

Biology Committee Meeting Final Summary, October 24-26, 2016**PARTICIPANTS**

Biology Committee: Dave Speas, Melissa Trammell, Jerry Wilhite, Harry Crockett, Dale Ryden, Krissy Wilson, Brandon Albrecht (via phone), Pete Cavalli, and Tom Pitts (via phone).

Others: Dave Theobald, John Rice, Tom Chart, Julie Stahl, Kevin McAbee, Tom Czapla, Angela Kantola, Tildon Jones, Zach Ahrens, Jerrad Goodell, Matt Breen, Bob Schelly, Mark Fuller, Kelly Cambridge, Katie Creighton, and Brian Hines.

Monday, October 24**CONVENE: 1:00 p.m.**

1. Presentation on the [Green River Basin Landscape Conservation Design \(LCD\) project](#) – John Rice introduced the collaborative Green River LCD, which is both a stakeholder-driven process and a spatially explicit product. Dave Theobald encouraged input and participation in the LCD. The LCD works at a broad, ecosystem / community scale. Dave described the LCD design process and indicated they are about half way through. They're compiling spatial data sets and conducting preliminary analyses. A second workshop will explore the analyses and how they may be used. At this point, they want to be sure they have the right data and if we have or know of additional data that should be included. A [webinar series](#) to share spatial data begins this Thursday with a session on freshwater integrity. One objective of the LCD is to develop a freshwater integrity index that will include data at the 10m² scale (raw data will be available on the website). Krissy said that the states are working on diversion data for their 3-Species work (would encompass the warm water section of the Green River basin) and recommended that Dave contact Paul Badame. Noting that the flow modification map seems to indicate the Duchesne may be the most heavily impacted in the Green River basin, Tom Chart asked if folks think the Price or others may be fairly impacted, as well. Tom sees important links with what's going on in the tributaries. Mark Fuller recommended the Native Cutthroat Trout datasets. Krissy asked if they are aware of the Keystone Initiative conducted a few years ago (Dan Dauwalter & Trout Unlimited) that looked at how to connect cutthroat with bluehead or flannelmouth sucker habitat. Mark Fuller asked about database maintenance and John Rice said they do have plans to keep them updated. Tom Chart asked what's being learned from the Columbia Plateau LCD; John said the coordinators are participating in and providing input into this Green River LCD.
2. Talking floodplains – Dave Speas introduced the white paper he drafted with help from Matt Breen, Bob Schelly, and Tildon Jones. Harry Crockett said the white paper was very comprehensive and helpful; Tom Chart agreed. Dave discussed history of the Program's floodplain restoration effort. Program work on this topic goes back to the early 1990s with modification of Old Charlie Wash (aka Woods Bottom) for razorback sucker rearing habitat. In the late 1990s, we embarked on our levee removal project. This was followed by considerable research emphasizing the need to control nonnative fishes in the wetland sites. Most recently, larval trigger work has indicated the need to defer peak flows until larval fish are detected. Questions remain regarding how to best use wetlands to benefit the endangered fish but overall, the white paper lays out three requirements for successful wetland management 1) exclusion of nonnative fish during the entrainment period 2) supplemental water supply to enhance habitat conditions over the summer 3) the ability to drain the wetland and collect fish, while eliminating nonnatives upon exit. Earlier plans assumed

the floodplains would produce recruits without intense human intervention, but we now know that won't be the case for every site in every year. Dave's white paper is intended to highlight the remaining wetland habitats we need to manage to produce fish. Managing these wetlands is a complex, labor-intensive endeavor. Dave thinks the most promising sites we still need to consider are Old Charlie, the Leota Complex, Johnson Bottom, and Escalante (if we can make this one work). In every case, Dave suggests the first step is outreach to reestablish relationships with landowners (note: some of this was accomplished with the subsequent visit to Ouray NWR). The Program hasn't had a full time floodplain coordinator in some time, which has hampered our work.

