

**Biology Committee Webinar Summary  
October 10, 2013****PARTICIPANTS**

**Biology Committee:** Jerry Wilhite, Harry Crockett, Tom Pitts, Dale Ryden, Krissy Wilson, Brandon Albrecht, and Pete Cavalli. (Melissa Trammell and Dave Speas were unable to participate due to the Federal government shutdown; Dave Speas provided comments later.)

**Others:** Paul Badame, Kevin McAbee, Jana Mohrman, Tom Czapla, Angela Kantola, Tildon Jones, Michael Mills (CUWCD), Kevin Bestgen, Matt Breen, and Joe Skorupski.

***CONVENE: 9:00 a.m.***

1. Presentation/update on humpback chub Westwater/Black Rocks analysis – Kevin Bestgen and Gary White have been working with Travis Francis on a joint analysis of the Westwater and Black Rocks data, looking at movement rates, combining data for better estimates of probability of capture, and incorporating older data, where possible. Data were collected on a two or 3-year sampling interval with 2-year breaks in between. Sampling is multi-pass mark/recapture (4 passes/year in Black Rocks and 3 passes/year in Westwater) via trammel netting in crepuscular periods and electrofishing during daylight hours. In 2012, baited mini hoop nets (third pass only) were added to detect fish that came near, but didn't enter the nets in Black Rocks. One of these nets was outfitted with a PIT antenna. Two baited 12" PIT antennas also were fished. This roughly doubled the number of recaptures in that pass. The PIT antenna data are a little different since the fish are not handled, but really add to the recapture numbers. Researchers also learned that tagged fish attracted to the baited nets frequently are not caught in the nets. Kevin discussed factors that went into selecting the 70-parameter model they used. Adult abundance estimates show a big initial decline in the Westwater population from 1998 to 2000 (note: this is before smallmouth bass became abundant in the river upstream). Kevin said these are pretty reliable estimates. The Black Rocks population also declined by ~ 50% since sampling began in 1998 (again, before smallmouth bass and pike became abundant in the river upstream). Both populations appear to have stabilized at lower levels. Kevin discussed coefficients of variation (CV). CV's less than 15 or 20% are ideal and increase confidence in the abundance estimates. The relatively larger Westwater population has higher recapture rates and lower CVs, especially in recent years (10-15%). Black Rocks estimates had higher CV's (~25-30%), except for 1999 and 2012 (10-15%). 2012 recaptures via the PIT-tag arrays really helped reduce the CV in 2012. Westwater and Black Rocks survival rates (fish >200mm) have been pretty stable with Westwater (~70%) a little higher than Black Rocks (~65%) overall, and their patterns have mirrored each other through time. Surprisingly, no large declines were detected in survival early on (based on recapture data). A lower survival rate might have offered clues to why the Westwater population in particular declined so much; however, there are other reasons the population may have declined. Still, a 30% loss rate/year is significant if recruitment is not replacing fish lost. Size-dependent survival is still being reviewed, but may reflect that older fish die at a little faster rate simply due to their age. Tom Pitts asked if survival is adequate to maintain a self-sustaining population; Kevin said we don't know. Self-sustaining populations require recruitment (which is difficult for us to estimate because we catch so few fish <150-200mm) or immigration (likely near 0) sufficient to replace lost fish. In the case of a 70% survival rate and a population of 2,000 animals, about 600 fish would be lost each year, so that many would need to recruit to the adult population each year to support a stable population. The Program Director's office said that we are starting to understand pulsed recruitment in the Colorado pikeminnow populations, because we can couple Age-0 and adult monitoring datasets. Kevin and other researchers have pointed out that perhaps reinitiating the Age-0

