



Upper Colorado River Endangered Fish Recovery Program

Dated: December 4, 2017

August 15-16, 2017, Management Committee Final Meeting Summary U. S. Bureau of Reclamation, Grand Junction, Colorado

Tuesday, August 15

CONVENE: 12:30 p.m.

1. Action item: Approve March 27, 2017 draft meeting summary – No comments were received on the revised summary which deleted an erroneously pasted image of a scope of work. The summary was approved as written.
2. Recovery planning update
 - Colorado pikeminnow population viability analysis – Phil Miller is analyzing unique scenarios for the Green, Colorado, and San Juan sub-basins (e.g., addressing nonnative fish abundances, screening the Green River Canal, providing experimental base flows in the Green River, etc., which affect survival estimates). The draft with those scenario runs should be complete by the end of August. Phil will develop a single-phased model which will complement the dual-phased model he has already completed. A single phase model will “flatten out” the trend trajectory of our datasets for the Green and Colorado rivers where we have documented periods of positive population growth followed by more recent declines. Phil will also look at a range of carrying capacities and habitats that may be opened on the Gunnison and upper Colorado rivers.
 - Humpback chub species status assessment (SSA) – This SSA is out for peer review with direction to focus on major flaws; review period ends August 18.
 - Razorback sucker SSA – The Program Director’s office is reformatting the current draft to better define subjective terms, clarify uncertainties (e.g., how to address potential catastrophic events like oil spills), and more closely match the current Service SSA guidance.

Time frames - Tom Czapla has worked with Tom Pitts to outline the following time frames:

Activity	Pikeminnow	Razorback Sucker	Humpback Chub	Bonytail
Complete PVA	Fall, 2017	N/A	N/A	N/A
Complete Species Status Assessment; provide to USFWS	Fall, 2017	Fall, 2017	Fall, 2017	N/A
USFWS Completes 5 year status review	Mid-2018	Mid-2018	Mid-2018	Mid-2018
FWS completes updated recovery plan	1 st half, 2019			

SSAs inform various other ESA related decision making documents (e.g. Section 7 consultations, 5-yr reviews and serve as the basis for recovery plan revisions). And if there's a change in species status (downlisting to threatened), then the recovery plan would only include delisting criteria. 2018 would be the earliest possible date for a proposed downlisting, and it appears this may be possible for humpback chub. Patrick asked if more than one species were to be considered for downlisting, they might be done as a package? Tom Chart thought that might be possible, but each species' needs, current condition, and viability are fairly different.

3. Drought Contingency update - Steve Wolff said Lower Basin and Upper Basin Drought Plans are on hold while all attention is on the new Minute 323 with Mexico (execution anticipated in late September). After that, work will resume on the Lower and Upper Basin drought plans (anticipated in January 2018, since certain things in the Lower Basin plan have to be implemented in early 2018). Numerous domestic agreements will need to be finalized and signed to fully implement all pieces of the Minute and drought plans. The System Conservation Pilot Program (water conservation) underway for three years may go one more year before being considered for long-term implementation. See Attachment 3.
4. Technical Committee reports
 - a. Water Acquisition Committee - Don Anderson said the Committee met in July.
 - The primary agenda item was to review the draft FY18-19 work plan. They discussed escalating O&M costs for fish screens, passages, etc. The Program Director's office had worked with the various facilities to include only needed contingencies. Brent Uilenberg presented a proposal for managing O&M costs by combining the maintenance costs across the GVIC, GVP, and Redlands facilities. Brent analyzed the combined annual costs for all facilities, finding a mean of \$155K, median of \$172K, low of \$75K and high of \$210K. Brent recommends budgeting for the highest annual combined cost for the three projects (\$210K) rather than all individual projects budgeting for their individual highest annual costs (\$277K). This is a conservative approach, but logical because large expenses usually only occur at one facility each year. If Committee approves this approach (to be discussed under FY18-19 work plan), Brent will inform the facilities. Brent also would like to look into carrying over funds, as these are 40-year agreements. Don said it's helpful to capture random nature of some of these projects. He did note that Grand Valley Project's Mark Harris discovered they hadn't been charging appropriate supervisory time and worked to capture that in their latest scope of work.
 - Other WAC agenda items included managed peak flows: Gunnison River peak flow targets met and exceeded; third year in a row of coordinated reservoir operations on the Colorado River, with ~2,700 cfs added to the peak; challenges on the Green River with Green River operations driven by dam safety and managed floodplain wetland considerations, so a peak of 18,600 cfs was not met. Leslie asked about the Flaming Gorge operations public meeting; Don said it was relatively small turnout (30-35, at least half Federal employees), with not much pushback except with regards to experimenting with spike flows to disadvantage smallmouth bass. Questions focused on when, how long, amount of notice, etc. Melissa said the fact that releases were made primarily for dam safety helped the group understand this year's operations.
 - Green River flow and temperature recommendations review - A draft report is anticipated possibly in September. Discussions with Utah on long term Green River flow development are ongoing (foreseeable development is closely linked with Reclamation's proposed exchange contract out of Flaming Gorge Reservoir). The "Federal Family" recently met to review what will be needed to protect flows. Leslie James recommended WAPA be invited to participate in those meetings.
 - TNC and UDNR are investigating potential strategies to protect base flows in the Price River in Utah.
 - Work on White River flow recommendation work continues, with Wilson Water Group modeling

future development scenarios against preliminary endangered fish flow targets.

- Don asked the Water Acquisition Committee about potentially recognizing a wet-year target from the Yampa River (seems like there's been a de facto target of ~200 cfs), but the Committee did not think it would be best to try to formalize that now. Tom Chart said we've had good flexibility to use Elkhead flows for both baseflow augmentation and other purposes, but a formal flow recommendation would be a different process.
- Don will convene the long-term flow protection work group (starting with a focus on the 15-Mile Reach) after he finishes reviewing and compiling information.

b. Biology Committee - Dale Ryden reviewed highlights from the Committee's July 20 meeting.