Matt Breen said Stewart Lake has had some level of success every year, but requires a great deal of on-the-ground effort (one agency or shop likely could manage only one such site unless sites were adjacent). Tildon said data are collected with larval light trapping and summer and fall sampling, and then fish are returned to the river. We do well getting larvae into wetlands and documenting that, but translating entrainment to survival and recruitment is more difficult. We've known since 2011 that we have enough adults/larvae, but the key is to be able to maintain the habitats and exclude nonnative fish. Matt emphasized that we have to exclude nonnative fish from these sites to get razorback suckers to survive. Dave agreed, noting that sites like Brennan, Bonanza Bridge, and Stirrup don't have infrastructure to maintain water levels or exclude nonnative fishes and thus have not produced fish despite documented entrainment. Tom Chart noted the Green River flow recommendations and their relationship to these sites in the upper reaches and to flooded tributaries in the lower reaches of the Green River and now the inflow to Lake Powell is providing habitat. Matt Breen suggested we need to be able to follow a good cohort of razorbacks through time, so it will be important to track the PIT tagged razorbacks from Stewart Lake. Recalling the Baeser Bend study, Mark Fuller said overwinter water quality may be less of a concern than nonnative fish. Jerrad noted BLM is meeting with managers next week to discuss wetland management strategies. Dave said sites with some level of infrastructure seem the most promising and he hopes we can discuss potential rotational management of these kinds of sites with Ouray National Wildlife Refuge (ONWR). ONWR asked us to hold off on pumping into Johnson at one point to manage cattails (which need either no water or deep water to keep it under control). Tildon said ONWR is working to manage for more natural floodplains (e.g., broader breaches vs. gated structures). They do try to provide habitat for migratory waterfowl, but as Kevin McAbee pointed out, the endangered fish are very much a part of their management goals. Describing ONWR, Tildon said Leota is now really one large connected wetland unit. Once we document entrainment of wild larvae in a wetland, Dale asked if we might consider supplementing them with hatchery-reared larvae to increase the numbers of fish recruiting back to the river. Dave agreed we should consider this. Dave also noted that we likely should maintain flexibility so that we can emphasize management at and get the most benefit from the wetland(s) that produce the most fish in a given year. Kevin agreed, noting, for example, that Johnson Bottom has been designed to operate in lower flow years and may not produce razorback in years in which flows exceed the unscreened breach. So we need a suite of habitats, only a few of which will be top performers in any given year based on hydrology, connection elevation, and man-power. Dave agreed we should develop a decision process to guide us in each year. It's clear that our floodplain management will be more hands-on than originally envisioned.

Dave suggested we also need to consider sites where we might want to stock bonytail (probably not in the same place as razorbacks; though Tildon mentioned that Dave Schnoor did some experimentation and still got pretty good razorback survival in the presence of bonytail). Bob noted that young of year bonytail are very small and difficult to pick out of large numbers of fathead minnows.

In light of the Stewart Lake workload, Tom Chart asked if Matt can envision a more hands-off approach in the future. Matt and Bob said intensive sampling improves their understanding of what's happening, but labor could be reduced during fill (excluding nonnative fish and removing debris, but not sampling). Traps also serve as a nonnative fish control mechanism, preventing the return of large numbers of nonnative fish to the river. Matt said draining the wetland will always be the most labor-intensive task (typically a month of daily sampling), especially if you don't want to send a large biomass of nonnative fish back into the river. Bob noted that operations at Stewart Lake demonstrate razorbacks typically are emigrating towards the end of the draining period. Tildon suggested a fish kettle might help reduce labor somewhat. Mark asked about other leased properties (easements in perpetuity) and whether simple drainage solutions could help manage these sites. Tildon said not all are actual wetlands. Dave did include some of those in his white paper.

