM 120- 0.
- No northern pike have been captured this year.

#128-Green River Colorado pikeminnow population estimates (lower Green River):

- The Moab Field Office began its first sampling pass for Project 128 on the lower Green River on April 23, and to date we have completed two full passes. The third and final pass will begin on May 27th and will be completed on June 5th. Discharge at Green River State Park has ranged between 2,400 – 11,000 cfs during the first two passes. Water temperature during the first two passes has ranged between 11.8 – 18.0 C.
- Low water on the Green River (~2,400 CFS at GRSP on April 23) during the first sampling pass likely negatively affected sampling efficiency and limited the ability of our gear to access suitable habitat during electrofishing, especially during the first ~ 30 river miles of sampling.
- Through the first two sampling passes for project 128 we have sampled 13 Colorado Pikeminnow (12 unique fish) ranging in size from 92 – 516 mm (average length = 293 mm). 12 of 13 CS were captured on the lower half of our LGR sampling reach (River Mile 60.0 – 0.0)
- Additionally, we have sampled 403 Razorback Sucker ranging in size from 320 – 573 mm (avg length = 472 mm).
- Non-native catch totals have included 79 walleye (average length 462 mm), 14 smallmouth bass (avg length = 235 mm), and 27 Green Sunfish (avg length = 104 mm).

#160- Larval razorback sucker monitoring in lower Green and lower Colorado Rivers:

- First sampling pass has been completed on the Green River from Green River State Park to the confluence. This was delayed due to low water conditions in late April. On this first pass larval fish were collected and suspected native suckers have been detected in multiple tributaries.
- A second pass for the Green River will start on 5/26/2022
- A first pass through Meander Canyon, in the lower Colorado reach, was done from 5/20/2022-5/22/2022. This trip was able to sample all priority habitats established in the past. Over half of traps contained larval fish with suspected native suckers.
- Overall all historic priority sites along the Green and Colorado have been inundated with current water levels and it is likely that Razorback larvae have been collected within samples at multiple sites.
- 48 traps have been set across 16 sites thus far.

#176- Matheson wetlands:

- First larval RZ collected (n = 1) at river/wetland interface ("inlet" hereafter) on the night of May 4th 2022.
- Continued RZ larval presence in the inlet through May 16th, when larvae were found in the most inland portions of the inlet (roughly 90m in length), a few meters outside the wetland gate.
- Gate opened on May 17th 2022.
- First larval RZ collected inside of wetland pond on the night of May 19th 2022.
- Entrained continuously until the evening of May 20th 2022. Peak was approximately 16k cfs.
- Conducted an additional brief entrainment pulse on May 21st 2022 (double peak).
- Gauge height of ~ 5.25' inside of the wetland pond at the end of the entrainment period.
- 3.1 acres wetted area as of May 23rd 2022. Still within the bounds of the excavated pond area-- i.e. water did not reach the pre-existing floodplain depression.
- General impression is positive. Larval samples collected from the inlet before and during the entrainment period were entirely catostomid, so the timing of ascending flows and larval

emergence seem to have overlapped in a potentially beneficial manner. On May 16th, the night before we began entrainment, catch rates from the inlet ranged from roughly 10 to 50 catostomid larvae per trap. Moreover, we ended with a much greater volume of water than in 2021.

- Caveats: we didn't have a lot of head pressure and there was some water already occupying the wetland due to our gate's inability to keep water out. As a result, it's somewhat unclear exactly how much river water was actively entrained vs. seeped in prior to entrainment and/or flowed in from inland water sources. We did observe that the plume of silty water propagated at least a hundred meters inland from the gate. Also, our confirmation of larval RZ presence in the wetland consists of only one light trap sample, and thus provides limited insight into entrainment dynamics--such as spatial distribution of RZ larvae during the event. For now, we're sticking with the approach of avoiding post-entrainment depletion of larvae by not continually sampling inside the wetland.
- Some cyprinid larvae (not ID'ed to species level) were also collected inside the wetland pond. Given that they were only found inside the wetland, we presume these to be offspring of small-bodied NNF that entered the wetland either via the fish screen or from inland, non-river, water sources (e.g. *Gambusia affinis* seem to be everywhere).
- A submersible PIT antenna was also deployed in the inlet at the beginning the entrainment period and is still in place as of May 23.
- Shoutout to Chris Brown from TNC. Chris used the Marshmaster to knock back cattail and bulrush encroachment within the 3-acre excavated pond region.
- Short term plan: 1) monitor pond elevation intensively over the next few weeks to assess storage efficiency & anticipate need for supplemental water delivery. 2) continue monitoring larval presence outside of the wetland in case a 2nd entrainment event is possible.