- Field updates: 1) CSU put remote PIT antennas in Vermillion Creek and contacted 74 individual Colorado pikeminnow which was remarkable. (Vermillion Creek is a 67.5-mile-long tributary of the Green River. It flows south from Sweetwater County, Wyoming to a confluence with the Green River just north of the Gates of Lodore in Moffat County, Colorado.) 2) CPW removed 96 pike and 120 walleye from Stagecoach and ~900 pike from Catamount (where Billy thinks he's seeing a reduction). 3) UDWR-Vernal deployed submersible antennas to document endangered fish entering Stewart and documented the presence of razorback larvae on June 7. Cattails are a problem with only ~2 acres open of >500 acres in the wetland. UDWR also collected 6 Colorado pikeminnow in the White River and more in the lower Duchesne this year, all from the 2015 cohort, which appears to be spreading out and using more habitats. UDWR received permission from the Ute Tribe to sample the lower Duchesne this year and documented smallmouth bass and walleye in that reach. 4) USFWS-Vernal received permission to sample in the lower White on Ute land. 5) Four adult grass carp were captured by UDWR-Moab (lower Colorado and lower Green rivers) and two by USFWS-Grand Junction (below Westwater Canyon), all of which were diploid (fertile) fish, and thus quite concerning. Experts have assured us grass carp can't reproduce in lakes (e.g., Lake Powell), which suggests they're drifting down from higher in the system, potentially from some illegal stocking. 6) USFWS-Grand Junction met all bonytail stocking targets. The Grand Valley Project fish passage has set a record for endangered fish use this year with (so far) with 122 razorbacks, 5 bonytail, 2 juvenile humpback chub, and one Colorado pikeminnow (with three of the four endangered species caught in one day). Dale's crew found two Colorado pikeminnow spawning on a gravel bar right below the Grand Valley Water Users Dam where they've not previously seen pikeminnow. They also getting a lot of hits on the Price Stubb antennas. Leslie James suggested that >Melanie and Dale will work up a visual showing fish passage use. 7) UDWR-Moab Matheson wetland is a small wetland that can flood ~60 acres at about 25,000 cfs, but only ~3 acres is sustainable year-round with available supplemental water . UDWR has asked for ~\$150K for phase-1 work, but the Biology Committee recommends waiting. Some work will go forward without Program funds. Total cost to restore (Phase 1) would be >\$900K (more than twice the cost of Green River wetlands like Johnson and Sheppard). The Committee recognizes they need to do a more thorough review of floodplain sites.
- FY18-19 work plan highlights: 1) USFWS believes they can cover the ~\$1.4M FY18-19 shortfall, but needs to figure out how to better balance future budgets. 2) Committee recognized we need to develop replacement schedule and costs for Highline (Harry just got an estimate for \$140-\$180K installed) and Elkhead nets and put this in the scopes of work in appropriate outyears. 3) The Ute Tribe may begin some work on Duchesne River nonnative fish. 4) A scope of work is pending for the USFWS-funded Ouray NFH (Dave Schnoor was waiting on receiving his fund targets). 5) The Program currently has adequate PIT tags, but will need more in a year or so. Hopefully the DOI contract will be ready soon (Reclamation leading). 6) Humpback chub translocation to Yampa Canyon and/or other locations under discussion (conference call September 5). 6) The Committee discussed the need for additional wagon-wheel antennas, along with replacement schedules. 7) The CSU biostatistician support, which shows up in multiple SOWs was consolidated in one scope of

work.

- The BC approved backwater synthesis report and 2016 floodplain connections report.

c. Information & Education Committee - Melanie Fischer said the Information and Education Committee is now holding short (~30 minute) conference calls each month. Melanie presented an I&E update:

- Educational outreach activities take place in Colorado and Utah and are very successful at reaching a large number of children in the basin.
- YOY pikeminnow were documented in the San Juan River and a press release was picked up by a few media outlets.
- Nonnative fish harvest tournaments are a way to reach and engage a large number of local anglers. Recent tournaments in Colorado have awarded prizes, including cash prizes, to mostly local citizens.
- Utah has installed 40 new signs in various river locations, designed by Melanie, identifying the native fish (to release immediately) and the nonnative fish (to catch and keep).
- I&E Committee developed the “Your Water - Your Fish - Your Future” messaging on the conservation value of native fish species and the obstacle of nonnative fish. This message is being used in water bills.
- We are increasing opportunities for people to see live fish in aquaria (multiple Grand Junction locations) and outdoor ponds (Vernal Fieldhouse).
- We continue to expand outreach publications for specific purposes. We are now up to 4 unique printed documents - the annual briefing book, the field report, the nonnative fish handout, and the path to recovery.
- We continue to expand outreach educational items, which now include lapel pins, temporary tattoos, trading cards, rulers, boat can holders, magnets, and stickers. Vinyl stickers are on order.
- Leslie James asked if we could place an aquarium at the Flaming Gorge visitor’s center, which is going to be remodeled. >Melanie will investigate (will depend on whether they can maintain one).

5. Update on proposal to reauthorize Program annual funding – Henry Maddux said non-Federal Program participants discussed this with their Congressional delegations last March and were encouraged to move ahead. The States, Leslie, and Tom Pitts have been working on the draft. Bi-partisan and full partner support will be critical. On August 8, Tom Pitts and Henry Maddux sent the Committee a memo and briefing paper regarding a revised approach to the annual funding re-authorization; currently scheduled to expire on September 30, 2019. The Committee has previously discussed a simple extension of the power revenue authorization to FY 2023 for consistency with the cooperative agreements establishing the programs and the capital funding authorization in PL 106-392. Non-Federal Program participants initiated requests with Representative Bishop (R-UT), Chair, House Resources Committee and Senator Gardner (R-CO) to take the lead on introducing the legislation and both agreed. The hope was to get the bill introduced prior to the August recess with the intention of getting it passed in this session of Congress. Briefing documents with proposed changes in the legislation were provided to both offices. The language continues to include a requirement for a report by the Secretary the Interior recommending funding arrangements beyond 2023. This report would be due September 30, 2022. Senator Gardner’s office circulated the draft bill to various parties, including some federal agencies, in order to get preliminary feedback. In response, WAPA raised concern about the viability of power revenues as a guaranteed funding source beyond the current authorization. WAPA is reasonably confident they can meet the obligations in the proposed legislation for the near future, but suggested that the Program should consider additional funding sources. Therefore, amendments now proposed to P.L. 106-392 would:

- Extend the authorized use of hydropower revenues for annual base funding through FY 2023 at currently authorized levels; and
- Require a report to Congress from the Secretary of the Interior by the end of FY 2021 (instead of FY

2022) regarding the need for continued base funding after FY 2023.