3. Schedule next webinar or meeting and identify agenda items – Following the floodplain tours, the Committee scheduled a follow-up conference call or webinar on December 13 from 9:00 a.m. to noon. The Committee will meet for a full day on January 12 after the January 10-11 Researchers Meeting (Doubletree, Grand Junction). (Dave said he believes we've also booked the 12th at Reclamation as backup in case the Doubletree isn't available). January agenda items will include a half day reviewing 2016 nonnative fish work, redear sunfish proposal by UDWR, 2017 plans, and perhaps some final report reviews. The Committee scheduled an in-person meeting 1-5 p.m. on March 6 and all day on March 7 in Grand Junction to review a draft revised RIPRAP and the draft FY18-19 work plan.
4. Stewart Lake cattail removal – Matt Breen said next year UDWR plans to aerial spray 170 acres (half) of Stewart Lake currently dominated by cattail. The plan is to apply Rodeo herbicide via helicopter just before the 2017 fill. Matt doesn't know if this toxicant affects fish; >Dale will check. Tom Chart suggested discussing this with Sonja at ONWR in light of the weed management they've done (Dan Schaad later mentioned he hasn't used toxicants, but Refuge Biologist, Diane Pentilla may have some knowledge or experience with them). Matt said ongoing management is anticipated. The wetland is closing in with cattails and open water habitat is being lost. This project will increase open water habitat for waterfowl and fish. The cattail makes fish sampling difficult if not impossible because nets and traps cannot be effectively set in the dense vegetation. Natural control via keeping open water areas flooded deep enough that cattail cannot establish does not work with the flooding/drying cycles currently being used to manage selenium.
5. Matheson wetland steering committee – Zach Ahrens said UDWR is working on developing this site for management similar to Stewart Lake. They would like to recruit a representative from the Biology Committee to serve on the steering committee. Matt Breen and Tildon Jones would have very valuable input. Tom Chart suggested when the PD's office has a new instream flow coordinator, they also could help out, but Matt and Tildon's experience will still be necessary. Matt said he's very busy right now, but will be more available in December.
6. Nonnative fish update
 - a. Colorado work group – Harry said this group of CPW folks, water providers, Program staff, et al. met most recently in September and will meet again January 31. They've drafted a report to CPW Director Broscheid and hope to submit it by mid-November. Water providers have been very interested in how we can improve messaging about the need to manage nonnative fish and how that relates to the Program's ability to provide ESA compliance for water depletion. CPW has implemented harvest incentive fishing tournaments at Elkhead and Ridgway to provide some degree of biological control, get

the message out that we don't want these worst-of-the-worst species in the reservoirs, and to gain some buy-in via the prizes. CPW revised regulations to allow unlimited bag and possession on these fish on the western slope, but does not have an exception to their "wanton waste" policy that allows anglers to dispose of the fish in lieu of consumption. The tournaments provide an exception because the fish are turned in to CPW, but outside of that, anglers are not supposed to waste them. An issue paper to change the "wanton waste" regulation for these fish was submitted to CPW's regulation review, but CPW's leadership team did not recommend a change to the Commission. Several members of the work group expressed significant concerns about that and will reflect those in the letter to Director Broscheid.

- b. Reservoir updates (including Elkhead Net) – Kevin said the Elkhead net was installed flawlessly in September. The Craig Daily Press ran a good article about it. Over the next few months, they'll work on ways to test and monitor the net's effectiveness. Many thanks to Ray Tenney for all the work he put into this effort. Next we'll focus on preventing escapement from Ridgway, Starvation, and Red Fleet reservoirs. Trina has said stocking triploid walleye and other species at Red Fleet was successful. A Starvation Lake management planning meeting is upcoming. Catamount is another reservoir on the potential list for screening, and a meeting with managers is scheduled in February.
 - c. Low-dose (e.g. 10%) rotenone for selective nonnative fish removal – Kevin said we may want to look into this for gizzard shad (e.g. should they become a problem at Highline Lake). Melissa noted low-dose rotenone also seems to kill walleye.
 - d. NPS and USGS experimental ammonia treatment below Glen Canyon – Melissa Trammell said David Ward coordinated a high dose treatment to remove green sunfish from a pond and it was quite effective. The paperwork was less difficult than expected, but it was just a small (1/3-acre) pond that is not a source of drinking water.
 - e. Challenge Grants – Dave Speas had a call within Reclamation last week on their Challenge Grant program. Some significant funds are available under the America Competes Act to essentially crowd-source technological solutions from the public sector for intractable problems. They discussed using this process to develop means to disadvantage nonnative fish. Reclamation is very interested. Dave is looking into moving this forward and has initially worked with Tildon Jones, Jerry Wilhite, and Kevin McAbee as a coordination team.
7. Pacific NW National Laboratories – Tom Czapla said Pacific NW has new very small RF tags and he invited them to present at the January Researchers meeting.

8. Field updates

Pete said Wyoming couldn't conduct northern pike removal in the Little Snake River this year as Bobby Compton accepted a new position. After the meeting, Pete found out Bobby did do some sampling, but did not catch any northern pike.