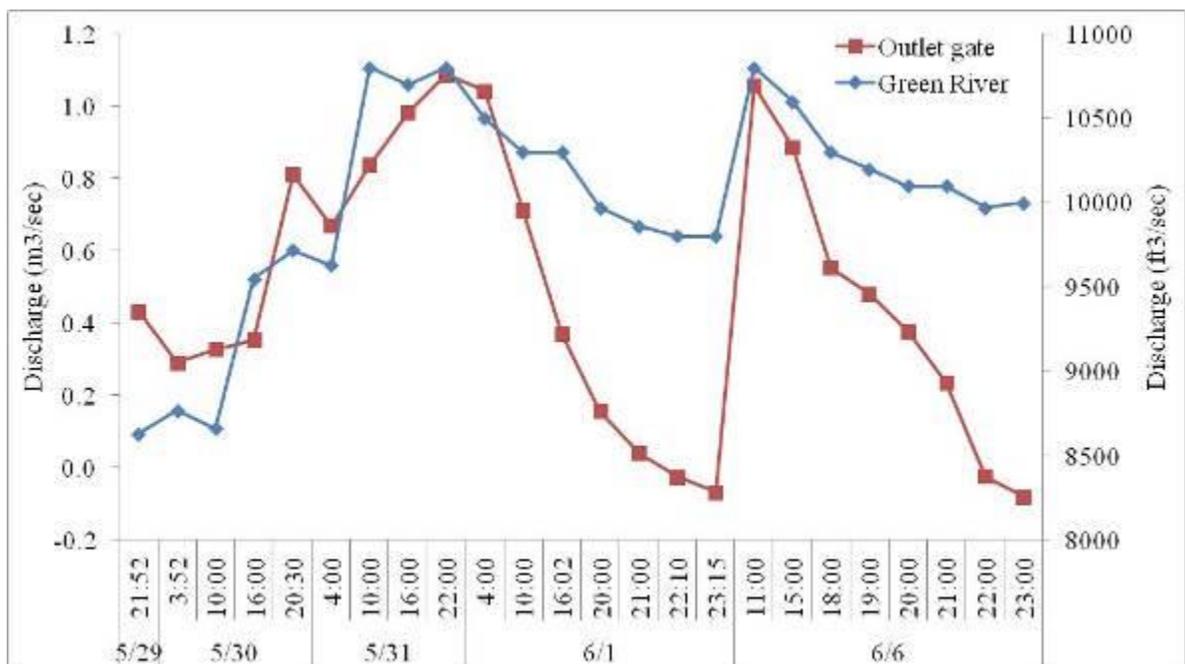
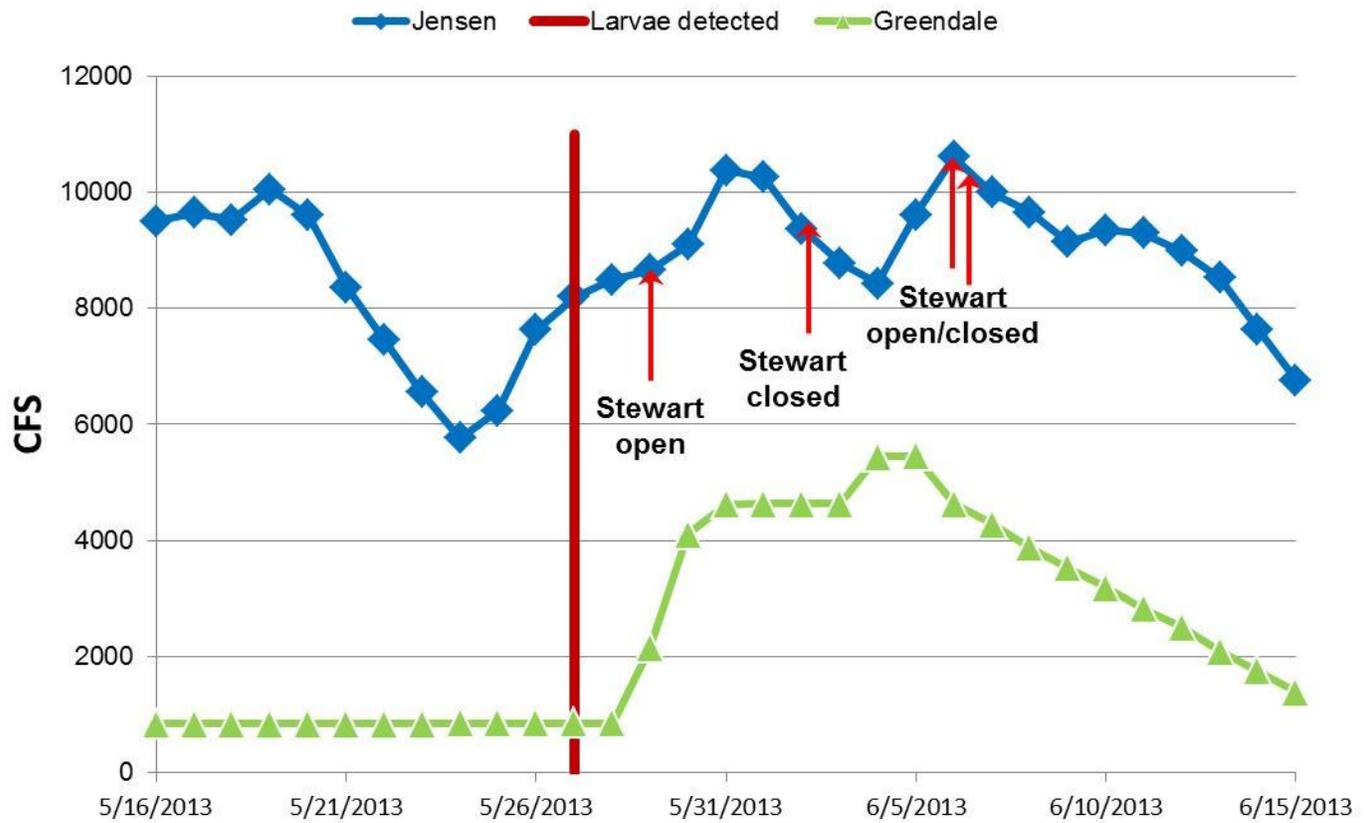
humpback chub monitoring could provide similar insights. For example, sampling of Age-0 chubs (with follow up ray counts, or other diagnostic techniques to help distinguish roundtail from humpback chub) could help track these cohorts working their way into the adult population. Utah also is interested in trying to understand cohort strength. Tom Pitts asked if adult pops may fluctuate even if self-sustaining and Kevin Bestgen said they definitely might, just as we see in Colorado pikeminnow. Recruitment is what drives these populations in terms of fluctuations in abundance. Tom Pitts suggested these fluctuations should be considered in revision of species' recovery plans. Kevin Bestgen reviewed annual probability of capture (20-30% is ideal, below that precision decreases and CV increases). The PIT detection with hoop nets really boosted the probability of capture. Kevin said they also looked at rates of movement ("transition rates") between the Black Rocks and Westwater and found them relatively low for populations that are pretty close together: 1.4% of BR fish move to Westwater each year and 1.8% move from Westwater to Black Rocks. These populations operate pretty much on their own in terms of adult movement. Given the higher Westwater population, more fish go to Black Rocks than vice versa; if one assumed 2000 fish in Westwater (excluding the 1998 estimate), about 36 fish would move to Black Rocks each year. Similarly, if one assumed 600 fish in Black Rocks, about 8 would move to Westwater each year. This results in a net of about 24 fish per year moving from Westwater to Black Rocks, or about 4% of the BR population. We don't have enough data to determine if these transition rates have varied over years.