Henry and Tom have requested >any comments on the proposed legislation be submitted to them via email: Henry Maddux (hmaddux@utah.gov), Tom Pitts (tpitts@waterconsult.com) no later than Friday, August 25. The goal is to get the legislation introduced after the current Congressional recess. Tom Pitts emphasized that we will need to renegotiate everything (cost-share, cooperative agreement, Blue Book, etc.), what the recovery programs will look like after 2023, how big it will be, and how it will be funded. Thus, our next priority will be to start talking about this in early 2018. Henry suggested that the kind of O&M projections Brent has done for the passage and screen facilities are the kinds of things we'll need to be working on, along with long-term net costs and O&M, long-term monitoring plans, what Program participants are willing to fund long-term, etc.

Brent asked about the background for removing the language "Except that power revenues may continue to be utilized to fund O&M for capital projects and monitoring." Leslie said relates to the concern raised by WAPA (as described above). Brent is concerned about risk with power revenues not guaranteed for O&M because the facility contracts allow operators to walk away if O&M funding isn't provided. Brent understands how it would be awkward to keep the language. Henry asked if there's flexibility in the Grand Canyon program. Leslie said the Grand Canyon Protection Act says "the Secretary *may* use power revenues" and the Secretary is not precluded from using other sources of funding (but this has basically never happened). Tom Chart asked about the life of the GCDAMP; Leslie said it has no end date. Brent asked what alternative funding sources have been considered and Henry and others said that discussion hasn't begun. Patrick suggested removing the subject language shifts the financial risk of drought from power revenues to the Program; Leslie said she can see that point, but added that since the Program now has so much emphasis on nonnative fish management (which is not O&M or monitoring), the problem would exist anyway. Program participants have to develop a post-2023 plan. Tom Pitts said we will have to define what recovery looks like in a large river basin. Leslie said power revenues come from integrated operation of all the CRSP units, which has additional pressure from Glen Canyon being operated under the new LTEMP/ROD. Shane agreed, saying future Glen Canyon operations could have an even greater impact.

Henry and Tom need any comments on the legislation as drafted by August 25 from the non-Federal Program participants. >DOI Program participants will have a conference call to review the draft legislation and determine how to alert folks in DOI headquarters that this will be coming and the need to support. A joint briefing paper may be useful. Tom Pitts noted they will be asking for support letters from all the non-Federal Program participants (a template will be provided).

6. Other updates

- a. Nonnative fish screening (see Attachment 4). Kevin McAbee noted these nets and screens will require O&M, so they are an important consideration for future costs. Seven major reservoirs need screening solutions: Highline, Rifle Gap, and Elkhead have already been screened; Starvation and Red Fleet have effective temporary screens, but need permanent ones (scheduled for 2018); Ridgway and Lake Catamount have no temporary solution and need a solution installed. Ridgway is the current highest priority because it is in Gunnison basin (currently free of nonnatives) and contains illegally introduced smallmouth bass population (hopefully can be done in 2019). The goal is to install a solution for the pair of Lake Catamount-Stagecoach by 2020. Under this schedule all key reservoirs would be screened and operational prior to 2023.
- b. Colorado's Nonnative Fish Work Group and harvest incentive tournaments - Harry Crockett thanked Melanie for all the photos she took at the tournaments and CWCB for tournament funding. The Elkhead

tournament ran 9 days, removing just over 1,300 fish (mostly smallmouth bass and a handful of northern pike), compared with 580 last year. Almost 400 anglers registered this year (57 last year). A very positive vibe was created, people were made aware of the alternative fishery CPW is working to establish, and Craig Chamber of Commerce participation was very positive, also. Compared to Billy Atkinson removing 610 northern pike over three weeks of netting Catamount Reservoir every night, the tournament is very efficient. The Ridgway tournament ran a total of about three and a half weeks (focused on weekends), removing 2339 smallmouth bass (1806 adult sized). This was ~53% of the reservoir's estimated adult smallmouth bass population. A privately-run Yampa River pike tournament also is proposed. Michelle said the nonnative fish management group continues to meet. Leslie James asked if we've ever considered asking outside donors to pay for something like a screen. Michelle said there are donors looking for that sort of thing, and she will ask about it.

- c. Capital projects - Brent Uilenberg said capital projects authorization expires in 2023. We have ~\$7.7M (\$8-\$9M with indexing) cushion remaining. Underway now are: OMID canal operation (regulating reservoir completed and in operational mid-June; evaluating remaining funds and priorities; need to agree on benchmark (e.g., 17KAF of savings/yr)); Tusher Diversion Dam (at 90% design level, but needs Green River Canal Company approval; then would go to procurement for construction planned for winter 2018 operational irrigation season 2019); Stewart Lake (gate lockdown mechanism installed, but will need to be operated for several cycles and pins inspected regularly to establish safety record); and Stirrup (information/mapping being compiled, then need to develop design concept and cost estimates, but then should review floodplains strategically before spending additional funds). Brent is convinced that it's worth investigating building an additional razorback rearing site at Stirrup. Brent thinks funding should be available to construct a nonnative fish screen at Starvation in 2018, Red Fleet in 2019 (or vice-versa), but not both in the same year. Krissy suggested Starvation's spilling and design stage would be arguments for screening it first. Kevin asked if it might be possible to construct both fall-winter 2018/2019, and Brent said it might be. The Grand Valley Project hydropower rehabilitation request got caught up in DOI review, but that's done now and Reclamation still plans to award the contract this year. Leslie James noted that hydropower revenues contributed \$17M to capital funds, but this was structured in such a way (with a loan from CWCB) that prevented a rate-increase impact. This is an excellent example of Program participants working out creative solutions. Brent noted that about \$238K remains in Wyoming's NFWF account; Steve said they just renewed the agreement for 5 years. This remains an important source of flexible capital funding.