Matt said only a handful of young of year pikeminnow were seen in the middle Green R. ISMP sampling, but several from last year's cohort were captured. Katie said they encountered good numbers of pikeminnow in the lower Green (426, just slightly down from last year, 6th highest overall). 83% of their seine hauls contained YOY Colorado pikeminnow. They captured 150 on the lower Colorado (5th highest), with 41%

of seine hauls containing pikeminnow. Following ISMP, they went out to capture YOY for broodstock and got 163 in ~30 seine hauls (140 successfully transferred to SNARRC).

Katie said 3 walleye were captured in the lower Colorado River this fall. They encountered a few largemouth (19) and smallmouth bass (36).

Brian Hines reported on Westwater humpback chub sampling. They completed their third trip last week. Over the three trips, they captured 397 humpback chub and 1538 roundtail via trammel netting and electrofishing (second highest since 1998). In addition, they captured 65 intermediates that looked more like humpbacks and 85 intermediates that looked more like roundtails. No walleye were captured, 5 smallmouth and 8 largemouth were captured.

Stewart Lake 2016 Update: Bob Schelley said Stewart Lake filled to capacity (with a period of connection over both levee breaches) from 5/31/16 to 6/14/16. To achieve the target minimum of three full months of entrainment, draining began on 9/19/16 (approximately two weeks later than in previous years). Draining was complete 10/19/16 after one month of operating the fish trap. The longer draining duration this year was result of a four-day flow pulse of supplemental water near the end of draining (intended to improve water quality).

This year, Stewart Lake provided nursery and conditioning habitat for three endangered fish species. For the second consecutive year, adult bonytail accessed the wetland during filling and spawned during the entrainment period; 9 YOY (45-63 mm TL; mean 56 mm TL) and 23 PIT-tagged adults were sampled during draining. A number of age-1 pikeminnow also were entrained, and 18 (130-180 mm TL; mean 153 mm TL) were sampled during draining, 17 of which were PIT-tagged. Finally, in the most successful year to date under the Larval Trigger Study Plan, 2105 YOY (57-171 mm TL; mean 103 mm TL) and 5 PIT-tagged adult razorback suckers were sampled during the draining period, with 1767 YOY PIT-tagged prior to release to the Green River. This year's razorback sucker cohort is almost three times as large as that from 2014, the previous best. (Despite encroaching vegetation and a heavy green sunfish load.)

Twenty-four razorbacks that exited Stewart this fall were later recaptured, apparently swimming back into the trap through the picket weir. One was recaptured 3 times. These fish were moved down beyond the outlet channel to a backwater area, which indicates the weir and traps are not perfect barriers.

Kevin added that Bob's been collecting any incidental mortalities for selenium testing. Tildon also took samples at Johnson Bottom last year and we have some larval samples. Results from 2015 are in and Joe Skorupa (USFWS) will be reviewing the 2013-2015 data and will make a presentation at the Researchers meeting followed by a report in the spring.

Tildon said they've been sampling the other floodplains that connected this year (Leota, Above Brennan, Stirrup, and Jensen) and got only 5 adult razorbacks from Above Brennan (one of which was last seen in 1999). They haven't been to Escalante this year. Green River canal salvage will be conducted in November.

Dale reported that USFWS- GJ will begin canal salvage in a few weeks. In 2015, a record 53,000 fish were salvaged; canal operators have been very helpful directing workers to best locations for salvage. Fish ladder operations were very good this year. The second highest number of razorback sucker was captured this year and a record number of pikeminnow at Redlands (n=32). Not as many bass or walleye were captured in

nonnative fish removal this year. They also removed nonnatives from three streamside ponds (CDOT, Butch Craig, and Beswick's) and captured almost as many nonnative fish from those as from the river, so it was a productive effort. They didn't find any bonytail in the CDOT pond. Black Rocks humpback chub sampling was very good with many large juveniles and small adults. They weren't able to bring more humpback chub into refugia this year, but 18 remain from previous years and they reproduced in the pond again. Really good size razorbacks are coming out of Horsethief facility this year.

