

Draft Revised Biology Committee Meeting Summary
Grand Junction, Colorado, July 28-29, 2015

PARTICIPANTS

Biology Committee: Dave Speas, Melissa Trammell, Jerry Wilhite, Sherman Hebein for Harry Crockett, Dale Ryden, Krissy Wilson, Brandon Albrecht, and Pete Cavalli. Via phone: Tom Pitts.

Others: Heather Patno (Tuesday), Seth Willey, Tom Chart, Kevin McAbee, Tom Czaplá, Angela Kantola, John Hawkins, Mike Mills, Kevin Bestgen, Brian Hines, Chris Michaud, Katie Creighton. Via phone on Tuesday: Chris Smith and Matt Breen.

Tuesday, July 28

CONVENE: 8:30 a.m.

1. Review/modify agenda (Wilson, 5 min)
2. Drought contingency (“Extended Ops”) planning update – Heather Patno provided an update to the Committee on modeling for emergency drought response planning by the Basin States and Reclamation that would reduce risks associated with reaching critical reservoir elevations at Lake Powell and Lake Mead. Drought contingency planning consists of: augmentation (primarily cloud seeding with all its research and uncertainties), demand management in the upper and lower basins, and, today’s topic – extended operations. “Extended operations” or “ExOps” would operate upper basin reservoirs (Navajo, Blue Mesa, and Flaming Gorge) *within their RODs* with as much flexibility as possible to release additional water if it looks like Lake Powell could drop below its power pool. Modeling is a team effort leveraging existing upper basin modeling, testing contingency concepts, and maintaining consistency with Reclamation’s lower basin modeling efforts. Some additional analysis was done outside CRSS with individual reservoir daily models and Western’s models. Upper Basin demand management of 200Kaf has been modeled (and there’s also lower basin demand management). Heather reviewed the CRSS model assumptions and said they’ve run the models through 2060, with a focus on 2015-2034. All of this is for a potential emergency situation of Lake Powell dropping below power pool (which is considered a low probability, but high-risk scenario). The Lake Powell power pool is 3,490’, but the model uses 3,525’ to allow response time. Implementation of ExOps would have two decision points: 1) if the April projected elevation of Lake Powell for the following March (11 months later) is <3,525’, move water in spring during runoff; if the August projected Powell elevation for the following March (7 months later) is <3,525’, move water during fall/winter baseflow period. Reclamation recently refined the modeling to only release the amount of water needed to bring Powell back above 3,525’ (i.e., release only the “deficit volume”). Based on current modeling, ExOps would be implemented in only ~15% of the driest hydrological conditions. Heather showed graphs of modeling results that indicate how ExOps could keep Lake Powell above power pool ~4% more of the time. Of the three reservoirs, Flaming Gorge can provide the most water for ExOps. In some cases, Flaming Gorge could be drawn below power pool to assist Lake Powell’s power pool. ExOps with demand management could reduce the probability that Lake Powell would drop below power pool by ~7%. Running the model with potential climate change scenarios increases the probability of dropping below Lake Powell’s power pool from ~7% to ~27%. Under the climate change scenario, ExOps would be triggered more often, ~22% of the time rather than ~10% of the time. Tom Chart suggested it would be helpful to see predicted bathymetry for the Flaming Gorge worst-case scenarios; Heather agreed, but said accuracy would be compromised because sediment measurements are out of date. Heather reviewed implications for flows at Jensen (e.g., extended periods with no years in the wet hydrological conditions). Dave Speas and Heather said a draft ExOps implementation plan is targeted for the end of 2015. Biology Committee members may want to discuss ecological concerns with their agency representatives participating in the ExOps meetings.

3. Field updates – See also Attachment 2.

- a. Stewart Lake – Matt Breen reported that following the earliest first-appearance to date of larval razorback suckers during light-trapping, Stewart Lake was filled between 9 May and 28 May, using both inlet and outlet gates. From a maximum fill of 207 cm at the outlet gate, the level has now dropped to 175 cm over two months. A request for 2 cfs of supplemental water was made on 1 June, with a request for an increase to 5 cfs on 29 June. Supplemental water is now being delivered at a rate of ~4-5 cfs, and the current rate of evaporative loss is about 5 cm of depth every 10 days. Cracks have developed in the rubber gasket at the base of the inlet gate, resulting in a small leak; attempts to plug this flow with sandbags have been unsuccessful. Repair of this gate following draining this fall would be desirable. At present, UDWR expects to be able to retain water in the wetland through August, with the commencement of draining planned for 1 September.

With much greater densities of aquatic macrophytes than in 2014, seining has not been as effective. Only two age-0 razorback sucker have been captured near the inlet gate. Bi-weekly fyke netting has been more successful: on 15 and 16 July, five age-0 razorback suckers (58-70 mm TL) were captured and released, and surprisingly an age-1 razorback (195 mm TL) was also captured and released. This individual presumably jumped over the picket weir to re-enter Stewart Lake during filling this May. Additional sampling with fyke nets will resume this week, and continue every two weeks until draining.