d. Section 7 funds update – Angela reviewed fund status and ongoing & potential projects:

Date	NFWF Balance	Remaining Project Obligations
6/30/2017	\$282,220.15	Balance as of 6/30/17
	(\$140,054.83)	Remaining project obligations as of 6/30/17 (Kolz & Martinez EF standardization; RBS SSA; CPM PVA; SWCA recovery planning through Sep. 2017; Maybell gate).
		New/Planned Project Obligations
		Additional reservoir rotenone or other treatments? Potential Chapman Reservoir reclamation in fall 2018
		New Deposits
	\$142,165.32	available funds

The current NFWF agreement (Wyoming account) goes through December 31, 2019.

7. Action item: Review and approve draft FY 18-19 Work Plan – The draft work plan documents were posted to the listserver in June and subsequently revised by the technical committees. On August 7, updated materials were sent to the Management Committee via the listserver and the Program Management scopes of work were made available on the web. Although the total cost of the FY 18 and 19 work plan exceeds available funds by ~1.4M USFWS has carry-over funds which will cover the 14-15% cost overruns for FY18 and FY19 (outyears are a concern, however, and the PDO will be working on reigning this in). The Biology Committee has recommended a couple of contingency projects for FY18, should funds be available (lower Green River pikeminnow monitoring and Matheson wetland). Tom Chart said the Program certainly could accomplish more with additional funds, but we take a hard look at all the activities to make sure that funds are being directed to the highest priority recovery actions. In nonnative fish management, we’re entering the next experimental phase as we are blocking off some of the sources with screens. Tom and Angela emphasized the high quality of scopes of work. Melissa echoed that, noting that the Biology Committee previously had to review budgets and more with a fine-tooth comb, but scopes are now of such high quality that the review process is considerably streamlined. Henry asked about monitoring costs; Tom Chart said that for pikeminnow, Green River work is a little over \$500K and Colorado \$250K. Since these are three years on, two years off monitoring, the offices conducting that monitoring put more work into things like floodplain management in off years, which helps keep up with that work and maintain some continuity in office funding and personnel.

As discussed under the Water Acquisition Committee update, the Program spends considerable funds for facility O&M (GVIC, GVP, OMID, Redlands, Price-Stubb, and eventually Tusher). Brent Uilenberg has suggested that O&M budgets be based on long-term average facility costs, perhaps through a general umbrella scope for the Grand Valley, GVIC, and Redlands facilities. This would provide more realistic budgeting for O&M costs and reduce carry-over in these contracts. The Committee agreed.

The Committee reviewed the work plan by element (Management Committee comments are shown in red in the revised work plan table). Kevin noted that some Colorado pikeminnow monitoring work which had been embedded in nonnative fish management is now shown in SOW 128, Green River Colorado pikeminnow monitoring. Henry asked how we might discover the source of diploid grass carp; Kevin McAbee said it’s being investigated in-kind or as part of other projects.

The Committee approved the work plan as revised for the Implementation Committee’s ratification.

ADJOURN: 5:00 p.m.

After the meeting on Tuesday, Pat and Anita Martinez hosted a barbecue social at their home celebrating Angela Kantola's pending retirement. Thank you, Pat and Anita and all who made this such a delightful evening!

Wednesday, August 16

CONVENE: 8:30 a.m.

8. Sufficient progress update – This is the first year for the “abbreviated” sufficient progress memo (done in odd-numbered years). It is somewhat behind schedule, but the Program Director’s office has a draft in progress and hopes to share it with the Management Committee prior to the Implementation Committee meeting in September. Outstanding items from last year include the 15-Mile Reach PBO review (still pending), CFOPs (draft recently provided), and the depletion accounting (pending, but no date available yet). Tom Chart would like to bundle the sufficient progress review with the 15-Mile Reach PBO review, if possible. Michelle agreed this would be a good idea.

9. Floodplain Management - Tom Chart said our understanding of the need for managed sites has increased, as we’ve discovered the importance of being able to exclude nonnative fish, supplement water, and re-set sites. We’ve focused heavily on the Green River, and Dave Speas provided a white paper updating information on the Green River sites and outlining required management. Two CRI projects (Johnson and Sheppard bottoms) are online at Ouray NWR, and the Old Charlie Wash site pending lease renewal with the Ute Tribe. The next priority sites are Stirrup, then Baeser Bend, and Above Brennan. As for the Colorado River, UDWR is interested in developing a managed site at the Matheson Wetland, and has found funding for preliminary surveys. Matheson is a good site, with spawning occurring primarily upstream. With ~\$1M investment, this site could probably provide an opportunity to connect and maintain ~3 acres every year, but that’s a very different scale than on the Green River (there is currently not adequate supplemental water to keep more than 3 acres inundated). >The PDO committed to develop a matrix of sites on both rivers by the end of August for the Biology Committee to discuss in September or October. Dale has suggested there may be sites at the downstream end of the Grand Valley. There’s also a privately-owned site upstream of Westwater we want to learn about. Brent Uilenberg said he and Tom Pitts suggest we be clear on the answer to the question “is getting razorback suckers from the larval to juvenile stage a fundamental bottleneck?”. If it is, then we also need to determine if we can manage these sites over the long-term. Subsequently, we then need to methodically determine the best sites, construction costs, and ongoing O&M costs. Tom Pitts agreed, and added that we need to consider what floodplain management will look like post-2023. Patrick agreed these questions need to be addressed before we embark on more projects. Patrick suggested the question is “how critical to recovery are these floodplain sites going to be?”. Tom Chart says he thinks these sites are critically important. We don’t see larval fish make it through their first summer without predator-limited floodplains. The Larval Trigger Study Plan has indicated we’re on the right track. Floodplains will definitely require long-term funding. We have to consider a suite of habitats, since not every site will work well every year (flow dependent). Tom Pitts suggested this is one of many questions for the Service regarding how various recovery actions fit with recovery and post-2023 plans. Henry said it appears more delisting packages are identifying ongoing management actions (whether it’s flows, floodplains, nonnative fish, or other, it’s clear ongoing management will be required). Kathy noted that if we were to need funding outside of power revenues for managing sites, those requests have to be made in the budget process three years in advance. Patrick recommended we determine: how many sites, how much to construct, how much to maintain, and what is the estimated contribution to recovery. Brent asked if contributions of floodplains to survival can be meaningfully worked into population modeling; Henry said it can. Kevin McAbee noted we exclude large-bodied fish from these sites and eliminate