Harry said Jenn Logan thought nonnative fish captures were down overall from previous years. Jenn hopes to get into some of the ponds adjacent to the Mamm Creek pit later this week. Cory is still working up the Yampa data. Spring backwater netting yielded 469 pike, the majority of which were 450mm or larger. They also caught two Colorado pikeminnow this year, one which wasn't tagged. They were able to get access to Mantle Ranch (inholding in Dinosaur National Monument on the Yampa River) to stock bonytail in the river this year. This was considered a major step forward in public outreach and the landowners even helped bucket the fish down to the river.

9. Proposed graduate research projects – Tom Chart they're still discussing this with Kevin Bestgen, but don't have anything new to report at this time.
10. Review previous meeting assignments – See Attachment 1.
11. Review reports due list – Updated list included with this meeting summary.
12. Process for draft meeting summaries – The Committee decided draft meeting summaries, which are fairly widely disseminated via posting on the FWS-Coloriver listserver, should be very clearly watermarked "DRAFT" going forward.
13. Consent item: Review and approve August 22 and September 30, 2016 Biology Committee webinar summaries – The filename of the August 22 summary has been corrected and the discussion of perch corrected, as well. With regard to that discussion of yellow perch showing up in the White River downstream of Kenney Reservoir, Tom Chart asked how recently and often Kenney Reservoir is sampled. Subsequent to the meeting, Harry reported that Kenney was sampled in 3 of the 4 previous years before 2016: 2012, 2014, and 2015, using boat electrofishing in conjunction with nets of multiple types (gill, fyke, trap). It won't be sampled in 2016 because the typical timeframe is late September-October and the biologist, Cory Noble, has moved to another position. For most reservoirs, it's not necessary or efficient to sample every year. Harry thinks it's safe to assume Kenney will continue to be sampled "regularly." It remains the case that CPW has no record of yellow perch or smallmouth bass ever being collected in the White River basin above Kenney Reservoir.

Kevin sent out the draft revised September 30 webinar summary. The Committee approved both and Angela posted them to the listserver after the meeting.

ADJOURN: 5:30 p.m.

Floodplain Site Visits

Tuesday, October 25: Tour of floodplain habitats on and near Ouray National Wildlife Refuge (All day)

Participants: Sonja Jahrsdoerfer, Dan Schaad, Diane Pentilla, Zach Ahrens, Tom Czapla, Julie Stahli, Tildon Jones, Dale Ryden, Pete Cavalli, Bob Schelly, Krissy Wilson, Kevin McAbee, Melissa Trammell, Tom Chart, Kelly Cambridge, Harry Crockett, Dave Speas, Jerry Wilhite, Matt Breen, Angela Kantola

8:00 a.m. Meet in parking lot of Ledgestone Hotel.

8:15 a.m. Depart for Ouray National Wildlife Refuge

Brief stop at Bonanza Bridge. Tildon said they captured razorback larvae at this site this spring via seining. It doesn't hold water well and siltation is an issue here (as is vandalism). Valdez & Nelson considered it a high-water-year site. The broad breach means a control structure would be difficult to construct.

The group proceeded to Johnson Bottom via muddy / slick roads (grateful for skilled driving on the part of drivers Tildon Jones, Dave Speas, Kelly Cambridge, Matt Breen and Pete Cavalli). Dan Schaad described the Ouray NWR's original purpose for waterfowl production, which didn't really work because the NWR is primarily a migration site, not a breeding site. Now they focus on natural floodplain management. They've been working with the Recovery Program since the 1990's (beginning with Old Charlie Wash, then Leota, then Johnson Bottom).

Johnson Bottom was altered in 2015 to operate similarly to Stewart Lake, with modifications funded under a FWS Cooperative Recovery Initiative, which funds endangered species recovery actions on NWR lands. The wetland is configured to connect to the river in below average water years via an outlet channel which leads to a screened culvert that prevents large nonnative fish from entering. The culvert empties into a fish kettle, which is used to control water and sample fish upon draining. A slotted pipe was installed at the entrance to the fish kettle from the canal to exclude adult nonnative fish. The slotted pipe keeps adult fish out of the wetland, and the screen allows nonnative fish to be collected in the kettle. Another, larger breach, which connects at higher flows silted in quickly in 2016 as sustained high flows apparently deposit a lot of sediment, although future flows could erode them. () Tildon said having the site connect at somewhat higher flows because of the silt has some advantages (builds a bit of a nonnative fish barrier and ponds up more water in floodplain post-peak). Tildon also mentioned installing a rigid screen (like the Starvation spillway escapement barrier) at the breach to exclude nonnative fish could assist in native fish production.