Preliminary recommendations from this work are:

- Increase adult captures and recaptures by any means possible (other gears, PIT arrays, etc.);
- Increase recruit capture and recapture rates (baited hoop nets, PIT arrays);
- Sample Age-0, compare to historical samples to understand recruitment variability;
- Conduct morphological analysis (and/or potentially genetic analysis in the future) of Age-0 to better identify recruit potential; and
- Continue joint reach analyses.

Kevin, Travis, and others will discuss how to proceed with reporting on this analysis once Travis completes this year's fieldwork. For now, Dale said this presentation would serve as the joint analysis until we determine how to report. Travis is thinking of including some of this information in his Black Rocks report. Kevin thinks it makes sense to include all of the analysis somewhere since it is a joint analysis. Kevin added that roundtail chub data also are collected and show different patterns of abundance over time (and it would be good to incorporate these data in additional analysis).

2. Stewart Lake operation and preliminary discussion of 2014 LTSP operations – The Committee began a preliminary discussion on the approach to outlet gate operations under the Larval Trigger Study Plan (LTSP) at Stewart Lake for the 2014 spring peak. 2013 operations featured some debate as to the most effective operation (e.g., when and how long the gates should remain open to maximize razorback larvae and water entrainment, and whether or not to introduce bonytail "on top of" razorback sucker). Joe Skorupski provided graphs of Stewart Lake operation (below). Razorback sucker larvae were detected on May 26, the gate was opened the 28<sup>th</sup> and closed on June 3 (so not to lose water and larvae), reopened on 6<sup>th</sup> and closed quickly when negative flow detected. Razorback larvae were successfully entrained and the lake reached maximum inundation. During the LTSP discussions, some debate was had as to whether the gate should have remained open from the 3<sup>rd</sup> to the 6<sup>th</sup> - as some argued that maybe daily fluctuations could improve entrainment of water and fish. Kevin McAbee asked if there would have been opportunity to add water by opening the gate during any daily fluctuation; Joe and Matt said they watched it on an hour-by-hour basis and closed the gate when it was clear they were losing water. The Program Director's office thanked UDWR for the great work and terrific results. Every year will be different, and we understand Western's concerns and that daily pulses should be part of the conversation.