predation pressure, but the sites do produce small-bodied nonnative fish that still cause competition pressure (reducing the numbers of razorback sucker we can produce). Although we do not have a solution, we still have room for improvement at each site. Tom Czapla reminded the group that we will likely also need floodplains to recover bonytail. Tom Chart suggested a question for the Service is how it views managed floodplains in light of self-sustainability. Tom Pitts said he's concerned about asking only this one question, versus presenting all the options for post-2023 management. If we do ask the Service this question, we need to do so in context. Tom Chart agreed. Shane Capron asked if these questions belong in recovery planning; Henry said that they do, but we don't have time to wait. Tom Chart said the SSA will be one place to discuss this. Patrick noted that the San Juan has similar questions; Tom Chart will talk to them about how we might draft the question and supporting information for Committee review. The Committee also discussed potential outside sources of funding; Patrick suggested TNC might explore those options.

10. Member updates – Kathy and Ryan will be assuming Brent's work on the Management Committee at the beginning of 2018. Steve Johnson is replacing Lynn Jeka on the Implementation Committee. Tom Pitts asked about FY18 budgets for USFWS and USBR; Tom Chart said they've heard rumors of 6% reductions. Brent said what they've seen so far supports their requests, but they won't know anything until a budget is released. Henry Maddux said he doesn't yet know who will represent Utah on the Management Committee beginning in 2018 (e.g., someone from Utah Water Resources or Henry's replacement).
11. Development of September, Implementation Committee meeting agenda – The Implementation Committee meeting is scheduled for Tuesday, September 26 from 12:30 p.m. to 4:30 p.m. at the Residence Inn Denver Airport, 16490 E. 40th Circle, Aurora. The hotel has an airport shuttle. Agenda items will include:
 - Approve March webinar summary
 - Program Director's update, SSA/Recovery plans update, Sufficient progress review
 - Update on 2017 D.C. trip
 - Update on 2018 budgets
 - Update on reauthorization of Program annual funding
 - Post-2023 recovery activities
 - Ratify FY 2018-2019 Work Plan
 - Scheduling a March 2018 webinar and September 2018 meeting
12. Review previous meeting assignments – See Attachment 1.
13. Action item: Schedule next meeting, webinar, or conference call - The Committee scheduled their next meeting for Dec 4-5 in Salt Lake City, starting at 1 p.m. on the 4th and adjourning at noon on the 5th. Henry will reserve a conference room at UDNR. Melissa will check on possible restaurants for a Monday evening social. Agenda items will include: nominating and selecting a new Management Committee chair (important that this be a non-Federal, preferably State representative). Patrick acknowledged the contributions of Henry and Brent and Angela and Krissy and the reality that we're losing a great deal of institutional knowledge at the end of this year.

ADJOURN 10:30 a.m.

Attachment 1: Attendees
Colorado River Management Committee Meeting, August 15-16, 2017

Management Committee Voting Members:

Brent Uilenberg	Bureau of Reclamation
Michelle Garrison	State of Colorado
Tom Pitts	Upper Basin Water Users (via phone)
Steve Wolff	State of Wyoming
Marj Nelson	U.S. Fish and Wildlife Service (via phone, Tuesday)
Melissa Trammell	National Park Service
Patrick McCarthy	The Nature Conservancy
Shane Capron	Western Area Power Administration (via phone)
Leslie James	Colorado River Energy Distributors Association (Tuesday)
Henry Maddux	State of Utah

Nonvoting Member:

Tom Chart	Recovery Program Director, U.S. Fish and Wildlife Service
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Recovery Program Staff:

Tom Czaplá	U.S. Fish and Wildlife Service
Kevin McAbee	U.S. Fish and Wildlife Service
Don Anderson	U.S. Fish and Wildlife Service
Julie Stahli	U.S. Fish and Wildlife Service
Melanie Fischer	U.S. Fish and Wildlife Service
Angela Kantola	U.S. Fish and Wildlife Service

Others

Ryan Christianson	Bureau of Reclamation
Harry Crockett	Colorado Parks and Wildlife
Krissy Wilson	Utah Division of Wildlife Resources
Kathy Callister	Bureau of Reclamation
Dave Speas	Bureau of Reclamation
Ray Tenney	Colorado River Water Conservation District
Dale Ryden	U.S. Fish and Wildlife Service
Don Wallace	Guest (Tuesday)
Ed Warner	Bureau of Reclamation (Wednesday)

Attachment 2 Meeting Assignments

Items preceded by an asterisk are also addressed in the agenda.