The group walked to the Johnson kettle and fish screen. This site holds water well. The Refuge wants to avoid identical water levels from year to year, which promote cattail production. Tildon discussed the option of stocking bonytail in the spring right at the Johnson inlet (with hope that if they spawned, young fish would be pulled into the wetland). The group discussed how much vegetation is ideal at Johnson.

Bob Schelly mentioned that the amount of water remaining in Johnson causes him to wonder if razorback are still in the wetland, as razorback are typically the last to emigrate. Tildon said they have been sampling the remaining water inside the wetland, without any razorback captures. (Note on 10/27/16 GRBFWCO (Tildon's) staff sampled bonytail and YOY chub in the fish kettle.)

~Noon Sack lunch at Refuge headquarters.

~1 p.m. Visit Sheppard and Leota bottoms.

The group traveled to Sheppard Bottom. The Refuge has received a second Cooperative Recovery Initiative grant to improve this site for razorback entrainment. It is too large to manage the entire wetland as intensively as Johnson, but they plan to exclude nonnative fish from units 3 and 4. The river is eroding the existing road and levee, so the Refuge is working to get ahead of that and breach it in the best place – likely an upstream site that will allow water to flow into relic channels. The project plan estimates the new breach to connect to unit 2 around 16,000 cfs. FWS staff are using LIDAR data to create a plan for the breach. The Refuge held a stakeholder planning meeting in September, with Provo BOR (construction contractors), USFWS, and UDWR staff attending.

The current plan would attempt to rear razorback in unit 3. Larvae would need to traverse unit 2 (unrestricted access to nonnative fish) to be entrained into unit 3 and escape nonnative fish. Pelican water could be supplied to unit 3 via unit 4, in order to maintain quality habitat. However, the Pelican Lake water may need to be screened to prevent nonnative fish access. Salvage of razorback sucker from Unit 3 will be problematic. Fish would likely need to be netted from the deep portion of S3 to return them to the river. Dan Schaad also described creating a breach to allow water to enter unit 5.

The group went to Leota Bottoms, where Dave Speas noted this site has good infrastructure and has produced fish in the past. Dave asked if there might be ways to modify management to use these sites for more razorback sucker entrainment and rearing. Dan said it does have a large fish kettle and they can back water into the floodplain from downstream end via the central canal. The fish kettle is at a downstream entrainment location, similar to Stewart Lake. At this point they don't have a good way to screen adult nonnative fish, but that could be remedied. The site also has very soft substrate. They would like to dry it every five years or so to reset, but have been in a wet period recently.

From the Leota overlook, the group discussed various management options, ways of isolating units, available control structures, depths and suitability of the various units, and ways to screen the outlet.

~4:30 p.m. Wrap up and return to Ledgestone Hotel.

Wednesday, October 26: Tour of Stewart Lake and Escalante habitats.

Participants: Tom Czaplá, Julie Stahli, Tildon Jones, Dale Ryden, Pete Cavalli, Bob Schelly, Kevin McAbee, Melissa Trammell, Tom Chart, Harry Crockett, Dave Speas, Matt Breen, Angela Kantola

8:00 a.m. Meet in parking lot of Ledgestone Hotel (679 West Main Street, Vernal, UT, 84078).

8:15 a.m. Depart for tour of Stewart Lake wetland. Because Stewart Lake has produced so many age-0 razorback sucker in the past, close attention was paid to the operation and condition at this wetland. Right now, it is the most vital wetland to razorback sucker recovery.