Supplemental water
release into Stewart
Lake



Water loss at inlet
gate (not trivial)



- b. Green R. smallmouth bass removal – Matt Breen said targeted walleye efforts comprised 98.1 hours of electrofishing effort between 2 April and 7 May, 2015, resulting in 74 fish removed (CPUE = 0.75 fish/hr). This was comparable to 2014 capture rates during targeted electrofishing (CPUE = 0.80 fish/hr, 65 walleye removed). Targeted smallmouth bass removal began on 1 June 2015. For a second year, coordinated efforts between UDWR-Moab, UDWR-Vernal, and CRFP-Vernal concentrated electrofishing passes in Island Park to disrupt bass spawning as river temperatures approached and then exceeded 16°C. UDWR-Vernal participated in 5 passes between 1 June and 15 June, 2015 (~1 month earlier than in 2014), resulting 21.4 hours of electrofishing effort and 193 smallmouth bass removed (CPUE = 9.03 fish/hr). Owing to perennially high catch rates for smallmouth bass in the sections of river immediately downstream of Split Mountain boat ramp in Dinosaur National Monument, UDWR has made seven passes through these sections (their A and B sections) since the beginning of June. With one full-pass completed, catch rates to date have been lower than in recent years, with CPUE values of 2-6 fish/hr in sections C-O (river miles 311-246). Higher catch rates (CPUE values of 7.5-9 fish/hr) have

been observed in sections A and B, below Split Mountain, and in the ~30 river miles downstream of Ouray (to about Sand Wash; RM 246-211), with the highest CPUE value of 12.2 fish/hr in section R (RM 236-231). These capture rates are modestly lower than June and July capture rates in 2014, and UDWR's highest capture rates this year below Ouray represent a downstream shift in highest bass densities from the reaches above Ouray in 2014. If these numbers persist, they may represent a suppression of bass densities above Ouray due to disproportionate electrofishing effort in that hotspot in 2013 and 2014. UDWR is now focusing additional effort downstream of Ouray to account for this shift. With respect to population size structure, of nearly 2000 smallmouth bass removed, only 2.5% have exceeded 325 mm TL, and most have been less than 225 mm TL.

Chris Smith said FWS-Vernal will launch the third Echo Park pass tomorrow. Only four small smallmouth bass were caught at Island Park on the first pass and the second pass was similar.

- c. White River bass removal – Matt Breen said UDWR initiated bass removal in the Utah portion of the White River on 5/11/15 (Utah/Colorado border to Enron takeout). Following completion of their first full pass (one of two), they determined that catch rates were significantly higher in the farthest upstream extent of our study reach (approximately a tenfold difference; data has not been fully reviewed yet), thus they used their last four days of effort to target the upstream section (12.5 mile reach just below the Utah/Colorado border to Bonanza Bridge) during two day trips, followed by two days of effort below Bonanza Bridge. Flow forecasts were difficult to work with as flows far exceeded earlier spring predictions; a good thing as prolonged high spring runoff likely disrupted bass reproduction. Seventy-five bass were removed during the first pass; only 4 fish were ripe at this time, prompting UDWR to wait for temperatures to increase before proceeding. Of concern were the number of white sucker hybrids observed during this first pass; 57 white sucker or white sucker hybrids (data in review), the majority being white sucker x flannelmouth crosses with a few bluehead crosses. The majority of these fish were mature spent adults (white x flannelmouth), although several ripe bluehead x white sucker hybrids were collected during pass two. . On 5/20/15; 23 bass were removed (none were ripe; prompting UDWR to postpone sampling again) and 23 white sucker or white sucker hybrids were collected. The second day pass occurred on 6/4/15 and sampling downstream of Bonanza Bridge occurred on 6/10-11/15; an additional 55 bass were removed during this timeframe (20% were expressing when captured; they hit the timing just right!) along with 46 white x flannelmouth hybrids, 6 white x bluehead hybrids, and 2 white suckers. In all, 153 bass were removed, which represents a decrease from 320 fish removed in 2014 in the Utah portion. Note that sampling was more difficult during higher flows in 2015, greatly affecting catch rates.

Chris Smith said FWS-Vernal also had difficulty with flow predictions and have caught fewer bass on the White River this year.

- d. Johnson Bottom – Chris Smith reported that they sampled Johnson Bottom the week of July 13 using fyke nets and seines and found 115 razorbacks 32-70 mm (mean = 52 mm); the fish had been in the wetland only 6-7 weeks. They also found one 68 mm (Age-1) pikeminnow, 4 bonytail adults (from the Ouray hatchery), some nonnative cyprinids, a few bullheads, and some carp. They'll discuss with the Refuge when and if to drain Johnson (the Refuge wants to maintain shorebird habitat). Kevin McAbee said the Recovery Program's original goal was to operate this like Stewart Lake and not over-winter fish, but it's likely that we will over-winter fish in some years. This year it probably would be preferable to drain the wetland to reset it and not over-winter the larger bodied nonnative fish that managed to get into the wetland via holes in the nets placed across the breach.
- e. Middle Yampa pike and bass removal – John Hawkins reviewed his crew's work in Little Yampa Canyon, Lily Park, the lower Juniper, South Beach, and Craig surge reaches. Spring rains maintained flows much longer than expected. They began work in mid-April and will conclude tomorrow. They captured 15 adult Colorado pikeminnow (~ half recaptures) in Lily Park which is up from the most

recent years. They saw a huge influx of young northern pike in critical habitat between South Beach and Lower Juniper. Pike were both abundant and widespread, having dispersed further downstream than previously. They captured nearly 600 pike < 200mm. The surge is just concluding and they're now seeing some Age-0 smallmouth bass. Flow spikes have been interesting (including one that contained fine sediment), and may have affected bass spawning success. CPW stocked thousands of bluehead suckers in Milk Creek (at ~RM 119 in the middle of Little Yampa Canyon) and John's crew caught 128 bluehead in Little Yampa Canyon and downstream. A large proportion of all the blueheads they captured were stocked fish, and they'd dispersed both downstream and upstream. They did find one bluehead in the belly of a northern pike, unfortunately. They've removed >8,000 smallmouth so far this year (about on par with past years). In the 98c upper Yampa reach for pike removal they've completed one marking pass and two removal passes plus some backwater sampling.