1. **Tom Pitts** will work with **Clayton Palmer and Brent Uilenberg** and provide a list of additional Program contributions to be added to the Program's budget pie chart that appears in each year's briefing book. *In process.*
 - **Power revenues: Western** contracted with Argonne to model and report actual Flaming Gorge power replacement costs going back to 2001. Subsequently, **Western** will provide annual power replacement cost for the previous year each January for inclusion in the *Program Highlights* pie charts. Those pie charts will include a footnote explaining the calculation and assumptions. For the 2012 & 2013 *Program Highlights*, we used the \$37.4M annualized estimate of power revenues. *A Cost Subcommittee met several times via conference call to review the proposal for and results of the power replacement costs analysis. 1/29/14: Power revenue replacement costs "placeholder" from previous years retained until Argonne report finalized and approved (currently in revision). 5/27/15: Clayton Palmer said Argonne's work had been delayed by their involvement in the LTEMP EIS, but they recently had a conference call on completing work on power replacement costs and hope to have draft to share with the subcommittee soon. 7/21/15: Clayton has a conference call with Argonne next week and will provide an update for Angela to send to the Committee. 4/29/16: Shane Capron said Western expects something in July. 3/27/17: Shane said Western continues to work on this, but has had some staff changes delay the process somewhat.*
 - **San Juan: Tom Chart** will ask **Dave Campbell** to work with the SJCC to determine their additional costs not currently reported (e.g., Southern Ute expenditures on population model). Also, **Patrick McCarthy** will provide information on TNC's capital contributions in the San Juan Program (*done*).
 - **Water users/Colorado: Program participants** will identify other significant costs that have not previously reported (e.g., the Granby component of 10,825 which is estimated at \$16M, \$1.25M contributed by Colorado for GVWM and \$1.5M for OMID, CRWCD contributed property for OMID, etc.) (*Done*). *1/29/14: Water user and Colorado additional costs added and documented in Kantola's Briefing Book Pie Chart Data spreadsheet. 3/20: Tom Pitts said that a few adjustments on water user contributions will need to be made, but we seem to have the totals and process for updating pretty much squared away. Tom Pitts will work with the water users to develop an annual report on O&M and contract costs on the 10,825 water. >Angela Kantola will provide Tom Pitts a list of scopes of work needed to document water user contributions to the Program (as outlined in the water user contribution table that is part of the pie chart calculation). 7/18/15: Pending. 8/1/17: Water user contributions are documented on a worksheet in the spreadsheet "2009 and Forward Briefing Book Pie Chart Data.xlsx" which the PDO works with Program participants to update each January.*
2. **Tom Pitts** will work with **Henry Maddux, Marj Nelson, and Brent Uilenberg** to frame a discussion about what will recovery look like (post-delisting) as it relates to flows, ongoing operation & maintenance, continued monitoring, and responding to nonnative fish concerns. They will then bring it back to the Management Committee at a later date. *2/3/15: Henry Maddux said this may be part of comments on the Recovery Plan and become part of the recovery plans. 5/27/15: Tom Pitts suggested this will need to outline commitments necessary to maintain the Program's accomplishments. Tom Chart said perhaps this is something that can be outlined before next year's briefing trip. 7/21/15: Tom Chart thinks the discussion might be framed in a one-pager that folks could have if needed during next year's briefing trip. March 2016: Melanie Fischer created the "[Path to Recovery](#)" document.*
3. **Michelle Garrison** and **Don Anderson** will add appropriate detail to the White River Management Plan scope of work for the in early November (*done*) and Colorado will issue an RFP (*in process*). **Michelle** will

share the updated White River Management Plan SOW with the Management Committee when it goes out for bid and discuss who may want to be on the review panel. *9/2/16: Michelle will share the SOW from the roundtables, and also the SOWs for the remaining portions. 2/13/17: Michelle said they're working on the modeling contract SOW now and will provide that to the Committee this week (done and comments received and provided to Wilson Water). The remainder of the work is covered in a separate SOW and CWCB will provide that to the Committee before contracting that part.*

4. **The Management Committee** will review the reservoir screening table as a standing agenda item (perhaps on the Biology Committee's agendas, as well). Kevin McAbee will continue updating the table for the Committee (and will add Brent Uilenberg's capital cost estimates). *On this agenda.*
5. **Tom Czapla** will create Doodle polls for the next humpback chub recovery team meeting now and a science team webinar that would precede that meeting. *Pending (after peer review comments that are due 8/18/17 are received/reviewed).*
6. **Melanie Fischer** will work with **Dale Ryden's staff** to develop a visual representation of fish passage use.
7. **Melanie Fischer** will investigate whether we might be able to place an aquarium at the Flaming Gorge visitor's center, which is going to be remodeled (will depend on whether they can maintain one).
8. **Non-federal Program participants** will provide Henry Maddux and Tom Pitts any comments on the draft proposed reauthorization legislation by August 25. **DOI Program participants** will have a conference call to review the draft legislation and determine how to alert folks in DOI headquarters that this will be coming and the need to support.

Attachment 3, Drought Contingency
UCREFRP – Management Committee Meeting
15 – 16 August, 2017
Grand Junction, CO

Agenda Item #6(e) Update: Upper Basin Drought Contingency Planning Efforts and related matters (Wolff)

Drought contingency planning and related efforts are on-going throughout the basin, including in the Upper Basin (Colorado, New Mexico, Utah and Wyoming), the Lower Basin (Arizona, California and Nevada) and bi-nationally between the U.S. and Mexico. All efforts include both state and federal parties, as well as water contractors. Brief descriptions of these activities are provided below.