The group viewed a supplemental water supply structure, the inlet canal, outlet gate (with associated picket weir and water control structures), levee breaches, outlet channel, and river confluence (where emigrating fish were released). The water supply structure is at the back of the wetland and is surrounded by dense cattails. Tildon suggested applying the herbicide in a line from the supplemental water pipe to the center of the wetland to clear vegetation between the pipe and the water body so that the chance of fish getting caught in the cattails is reduced (supplemental water inflow attracts fish, thus we want good habitat conditions around that area). Matt said augmenting water in the wetland continues to be improved in consistency and timing. This year they received a flushing flow augmentation at the end of draining in order to attempt to improve water quality, which was a new action. Kevin said the selenium remediation biological opinion provides 1,000 af of water. The maximum delivery flow is around 5 cfs. Therefore during a 90 day rearing period only ~900 af can be delivered. Stewart received ~450 af this year. USBR-Provo is working to reinitiate the biological opinion and wants to include razorback sucker rearing in the proposed action and conservation measures. Stewart is required to fill and drain annually to remediate selenium, and this provides reset to eliminate nonnative fish and allows razorback rearing each year.

Discussing the breaches UDWR has been netting in the spring, Tom Chart asked if the breaches might be raised a bit to increase the volume of water impounded in the floodplain. Matt thought that might work and could assist with cattail control >Matt will check into it. Discussing the outlet channel, the group noted that the draining process scours out deposited sediment, preventing the outlet channel from increasing in connection elevation.

The group discussed the potential of the nearby Sportsman's Lake (private) which could be a good wetlands site. >Matt will confirm current ownership and go from there to determine current conditions.

The group then went to the Escalante wetland (private land) and viewed the outlet breach and the wetland from an overlook. Nonnative fish are a problem here. To operate this site as a managed wetland would require a gate structure, but it may not be an ideal site because it cannot be completely drained.

In conclusion, the participants felt like this was a very valuable tour that produced many possible actions to assist in recovery. The group thanked Dave for creating the white paper, which provided a strong foundation for the discussions. The group also thanked Tildon, Sonja, Dan,

Bob, and Matt for organizing the site visits and describing the current operations. The Committee agreed to a follow-up call or webinar (December 13, 9 a.m. to 12 p.m.) to set the stage for next year's activities. Stewart Lake operation will be similar to current going forward. At Ouray, we'll focus on the most important sites and work with ONWR staff to understand constraints and find common ground on re-set and dry times. Matt is meeting with BLM in November to discuss floodplain management at the Stirrup and possibly other BLM sites. Tildon recommends their (FWS) office focus on Johnson Bottom, Leota and Sheppard rather than trying to sample a broad suite of sites each year. Dave strongly agreed. The group discussed finalizing Dave's white paper, after which we would present recommendations to the Management Committee for capital funding consideration.

~Noon

Wrap up and adjourn.

Attachment 1: Assignments

The order of some assignments has been changed to group similar items together.

For earlier history of items preceded by an ampersand "&", please see [previous meeting summaries](#).

1. Humpback Chub (population estimates)

● & Humpback Chub (broodstock development / genetics)

As identified in the 2012 sufficient progress assessment and requested by the Management Committee, the **Program** will develop an action plan for establishing refugia for humpback chub (avoiding getting bogged down in genetic analysis). Mike Roberts has recommended building in limiting factor/life history studies to better understand what's going on in the system that's affecting humpback chub populations. *After Wade's report is received, a workshop should be held to include discussion of when and where fish would be stocked. Tom Chart recommended outlining questions for a workshop, conducting the workshop, and then finalizing the action plan. 10/27/14: Reclamation awarded contract to SNARRC for analyzing remaining fin clips and completing report (including lower basin data). 1/15/15: data on upper basin chubs will be written up within about a year. The subgroup developed a list of questions for Wade to address (Tom Czaplá sent to BC 1/21/15); >Melissa Trammell will find and send the plan development proposal document to Tom Czaplá by January 21 and Tom will send it to Wade with a courtesy copy to the Biology Committee and Kevin Bestgen. (Done). Wade said he will revise the scope of work (done; any comments due by January 29). Additional work pending results from Wade.*

2. Regarding white sucker hybrids, **Harry Crockett** will talk to **Kevin Bestgen** about any further work needed subsequent to the identification guide that Pat Martinez distributed last year. *8/26/14: Ongoing (very complex issue that really deserves a combined genetics and morphological study). This could be put into the next round of Program Guidance (PD's office did) and we should be considering potential outside funding sources, as well, since this relates to more than listed fish. 1/13/16: The 2016 Colorado-Wyoming AFS meeting will have a dry lab workshop on sucker identification and hybrids. Kevin Bestgen recommends a genetics study linked to a morphological study. 3/11/16: The joint meeting of the CO/UT/WY AFS chapters next year may be an appropriate venue to have another mini-workshop on identifying hybrid suckers. 8/22/16: Some support from the AFS chapters/members may be needed for Dr. Bestgen to lead this; Harry Crockett will discuss with Kevin Bestgen.*