- f. 98b Yampa River near Craig – Chris Smith reported that they completed six passes, removing 154 northern pike (compared with 368 in 2014). Higher flows and flooded backwaters were challenging. They added PIT tag antennas this year near the Green River confluence and at Cleopatra's Couch. Those have generated 643 unique detections of tagged fish at Razorback Bar (536 records in STReaMS) 104 (81 in STReaMS) at Cleopatra's Couch; 46 at Echo Park (34 records in STReaMS).
- g. Dale Ryden reported that they captured 260-270 Colorado pikeminnow and more than 1,000 razorback suckers in the #127 population estimate sampling. They also captured 8 bonytail that had been stocked in Colorado River and 2 stocked in Dolores that had been in the river more than a year. They've captured many younger fish, but the number of older adults was down. They've also completed Lake Powell sampling for the year and found a new spawning area in the Colorado River arm and some additional concentration areas. A new PIT tag reader at the waterfall in the San Juan arm of Lake Powell detected ~500 fish (~6 that were stocked near Green River state park and a couple stocked in the Colorado River.) They also believe they detected a bonytail! The fish ladders in the Grand Valley have been running continuously since mid-April and they've seen 7 or 8 razorback suckers at the Grand Valley Project. Fine debris has created real problems this year at Redlands and also GVP. They're working on removing a sediment bar that built up at Redlands this year. No pikeminnow have moved through Redlands yet this year, but the Service is prepared to move them further up the Gunnison (when pikeminnow are found in the ladder). FWS-Grand Junction's nonnative fish removal has just begun. Three or four of the walleye captured in Colorado pikeminnow sampling had stocked bonytail in their stomachs.
- h. Sherm said Jen Logan also reported difficult conditions on the White River. Removed 560 smallmouth bass (fewer near the dam). Also caught a 14.5 lb female pikeminnow near Taylor Draw. In nonnative fish removal on the Colorado River, they've captured only one northern pike and 3 smallmouth bass so far, along with some largemouth bass and green sunfish. The Merwin trap was removed from Snyder Pond yesterday after removing a large number of fish with it. Snyder is no longer spilling back to the river this year. Rifle Gap went from drought conditions to spilling with 105 cfs going through the screen. CPW was concerned water might overtop the screen, so they removed a downstream irrigation diversion structure, reducing the water surface elevation and alleviating the problem.
- i. Chris Michaud reported on 123a – They've only captured 16 walleye this year, down significantly from last year. They completed the work in Desolation-Gray canyons and saw a sizeable reduction in the number of smallmouth bass there (286 captured, compared to 1600 last year). However, they've captured fewer fish overall in this reach, including endangered fish. Walleye catch was up a little: 45 caught this year compared to 34 in 2014. A total of 374 smallmouth bass and 7 walleye were removed from Echo Park; 3 pikeminnow, and 1 razorback were also captured.

4. Nonnative fish

a. Reservoir updates –

Red Fleet treatment is scheduled for the week of October 5. Matt Breen said the Environmental Assessment review period is complete (FONSI will be out by August 3rd). No comments from the public were received, just from the state of Utah (UDWR). Trina Hedrick will respond to these comments. Meanwhile, Trina would like to know how Colorado and Wyoming are coming along with reviewing the management plan (comments are due August 3). Due to unexpected inflows this spring, another 16,000 pounds of rotenone will be necessary, so this will require additional planning, etc. UDWR is purchasing more rotenone than anticipated in March due to higher water volume from the high precipitation in May.

The Elkhead net project is back on track after some potential contracting issues. The River District has a contract with an engineering firm and plans to draw down the reservoir in late summer. Net installation is still planned prior to 2016 runoff. They expect a final design and estimate for the net soon. Sherm said Ray has received permission to negotiate with Pacific Netting Products. The River District has expedited work with the Dam Safety Office for approval within ~6 weeks of addressing their concerns. A draft lake management plan is expected from CPW by the end of this month.

Sherm said the Rifle Gap lake management plan is complete and he'll be sending it to the Program Director's office. CPW hopes to stock sterile walleye in Rifle Gap this year. They plan to stock smaller sterile walleye and then net fish at the dam to remove larger, spawning walleye for several years (fortunately, that population is barely hanging on).

Ridgway Reservoir has not spilled yet this year. CPW just completed a fishing tournament there on July 19, with >2,000 smallmouth bass removed (which Eric Gardunio estimated to be ~1/3 of the population). Sherm said Eric electrofished for three nights to capture and tag 169 smallmouths. Sherm said the tournament showed how anglers can play a very positive role in nonnative fish management and he hopes this bodes well for future tournaments (e.g., at Elkhead).

Krissy said Starvation Reservoir spilled twice this year and the temporary barrier held. Katie Creighton captured a yellow perch just upstream from Mineral Bottom in the Green River last week, which she thinks could have originated from Starvation. In response, Krissy said they plan to more carefully review the outlet works at Starvation and how those could be screened.

- b. Walton Creek rehabilitation project engineering feasibility study status – Sherm Hebein gave Kevin McAbee a draft plan which Billy is reviewing and editing. CPW, SkiCorp, and the City are discussing plans for rehabilitation. The first phase would remove ~90% of northern pike habitat is estimated at \$861K; phase 2 would address SkiCorp concerns is estimated at \$369K; and phase 3 is estimated at \$118K. Have \$500K of this \$1.3M so far, and there are incentives for SkiCorp to provide some funding. Next they'll work on determining who'll be responsible for maintenance and work on grants and funding.