Primary Drought Activities and Agreements

- Upper Basin Drought Contingency Planning - The Upper Basin plan has three main components – weather modification, demand management and Colorado River Storage Project (CRSP) reservoir operations. Weather modification activities are ongoing in WY, CO, and UT, with some funding being contributed by Lower Basin water contractors. The concept of demand management is still under development. The System Conservation Pilot Program discussed below has been considered a precursor to any larger demand management program. Finally, the Upper Basin has been working on the development of an agreement relative to the drought operations of CRSP reservoirs to minimize the risk of Lake Powell falling below a critical threshold elevation. The agreement assures cooperation between Interior, Western Area Power Administration and the Upper Basin States related to the movement of water from upstream federal reservoirs to Lake Powell, which will occur within the release ranges established by existing authorities.
- Lower Basin Drought Contingency Planning - The Lower Basin has been working on a plan to conserve additional water in Lake Mead. Ultimately, these efforts could conserve up to 1.1 million acre-feet of water in Lake Mead annually during times of drought and very low water levels, but would allow much of this conserved water to be recovered once the system recovers. Although Upper Basin States have supported the intent to keep Lake Mead elevations higher, there are some policy and legal concerns that must be sufficiently addressed before we can fully support the Lower Basin's efforts. Collaborative work is occurring to address these concerns through numerous associated agreements. The Lower Basin plan won't be finalized until the first quarter of 2018, but due to linkages between that plan and the new Minute with Mexico (Minute 323; see below), there is a need to reach some initial agreements between the seven basin states and the Department of Interior in the next 30-days.
- Minute 323 with Mexico - Minute 319 to the Treaty between the United States and Mexico relative to utilization of the waters of the Colorado River was signed by representatives of the U.S. and Mexico in 2012 with a five-year term. Generally, the agreement outlined actions to proactively manage the Colorado River system to obtain binational benefits and mitigate risks associated with variable water supplies and growing demands. Minute 319 is set to expire at the end of 2017 and there are ongoing efforts to finalize a succeeding minute (Minute 323) which would extend portions of Minute 319 as well as add some additional components. Two important components of Minute 319 that are being carried forward in the new Minute include: (1) Mexico's continued participation in both shortage and surplus conditions on the river; and, (2) Mexico's ability to create Intentionally Created Mexican Allocation (ICMA) by deciding to defer water deliveries as well as allowing some ICMA to be converted to

Intentionally Created Surplus (ICS) for use within the U.S. There are also new terms in Minute 323 which are directly linked to the Lower Basin plan wherein Mexico, contingent upon finalization of the Lower Basin plan, agrees to additional water reductions in proportion with the Lower Basin states. In general, there is wide agreement that Minute 323 must be executed prior to the expiration of Minute 319, with execution currently scheduled to take place prior to September 30, 2017.

System Conservation Pilot Program (SCPP): The SCPP supports demand management concepts the Upper Basin States are currently exploring as part of their overall drought contingency planning effort (discussed above). The drought contingency planning effort identifies, among other things, demand management as a key strategy for keeping Lake Powell above critically low levels. While the Pilot Program is not formally part of the Upper Basin States’ drought contingency planning effort, we recognize this Pilot Program may help provide critically important information related to the feasibility of demand management. These pilot projects could include approaches such as temporary fallowing or deficit irrigation of agricultural crops, upgrading to more efficient irrigation practices, reuse of industrial water, recycling of municipal supplies to reduce consumptive use, and other methods that would leave more water in the Colorado River System. All projects participating in this program are temporary and voluntary. It should also be noted that the success of the program has been due in great part to the involvement of Trout Unlimited and The Nature Conservancy.

System Conservation Projects in the Upper Basin 2015 – 2017.

Year	Proposals Received	Projects Funded	Est. System Water Generated (acre-feet)	Paid to Water Users
2015	15	10	2,212	\$607,840
2016	32	20	7,165	\$1,631,224
2017 ¹	46	15	11,742	\$2,320,004

¹ Projects approved. Not all 2017 projects have been fully implemented yet.

This pilot program was scheduled to end in 2017, but there is interest from the funding parties to operate one more year (2018) to help answer additional program questions.

Attachment 4 Reservoir Escapement Summary

Reservoirs needing screens	Reason for screen	Proposed screen type and location	Status	Proposed completion date	Total estimated cost	Program portion
<p>Starvation Reservoir</p> <p>Duchesne River basin on Strawberry River</p>	<p>Contains fertile walleye and smallmouth bass populations; LMP completed;</p>	<p>Flat plate screen across stilling basin during spill;</p> <p>Outlet not screened but not thought to be a problem</p>	<p>Modular rigid temporary screen in place. Operated annually since 2015 with later rotenone of stilling basin. UDWR will install permanent screen with same orientation as the temporary screen. MOU and Operations Plan under review by stakeholders.</p>	<p>Permanent screen install scheduled- Fall 2018</p> <p>(Staffing issues delayed 2017 construction)</p>	\$406,000	<p>Estimated at \$250,000</p>
<p>Red Fleet Reservoir</p> <p>Green River basin on Brush Creek</p>	<p>LMP finalized and reservoir rotenoned in 2015; Reservoir stocked with hybrid bass (wipers), and sterile walleye which requires screening.</p>	<p>Downstream in-channel screen (similar to Rifle Creek screen) with emergency stilling basin measures.</p>	<p>50% engineering and draft alternatives document presented to BC on March 6th. Coordination team meeting for screen design/install scheduled for October 2017.</p>	<p>Engineering 2017; Permanent barrier planned 2018</p>	\$400,000	<p>Estimated at \$250,000;</p> <p>Program paid \$88,487.25 for rotenone project.</p>

Reservoirs needing screens	Reason for screen	Proposed screen type and location	Status	Proposed completion date	Total estimated cost	Program portion
Ridgway Reservoir Gunnison River basin on Uncompahgre River	Contains illegally introduced smallmouth bass population	In-reservoir net likely will match design criteria of Elkhead net; USBR to own net and fund through federal procurement	Working group meeting quarterly to discuss screening options; Tri-County WCD avoiding spills (avoided since 2014); CPW held tournament annually since 2015;	2019 goal	Brent has placeholder of \$2.3 million	Costs above \$500,000 - similar to Elkhead?
Catamount Reservoir Yampa River basin on Yampa River above Steamboat Springs	Contains northern pike population	spillway net and penstock screening (preliminary concepts)	CPW removing northern pike; Catamount Metro has FERC exemption for hydropower that requires screening of new facilities; CPW and Program will attend board meeting August 2017 to provide information on the Program, nonnative fish, and potential screening	goal of 2020?	unknown	Brent has placeholder of \$500,000