3. **Krissy Wilson** will find out if PIT tag data from the San Rafael and Price rivers are being submitted to Travis. *3/4/15: Some has been submitted in past years, but not the most recent year or two; UDWR will submit to Krissy who will submit to Travis by March 15. 5/28/15: Krissy submitted a partial list, but will submit more once the antenna data is available. 7/28/15: Dan Keller will update this shortly. 10/13/15: Krissy said all the San Rafael data have been submitted; Krissy and Dave will check with others (Peter McKinnon) about the Price and Dolores river data. Peter and CNHP are aware that all of the antenna data needs to go into STReaMS. 7/22/16: Data are being provided to STReaMS, but not yet automatically loaded (still building that interface).*

Kevin McAbee suggested the **database manager's** first assignment should be summarizing and analyzing the STReaMS bonytail data, to provide the committee and hatcheries with an initial idea of the number of fish that remain in the system over time, and the characteristics of those fish. The Committee agreed.

4. The Committee endorsed an experiment to tag smaller hatchery razorback and bonytail (for fish coming out

of floodplains); >**Tom Czapla** will investigate which hatchery could do this. **Tom Czapla** will check the BO written for scientific take permits to see if any change in permitting would be required. 1/13/16: **Matt Fry** is experimenting with tagging smaller fish and will document this work for the Committee in the Ouray NFH 2016 annual report.

5. **Angela Kantola** will make a note for the FY18-19 work plan review it would be good to have more introduction of new or significantly revised scopes of work from PIs (perhaps on a webinar a week in advance of the work plan review meeting). *Pending*
6. **Darrel Snyder** will send the “Fishes of the Upper Colorado River Basin” information that includes a map of the UCRB with boundaries for its 8 HUC (4-digit) sub-basins and a table summarizing the recent (past decade) distribution and general relative abundance in lotic and lentic habitats within those sub-basins information to Tom Czapla (*done*). The **Program Director’s Office** will maintain this information on the Program website (*pending*).
7. **Harry Crockett** will send the Committee a final count of fish captured in the stilling basin below Elkhead Reservoir. 10/21/16: *The nets did not stretch all the way across Elkhead Creek--that was tried and the net was quickly destroyed--but instead were deployed parallel to the current on both sides of the stilling basin, as far out into the channel as was practical. Cory Noble reported that they set nets on May 11th and pulled them June 7th. Species and numbers captured are shown below. Crappie and bluegill that were still alive were returned the reservoir, the pike, bass and suckers were removed.*
 - Black crappie - 13*
 - Bluegill - 6*
 - Northern pike - 18*
 - Smallmouth bass - 11*
 - White sucker - 35*
8. **Harry Crockett** will provide PIT tag data for unrecovered smallmouth bass from the Elkhead and Ridgway tournaments to Andrew Treble. 10/27/16 – *Done (Harry received the Ridgway tournament PIT tag data for 2015-2016 and passed it to Andrew.)*
9. **Biology Committee members** can share any thoughts/comments on proposed graduate research projects back to the Committee and the Committee will track as a future agenda item to determine any next steps or specific projects we want to focus on.
10. **Tom Czapla** will schedule a follow-up call of Dave Speas, Kevin McAbee, Tom Chart, and Kevin Bestgen to focus the topics related to a potential workshop/s to discuss data collection and use from Colorado pikeminnow abundance information. *Pending*.
11. In light of the planned cattail treatment at Stewart Lake, **Dale Ryden** will check to see if his shop has information on effects of the herbicide Rodeo on fish. This hasn’t been used at Ouray, but Dan Schaad thought Refuge Biologist, Diane Pentilla, may have some knowledge of it.
12. **Matt Breen** will check into the possibility of filling the Stewart Lake low-spot breaches with dirt rather than netting them in the spring. Matt also will confirm current ownership of Sportsman’s Lake and recommend where to go from there.