5. Recovery plans update

- a. Review of draft SOW for Colorado pikeminnow PVA – Tom Chart e-mailed the draft SOW to the Committee on July 1, 2015. Objectives are to model short and long-term risk of extinction and also determine relative sensitivity of population viability related to major threats. Tom Chart said Harry Crockett commented that there are other Bayesian approaches we might want to consider (e.g. through a request for proposals); >Tom Czaplá will forward those comments to the Committee. Kevin McAbee said species status assessments (SSAs) have been using Bayesian approaches; however, we have

considerable momentum with Phil Miller's PVA for the pikeminnow in the San Juan, and this model seems most appropriate for species where we have a great deal of data like we do for pikeminnow. Bayesian approaches may be more appropriate for species with less data and more uncertainties. It's also possible a Bayesian approach could be incorporated *with* the PVA. Seth Willey said the Service likes to see a PVA done before the recovery plan, and so he thinks we're on track. Dave Speas mentioned that the San Juan PVA addressed the threat of mercury and asked if the threat of nonnative fish will be similarly addressed in this PVA by incorporating nonnative fish data. Tom Chart said he thinks it will be (recognizing it's unclear to what extent, in light of the time that might be required). Tom Chart clarified that a PVA can give us a sense of persistence, but not black-and-white answers. As discussed with the Management Committee, the plan is to set up and coordinate with the review team in advance, and then Phil would begin work when he is available in February >Biology Committee members will submit written comments on the draft scope of work by August 11. Tom Chart asked Kevin Bestgen to comment, as well.

- b. Razorback sucker species status assessment – Tom Chart said Kevin McAbee noted a Bayesian approach could be more appropriate for this SSA. Tom Czaplak said Regions 2 & 8 provided comments on the project plan for an SSA and a final plan will be out shortly. The Program Director's office will then develop a scope of work and share it with the Biology Committee.
- c. Melissa asked about how we might gather information about bonytail if we're not ready to launch an SSA for this species. Tom Chart said he thinks the time will be ripe for an information gathering effort for bonytail when the STReAMS database is complete. Dave Speas reported on the bonytail brainstorming meeting in July where options were considered from stocking bonytail in Lake Powell to establishing a managed habitat/refuge. Brandon Albrecht and others are fleshing out ideas considered at the meeting.
- d. Humpback chub recovery plan – Tom Chart said we have commitments from all team members except Zuni Pueblo and Navajo Nation. A doodle poll for the first team meeting (this fall) is pending. The first team meeting could be this fall (possibly with a webinar option, though in-person attendance is preferable). Ecological Service's folks will attend and discuss: 1) the difference between threatened and endangered status, 2) the new recovery planning process and 3) the FWS' expectations of the team and for the content of those recovery planning documents.

6. Review previous meeting assignments – See Attachment 1.

7. Review draft FY 16-17 work plan – See also the e-mail and spreadsheet posted to the listserver by Angela Kantola on June 19, 2015. Draft scopes of work are found at <http://www.coloradoriverrecovery.org/documents-publications/work-plan-documents/project-scopes-of-work.html>

Instream Flow

Depth to embeddedness – Tom Chart said we'll see what the peak flow technical supplement recommends and then determine how to address the recent unanalyzed depth-to embeddedness data.

Habitat Restoration

Evaluation of fish condition below GVIC screen return – Travis Francis will have a draft report out this fall. Fortunately, the study showed test fish either did not go through the return or when they did, they were relatively unscathed.

Easement management – Angela Kantola will send out the recently submitted annual report (*done*). Dave

Speas said it would be helpful to have a list of the properties under easement management; Angela will see if she can provide the Committee with a copy of the Colorado River WMA easement monitoring notebook containing this information. >The Program Director's office will ask Ouray NWR to provide an update on this work at the 2016 Researchers meeting. Krissy reported that Mark Fuller was able to meet with Ute Tribe representatives recently and the Myton Diversion project is now back on track.

98a – Sherman said they can restore these removal passes now that Cory Noble is on board, but he would like to maintain backwater netting. Like FWS and UDWR, CPW may incur additional costs for seasonal employees, also, but that's yet to be determined. Kevin said the budget spreadsheet keeps the budget level for 98a and focuses on the more effective backwater netting. >CPW will provide SOWs for projects 98a, 126b, 167, and Highline Lake net O&M.

Nonnative Fish Management

98b – Kevin said the SOW on the web was updated yesterday to add FWS-Vernal assistance for pike backwater netting (~\$14K in FY16).

110 – Dave said he and Tildon discuss this project often and have wondered if there are better ways to focus effort (this study collects few large bass). >The Committee will make this an item of discussion at the nonnative fish workshop. It would be nice to have a “bang for the buck” metric, but we also have to consider relative risks.