Reservoirs needing other solutions	Reason for solution	Proposed solution	Status	Proposed completion date	Total estimated cost	Program portion
Stagecoach Reservoir Yampa River basin on Yampa River above Catamount Reservoir	Contains northern pike and walleye populations	Paired with Catamount screen; Mechanical removal and water management options.	CPW will remove northern pike and walleye as part of ongoing projects; Upper Yampa WCD complying with FERC & BO; CPW requesting UYWCD to do additional actions	Catamount net in 2020?	n/a	n/a
Chapman Reservoir Yampa River basin on Little Oak Creek above Stagecoach Reservoir	Contains illegally introduced northern pike population	chemical treatment	On CPW's chemical treatment schedule; need reservoir mapping for project planning	2017? Need update from CPW		Need rotenone estimate from CPW
Crawford Reservoir Gunnison River basin on Smith Fork	Contains northern pike ; Failed attempted introduction of SMB.	Unknown (continued removal and water management are options)	CPW mechanically removes Northern pike; 68% removed in 2015; CPW proposed water management to limit pike, but water operations not able to match CPW requests at this time;	unknown		
Off-channel Ponds (Larson, Snyder, etc.) Colorado River near Rifle	Contain northern pike and smallmouth bass populations	Unknown (netting and removal are current options)	CPW is actively netting since 2015 under project 126b;	ongoing		Program paid \$15K for Merwin Trap in 126b SOW in 2016;
Total estimated future Program commitments \$ 4,000,000 (approximate) (note half is unknown Ridgway net costs)						

Reservoirs with existing screens	Reasoning for screen	Existing screen type and location	Status	Completion date	Total estimated cost	Program portion of funding
Elkhead Reservoir Yampa River basin on Elkhead Creek	Contains smallmouth bass and northern pike populations; LMP includes largemouth bass, bluegill, and black crappie fishery; LMP finalized	Outlet screens (in place) & spillway net (in place);	Successfully operated under spill conditions in 2017; New unlimited harvest regulations in place beginning April 1, 2016; Tournament held June 2016 and 2017.	Completed September 2016	Total Project cost \$1.37 million	\$837,000 from capital accounts (<i>Brent can verify exact number</i>)
Rifle Gap Reservoir Colorado River basin on Rifle Creek	Contains smallmouth bass, walleye and northern pike ; Stocked in 2016 with 98.9% triploid walleye, but no diploid removal;	Coanda screen downstream of outlet	Screen excluding small and large fish; no nonnative fish captured in creek below screen since installation;	Completed in 2013		\$0 (CPW purchased with Section 6 and other CPW funds)
Highline Lake Colorado River basin on Salt Creek	Compliance with stocking procedures. Contains largemouth bass, crappie, and trout; Gizzard recently established	Net across spillway	Net operational since 1999, replaced twice.	Completed in 1999 ; Replaced in 2006 and 2014	\$225,000 for first net; \$100,000 for second net; \$90,000 for third net;	\$415,000
Juniata Reservoir Colorado River basin on Kannah Creek	Contains smallmouth bass and walleye populations	Coanda screen on outlet into irrigation ditch to Kannah Creek	Grand Junction City maintains screen. Low escapement risk b/c water goes into treatment plant or Purdy reservoir for irrigation use.			

Reservoirs not needing screens	Reasoning for not needing screen	Existing escapement condition	Status		Program portion of funding
Harvey Gap Reservoir Colorado River basin near Silt	Contains smallmouth bass and northern pike and other species (tiger muskie, channel catfish, and largemouth bass).	Drains to agriculture fields.	Likely drawn down for dam inspection in 2017 ; Since it contains problematic NNF and will be drained, should we investigate a treatment to eliminate it as a source for translocations or other risk?		
Miramonte Reservoir Dolores River basin	Contained illegally stocked smallmouth bass population	Problematic species removed	Reservoir treated in 2013 to remove smallmouth bass		\$25,000 for rotenone costs
Paonia Reservoir Gunnison River basin on North Fork of Gunnison	Contained illegally stocked northern pike population	Problematic species removed	Reservoir treated in 2012 to remove northern pike		\$3,000 for rotenone costs
McPhee Reservoir Dolores River basin near Dolores, CO	Contains smallmouth bass and illegally stocked fertile walleye populations	Low reservoir releases; escapement non-problematic	McPhee “spills” using a low reservoir release that is unlikely to entrain fish; USBR only uses top spillway in emergencies; last used in 1993 and thus released SMB 2017 sampling during such a “spill” did not document any SMB. CPW did not apply unlimited harvest for SMB here because of lack of escapement risk		
Rio Blanco Reservoir White River basin below Meeker	Contain northern pike population	No outlet releases; Rotating drum screen on the inlet canal	A closed basin fishery that is topped off with White River water periodically but location is very close to the river, creating a risk of escapement from angler fish movement or river connection		
					Total past Program commitments \$ 1,280,000

Reservoirs likely unable to be screened	Species of concern	Why screen not feasible	Notes
Lake Powell	Contains fertile walleye, striped bass, gizzard shad and smallmouth bass populations	High inflow (up to 70K cfs); Changing lake levels; Recreational boaters	Lake Powell LMP drafted; UDWR considering redear sunfish as quagga control and sport fish, but on hold for 5 years to determine bluegill (similar species) response to quagga; USGS & FWS investigating if Powell is source of riverine walleye using otolith microchemistry
Flaming Gorge Reservoir	Contains smallmouth bass and burbot populations	Greatest opportunity for escapement is over the spillway, which is only used in emergency situations. Likelihood of spills is extremely low (has not occurred since 1999), but would likely be of a very high volume (> 5000 cfs) if deemed necessary. Screening the common outlet works (selective withdrawal structure or bypass tubes = less escapement risk) would be highly problematic and presumably cost prohibitive.	Burbot risk assessment in draft. Burbot life history may not place them at high risk of escapement. However, 3 burbot have been captured below Flaming Gorge in recent years; One in Green River near Jensen (farthest downstream capture) Higher than normal captures of kokanee and lake trout documented during prolonged bypass us in 2017.