158 – This work is scheduled to begin in FY17 and would complement the elevated base flows for pikeminnow project. Jerry Wilhite thinks it would help fill gaps in our understanding about lack of Colorado pikeminnow recruitment. Melissa asked if we should start the larval drift portion (Task 1, FWS, \$40,292) in FY 16, since the most important question may be that of larval abundance in the backwaters. Others thought it might be wiser to keep the study whole. Dave Speas and Kevin Bestgen suggested the more direct way to evaluate this would be to directly stock Colorado pikeminnow larvae. (Dale asked if we have a source – perhaps Dexter could provide some? Tom Chart said he's had other discussions with Dexter and thinks they could, but their spawn time is likely much earlier than wild spawn in the Yampa River. Dave will check.) Dave emphasized we need carefully consider the most important objectives for this work (again, stocking larval pikeminnow could answer some of the questions). Krissy clarified that environmental conditions compromised information that could be gathered from this work previously. They learned what mesh size was effective at excluding larger fish but allowing smaller Colorado pikeminnow to enter. Matt would like to repeat the experiment; Krissy would prefer to move forward and implement the backwater netting. Pete and Dave asked if this netting is feasible on a larger scale; Krissy said she thinks so. Melissa suggested we still need to determine local larval drift. The Committee recommended that Matt complete the report and revise the SOW (to begin in FY17 instead of FY16) to address some of the concerns the Committee has raised.

115 – The Committee discussed objective 8, “Provide a study plan and implement field investigations to better understand prospects for flow or temperature disturbances to reduce reproductive success of smallmouth bass in the Green River.” The draft work plan contemplates beginning this in FY17, but could it begin in FY16? It would likely have to be part of the Flaming Gorge spring flow request and have something of a study plan. Dave Speas thought the methods might need some pilot testing. >Kevin Bestgen and others will discuss and flesh this out for FY16 funding after Kevin provides a draft (perhaps in time for the next GREAT call/meeting). The Committee put \$50K back into the work plan budget table for this work.

ADJOURN: 4:30 p.m.

Wednesday, July 29

CONVENE: 8:30 a.m.

Propagation

PIT tags – Dale said the Program has enough PIT tags for FY16. We’ve previously discussed exchanging all the “cheese block” readers with stick readers at the hatcheries (keeping one “cheese block” per field trip since these can read both old and new tags), but we’ll need more stick readers to do that. We also need more injection “gun” taggers. We also may want to consider additional submersible antennas (perhaps having individual offices cover these (e.g., Tildon Jones included some in one of his SOWs)). Dave said he and Mark McKinstry are working on the new PIT tag contract, but it may be into FY16 sometime before it’s completed (Reclamation’s goal is to make it a DOI-accessible contract which would allow, for example FWS could buy their own equipment directly). If additional funds are available, we also could pre-purchase tags for FY17. We should find out how long it would take to get submersible antennas when they’re ordered (noting the San Juan program is likely to purchase several, also, and there could be a shortage). >PIs who want their own submersible antenna/s should let Dave and the Program Director’s office and the Biology Committee know and get it in their SOW as a no-cost item with a note that USBR will purchase. These data would go into the STReaMS database (all the raw data will be archived, but clean data will be available on the main STReaMS query page).

Research & Monitoring

Dave said we have several PIT antennas currently deployed in the Upper Colorado River Basin. They aren’t maintenance-heavy, but do require O&M and damage can occur from flooding or ice, for example. Reclamation has these costs covered for next year internally under a contract with USU, but if antennas prove important going forward, the Program likely will need to commit to some funds for O&M&R. Dave has talked with McAbee and Bestgen about another part of the agreement Reclamation is establishing with USU (Drs. Phaedra Budy and Mary Connor) to gather all the PIT data and evaluate its potential uses to the Program (enhancing survival estimates, examining year biases, etc.). Kevin Bestgen is undertaking a similar effort for razorback sucker. (Note: this project gets to some of the questions Tom Pitts asked on the recent Management Committee webinar.) A final part of the agreement is another PIT antenna installation somewhere in the basin (to be determined). Krissy asked how this contract will mesh with a Program database manager. Kevin McAbee said we haven’t written the position description yet, but at minimum, that person would take all the antenna data and put it into the necessary file format to be analyzed in Program Mark.

The next version of STReaMS will be vetted with PIs this fall, presented at the Researchers Meeting, and then another workshop held in March.

The Committee discussed PIT antennas, three species being stocked and tagged, etc. CPW recently stocked bluehead suckers in Milk Creek. Dave Speas and others endorsed this, noting it seems good to be adding native fish to the system as we remove nonnatives.

>Tom Czapla will tell PIs what additional information the Program Director’s office would like to see in the population estimate annual reports (esp. #128). >The #128 SOW should be modified to provide that direction to the PIs.

The Biology Committee agreed that we do need to handle all endangered fish encountered during population estimates to maintain data integrity. Tildon has mentioned that he needs Bluetooth compatible PIT scanners to speed data loading.

#131 >Dale will check with Travis to be sure he's comfortable that he can accurately identify very small *Gila*; at a minimum, we'll need to send verification samples to LFL. Dave Speas referenced the goal to evaluate Age-1 year class strength, noting he thinks the main objective will be to develop sampling techniques to capture these young fish.

Dale said white suckers and hybrids definitely are on the increase in the fish ladders (and hybrids often outnumber pure white suckers). This is an increasing concern for flannelmouth and bluehead suckers.

The Committee briefly discussed outreach; Angela welcomed participation on Friday's I&E call. The Committee praised this year's briefing book. Tom Pitts said that both Brett Gracely at Colorado Springs Utilities and Denver Water have indicated a willingness to include in customer bills short stories/notices about the need for nonnative fish control to protect native fishes. Tom Pitts will ask west slope utilities to do likewise (starting with diverse and numerous members of the Executive Committee that support Tom Pitts' work on the recovery programs). Sherman Hebein reviewed public outreach for tournaments (Ridgway last week; Elkhead anticipated) and discussed potential catch-and-keep regulations. The Committee then discussed continued existing protective regulations for fisheries (e.g.) smallmouth bass at reservoirs where we know we can't manage them (e.g., McPhee). Krissy emphasized that the only way we'll successfully implement prevention basin-wide over the long term is to replace fertile problematic nonnative fish with infertile fish (e.g. smallmouth bass). Krissy said the States will need to develop these sterile fishes. The Committee acknowledged what a large and difficult project this will be for Lake Powell and Flaming Gorge. We have to get rid of the sources of these nonnative fish in the upper Colorado River basin drainage. Dave Speas noted we also have to consider how predator load may be increased by this method. Species-specific piscicides would be a huge help, of course.

The Committee noted the work plan review went very smoothly, though it would be good to have more introduction of new or significantly revised scopes of work from PIs in the future (perhaps on a webinar a week in advance of the work plan review meeting. >Angela Kantola will make a note for the FY18-19 work plan review.

8. USGS quasi-3D model and field experiment to define razorback sucker larval drift as it relates to razorback entrainment in Green River floodplains (better describe larval drift, etc.) – Tom Chart said USGS and his office are looking for alternate funding for the proposal they developed that wasn't funded through the USGS-FWS funding source. Tom will share the proposal with the Committee and invite USGS representatives and Kevin Bestgen to join him in providing a presentation to the Biology Committee (*now scheduled for the October 13 webinar*). Kevin Bestgen thinks these techniques are relatively low cost, but effective and USGS would be good to work with on this.
9. (Discussed Tuesday afternoon: Review reports due list. Angela Kantola will send an updated list to the Biology Committee with the draft meeting summary.)
10. Schedule next webinar or meeting and identify agenda items – The Committee scheduled a webinar for October 13 from 8:00 a.m. to noon.
11. Consent item: Review and approve May 28, 2015, Biology Committee webinar summary – Pete Cavalli provided edits which Angela Kantola sent with this agenda. Angela will post the final summary to the listserver (*done*).
12. Wrap-up – Angela asked how the Committee liked this meeting venue; everyone liked it and the convenience of staying downtown. The phone connection was very good. The only downsides were the loud HVAC and the lack of internet access for non-DOI personnel.

ADJOURN: 11:30 a.m.

Attachment 1: Assignments

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

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

1. Tusher Wash Screening:

- **Brent Uilenberg** and **Bob Norman** will contact the Program Director's office regarding input from biologists on the Tusher Wash weir wall design. 5/28/15: *Kevin McAbee said Reclamation (Norman and McWerter) has begun work on design.*

2. Humpback Chub (population estimates)

- **& Humpback chub combined population estimate** from Gary White. 6/28/13: *Three reports are pending: a 2011-2012 Black Rocks report, a 2011-2012 Westwater report, and a 1998-2012 combined analysis report. Previous discussion indicated the combined analysis would be provided by LFL and tacked onto the Black Rocks report, but it doesn't fit neatly into either the 2011-2012 Black Rocks or 2011-2012 Westwater reports because it has data from both. Further, Grand Junction CRFP's SOW only covered writing a Black Rocks report, not a combined report. 1/16/14: What Kevin Bestgen presented was the joint report and parts of it will appear in the individual reports. A young-of-year sampling effort may need to be added back to the fieldwork (included in draft FY16-7 SOW). Czapla said we have new due dates of January 2015 for the Black Rocks and Westwater reports. 5/28/15: Travis was working with Kevin Bestgen on the methods section; Kevin has provided revisions and Travis anticipates completing a draft by the end of June. Brian Hines said he's on a similar schedule and will have something by the end of July or August. 7/28/15: both reports now expected by the end of August.*
- **Dave Speas** will look into getting/transferring equipment to deploy submersible antennas to help get some humpback chub data in 2015, since the Black Rocks and Westwater humpback chub population estimates will be deferred until 2016. 3/4/15: *Dave thinks they have 5-6 antennas available; PIs should let Dave know if they're interested. Dave would like to try them in Desolation and Gray canyons again. 5/28/15: Dave will work on a schedule. 6/25/15: Dave sent PIs an equipment usage survey; 7/28/15 Dave anticipates being able to meet most needs, but we may want to consider acquiring some additional antennas (and some offices may purchase them if they find available funds). The cost about \$5K/each.*
- **Tom Czapla** will coordinate an inventory of PIT antenna equipment and potential installation locations, and then convene a conference call to prioritize and determine when and where the equipment could be installed. 5/28/15: *Dave Speas is working on this (will e-mail folks in the next month and develop a schedule for equipment use) and will coordinate with Tom Czapla.*

& 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. 2/21/14: No deliverable on Upper Basin fin clips; cost would be ~\$37K (Committee considering, but not our highest priority; see 2/21/14 meeting summary). 8/26/14: Reclamation is working on the funding agreement (may inform index of effective population size different than that for the Grand Canyon population). Tom Czapla said Moab handled at least 25 Deso and WW humpback chubs during smallmouth bass removal and got fin clips from all of them. Tom Czapla said he thinks the priority for analysis should be the Desolation, Westwater, and Black Rocks fish. Moab may still collect some more in Westwater this year. The roundtail chub would be a lower priority. 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 Czapla sent to BC 1/21/15); >**Melissa Trammell will find and send the plan development proposal document to Tom Czapla 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 (pending).

3. & Nonnative fish management follow-up:

- Walleye: >**Kevin McAbee and Paul Badame** will work on organizing a “walleye summit” with appropriate outside expertise. Pending. 10/27/14: Still trying to get some outside funds to support this effort. 7/28/15: Matt Breen suggested contacting Greg Sass with Wisconsin-DNR about a walleye presentation for the walleye summit or the NNF workshop.
- & Private (LaFarge, aka Snyder) Pond near Rifle: **Harry Crockett** will find out if the landowner will allow and if CPW can reclaim the pond before spring runoff (considering a seismic gun option); >**Tom Chart** will coordinate with **Harry** and **Brent Uilenberg/Bob Norman** on repairing the notches after runoff. 6/11/14: Sampling ongoing and Reclamation will work with CPW on filling the old notches. Harry said rotenone is still an option (and more likely than a seismic water gun approach at this point). 8/26/14: Harry said they couldn't arrange a site visit (CPW, Reclamation) before spring runoff, but that could happen now that flows have receded (>Tom Chart will contact Brent about this). **Harry Crockett** will contact **Jackson Gross** and let him know the Committee appreciate Smith-Root's interest in the Snyder Pond work (and willingness to bring considerable cost-share) (done), but would like to see a proposal that includes evaluation of success and a report. 6/11/14 Jackson indicated that the availability of hydraulic pumps had been a problem this spring, but that pumps are now available from Smith Root. 8/26/14: CPW is more interested in the rotenone option at this point. Dave said sonic water guns might be useful in the Yampa wetland areas. 10/27/14: **Reclamation** will review plans for filling the notches with the city of Rifle, which has a nearby water intake. 5/28/15: Filling the notches is not feasible since it turns out they maintain the hydraulic pressure on either side of the levee within specific bounds. Lori Martin has been gill-netting the ponds since ice-out and installed a big trap net a month ago near the outlet to trap or obstruct fish trying to leave the pond once it connected. Long-term solution(s) will need to be considered further. Rotenone might still be an option (since pike are not abundant in the Colorado River and Rifle Creek has been screened, the chances of re-invasion are reduced).
- **Dave Speas** will talk to Rob Clarkson regarding what support he may be seeking for the novel piscicide study. 3/4/15: Dave said the work is being done at a USGS facility in Wisconsin; Rob reports that the PI estimates testing Supraverm at ~\$10K per additional species. Wisconsin likely has walleye, bass, and pike readily available and they believe they could get endangered fish from Arizona. Rob told Dave he did not expect to see any difference in test results among Gila species. 5/28/15: Kevin McAbee pursued Service funding for adding species to the Supraverm study, but USGS then said they didn't believe Supraverm was proving as selective as initially thought. **Paul Badame, Kevin McAbee and Harry Crockett** will find out if Utah and Colorado have regulations similar to the one that David Ward in Arizona that allows temporary use of ammonia as a piscicide. Kevin McAbee 2/25/15: David had indicated he acquired a 24(c) Special Local Needs pesticide registration from the state of Arizona. 24(c) references a section of the Federal Insecticide, Fungicide, and Rodenticide Act that gives ALL states the ability to "register an additional use of a federally registered pesticide product". Both Utah and Colorado (and I assume all other states) maintain a list of pesticides registered in this way. (Kevin e-mailed the Committee a summary from various state and federal websites describing this regulation). Kevin concluded if someone devoted the time and energy, the Recovery Program should be able to try to apply for a 24(c) registration for ammonia, just like Ward et al. did (likely going through the state's department of agriculture). However, approval requires a lot of specific planning and paperwork, and is not guaranteed. Committee to discuss ramifications of this conclusion. 3/4/15: Krissy suggested some of the ponds that Dale suggested would be good tests. Kevin asked if it might be used at LaFarge Pond if Rifle is concerned about rotenone; Sherman said potential impacts would need to be carefully investigated, but it could be considered. Krissy recommended that both Utah and Colorado begin investigating the process and required lead time. Sherman Hebein contacted Laura Quakenbush; Pesticide Registration Coordinator for Colorado's Division of Plant Industry and

forwarded the subject email and attachments to her. Laura and John Scott, Pesticide Section Chief, will review the situation and advise what options are open to use ammonium hydroxide as a piscicide in Colorado. 5/28/15: Kevin McAbee again asked if ammonia might work at LaFarge and if we should pursue permitting for its use at this site; >Kevin will discuss with Lori Martin and >Harry Crockett will let Laura Quakenbush know we're still interested. 7/28/15: The Merwin trap may be effective enough at Snyder, but if/as we discover other locations, we might consider piscicides. **Utah** may look into whether ammonia could work at the pond below Flaming Gorge at Brown's Park.

- To get the word out to anglers and guides to report fish captures below Flaming Gorge, **Jerry Wilhite** will mention it to guides when he talks with them each year, and we will mention it at the Flaming Gorge meeting, also. Jerry also will e-mail a few of the active folks and ask them to spread the word; >**Kevin McAbee** and **Melanie Fischer** will draft something for Jerry to share with the Green River Outfitters and Guides Association (GROGA), asking them to report burbot, northern pike, smallmouth bass, kokanee, and Colorado pikeminnow seen or caught in the A, B, and C sections. 7/28/15: *Kevin McAbee and Krissy and Jerry have drafted a letter that Trina Hedrick and Ryan Mosely commented on, also. Jerry and Ryan will be the points of contact for data submission.*
- 4. **Brent Uilenberg** and **Harry Crockett** will be working with CPW and Reclamation engineers to evaluate the potential for a permanent barrier downstream of Ridgway Reservoir. 6/11/14: *Harry said Brent would like to define the sideboards before committing time to this. The **Program Director's office** will begin the conversation on this and Elkhead with Brent. Meeting/conference call was held on August 6th in Glenwood Springs. 8/26/14: a meeting is scheduled September 4. Dale Ryden said they sampled from Delta to Redlands and didn't find any bass, so that's good news. 3/4/15: CPW, CWCB, and Reclamation have talked to Tri-County and they will attempt to avoid spilling again this year. 5/28/15: Kevin McAbee is working on setting up a stakeholder meeting in July (7/28/15: now contemplated for September or October). We will keep reservoir updates as a standing agenda item.*
- 5. 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.*
- 6. Related to the peak flow study plan, **Jana Mohrman** will look into cost estimates for additional aerial photography analysis. **Committee members** will continue their review of the draft plan and provide comments by the end of September (the same will be requested of the WAC). Within two weeks, **Tom Chart et al.** will prepare a short background outlining the genesis of this work and restate the objectives (*done*). *PDO sent revised plan to BC & WAC for review; comment deadline extended to January 23; revisions and review pending. 5/28/15: Jana said the study plan is still being revised and more tightly connected with the Green River and Aspinall study plans. The 2011 aerial photos will be posted on the internet by the end of this summer (not georeferenced). 7/28/15 The **Program Director's office** will seek a revised due date from **Argonne**.*
- 7. **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.*
- 8. **Kevin McAbee** will follow up with **Julie Howard** regarding impacts of wind speed on sampling efficiency and potentially safety. 5/28/15: *On hold until Julie returns.*
- 9. The **PD's office** will talk to Steve Platania about otolith microchemistry as they investigate options to have USGS analyze otoliths. 5/28/15:– *Pending, but meanwhile we're submitting a proposal for FWS funding to*

have additional walleye otoliths (and potentially other tissues) analyzed for strontium and maybe other isotopes. This is a bit of a pilot study to work with the USGS lab here in Lakewood which has all the needed equipment here. Focus on lower Colorado and lower Green river walleye otoliths. Kevin said they've mentioned Steve Platania's work to USGS and if the study is funded, they will be in touch. 7/28/15: Funding status should be known in a couple of weeks.

10. As the time to stock bonytail approaches, **Tom Czapl**a will seek the Committee's approval of stocking locations via e-mail. 5/28/15: *Wahweap bonytail went to locations identified in the plan (Green River at Jensen Bridge and Green River State Park and Dewey Bridge on the Colorado). Dale would like to add a site near Rifle (this year or later) for about a fourth of the fish they stock (~2,500). In light of anglers around Rifle, Dale will check on planned stocking dates. Harry wondered if downstream around Rulison would be better; Dale will check truck access. Tom Chart asked if hits on the Price-Stubb antenna might provide information; Dale thought it could help, but wouldn't be definitive. Harry asked if we could more formally analyze what's working in terms of stocking locations; others endorsed this idea. The Committee concluded this won't happen until we have someone in the database position to do the analysis. Meanwhile, Tom Chart said he has no objection to trying other sites. Krissy Wilson recalled the bonytail that went into Stewart a few years ago and left as flows receded; therefore, we should continue to work to find low velocity habitats from which bonytail can leave of their own volition. Dale said one difficulty has been that low velocity sites are often quite inaccessible for safe transport of fish. Another option is to stock fish far enough upstream of low velocity habitat so they can drift in. Dale will stock at previous locations for now and further explore low velocity habitats in this area and discuss sites with Harry. 7/28/15: Dale said they have a couple of locations to consider in lower-water years. Sherm said Lori and Jen observed that when we put bonytail in Butch Craig showed up in the Gunnison River at larger sizes. To use Butch Craig for this purpose again, we need to address access issues (re-establish contact with and permission from landowners) and rotenone to remove nonnative fishes. CPW and FWS will continue to discuss and decide how to move forward to re-acquire access and remove nonnative fishes. Dale also will check to see if Butch Craig is part of the Colorado River floodplain refuges.*
11. The Committee endorsed an experiment to tag smaller hatchery razorback and bonytail; >**Tom Czapl**a will investigate which hatchery could do this. **Tom Czapl**a will check the BO written for recovery actions to see if any change in permitting would be required.
12. **Tom Czapl**a will forward Harry Crockett's comments on the draft Colorado pikeminnow PVA scope of work to the Biology Committee. **Biology Committee members** will submit written comments on the draft scope of work by August 11. Tom Chart asked **Kevin Bestgen** to comment, as well.
13. FY16-17 Work Plan
 - **Angela Kantola** will send out the recently submitted floodplain easement management annual report (*done*). Dave Speas said it would be helpful to have a list of the properties under easement management; Angela will see if she can provide the Committee with a copy of the easement manual/notebook with this information. The **Program Director's office** will ask **Ouray NWR** to provide an update on this work at the 2016 Researchers meeting.
 - **CPW** will provide scopes of work for projects 98a, 126b, 167, and Highline Lake net O&M.
 - **Kevin McAbee** will include in the December nonnative fish workshop a discussion of how best to focus effort under Project #110. Lower Yampa River smallmouth bass control, since so few large bass are captured in this work.
 - **Kevin Bestgen** and others will discuss and flesh out the proposed objective #8 for FR-115 to study effects of flow/temperature disturbance on smallmouth bass reproduction for FY16 funding after Kevin provides a draft (perhaps after the next GREAT call/meeting).
 - **PIs** who want their own submersible antenna/s should let Dave and the Program Director's office and

the Biology Committee know and get it in their SOW as a no-cost item with a note that USBR will purchase.

- **Tom Czapla** will tell **PIs** what additional information the Program Director's office would like to see in the population estimate annual reports (esp. #128). >The #128 SOW should be modified to provide that direction to the PIs.
- #131 Dale will check with Travis to be sure he's comfortable that he can accurately identify very small *Gila*; at a minimum, we'll need to send verification samples to LFL.
- **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).