Summer operations - Supplemental water (about 150 af over a week) was provided to Stewart Lake about two weeks after the gate was closed and another full week of water (~150 af) at the end of July. That water only lasted about 3 days (before evaporating/transpiring in plants), then the lake was drained (it was at about

6 surface acres when drained). All of this will be discussed at the October 29 meeting of the Stewart Lake Work Group. The Biology Committee will get an update on this at their next meeting or webinar. For the Committee's information, the Stewart Lake Work Group is usually chaired by UDWR (although the October 29 meeting was convened by USBR-Provo). Dave Speas typically participates in their calls (and plans to ask during the October 29 call if it would be appropriate for someone from the PDO to participate beginning next spring).

### 3. Nonnative fish management update

- a. Review/discussion of nonnative fish addendum to RIPRAP – This list of actions was generated through the sufficient progress process and was developed with the States' Fish Chiefs. As this was a critical piece in the Service's review of the Program's progress, it will be important for both the Biology and Management committees to carefully track these action items. This addendum and the Strategy should inform our conversations as we revise the RIPRAP and make work plans. With regard to Starvation Reservoir, Krissy said UDWR hopes to discuss their review and next steps with the Program Director's office next week and Paul Badame will make a presentation at the Nonnative Fish Workshop.
- b. Review schedule for approving final basinwide strategy – The Program Director's office worked with States to develop final draft, which was sent out Tuesday with request for Biology Committee and Information & Education Committee comments to Kevin McAbee, Angela Kantola, and Tom Chart by November 1<sup>st</sup>.
- c. Review/discuss plans for nonnative fish workshop (format, agenda, etc.) – The Program Director's office recommends a session to work through the RIPRAP addendum, get update from the States on each item. Potentially, we may decrease presentation times and allow more time to discuss different approaches to the nonnative fish problem.
- d. Highline Lake spill – Harry Crockett said Highline ordinarily drains via a spillway (which has the net). The outlet structure (bottom release) is only intended for emergencies, but is operated once a year to test it (at a time when the dissolved oxygen levels at that depth are nearly anoxic for fish). Highline has mostly green sunfish, bluegill, crappie, channel cat and largemouth bass and a small component of smallmouth bass (<1% of the catch in Lori Martin's sampling). The outlet was tested this year on August 27 and the gate wouldn't close, resulting in an uncontrolled spill of ~150cfs. The Highline Canal was adding ~120cfs into the lake at that time, so the lake didn't drain very fast. CPW worked quickly to correct the problem and got the gate closed on September 3. The problem was subsequently repaired (a piece of pipe had become stuck in the gate). The gate was then open and closed several times. CPW plans to drain and dredge Highline to remove the many feet of sediment that also threaten the ability to operate the emergency outlet. A tube net to screen the outlet structure when dredging commences was used when they tested the gate on the outlet works and the net worked as intended (and backup nets have been ordered). Lori hasn't been able to sample Mack Wash yet due to the continuing inflow into the lake; but probably will do so in mid-November. Jenn Logan electrofished at the confluence of Mack Wash and the Colorado and saw nothing unusual. Dale Ryden said their sampling down to the Loma Boat Launch (just upstream of the confluence) right after the spill didn't turn up anything unusual. They added another trip the following week and didn't think the numbers were elevated either, though a few unusual species (a 12-14" goldfish, a few yellow perch, and ~20 small apparent golden shiners) potentially could have come from the reservoir. (The Program Director's office said the only place the Strategy documents golden shiner is from Rifle Gap Reservoir.) Harry said about 48 hours into the problem, the DO at the outlet increased, so it's hard to imagine that no fish would have escaped. Kevin McAbee asked if CPW is considering using tube nets on the emergency

outlet structure during future annual tests. Harry thought that was an outstanding recommendation. Tildon Jones asked about the potential for a rigid weir in the wash just below the reservoir; Harry said he thought this could be explored. Paul Badame suggested that if a tube net works on the outlet, it seems like the more reasonable option. Harry agreed that if the tube net works as well as it did, that would be fine; a weir would just provide further redundancy (however, cost unknown). >Harry will discuss this with the engineer. Harry added that the canal typically isn't opened again until mid-April, which means we'll likely have to seek an alternative venue for the electrofishing course planned for next spring.

e. Update on field activities

- i. Work on pike in the Little Snake (see Attachment 2) – Pete said that in Bobby Compton's opinion, pike are not widely distributed in the Little Snake in Wyoming, but he saved otoliths in case we can analyze them to determine origin of the fish at some point. Wyoming plans a similar effort in future years. Starting in January, Wyoming will have a must-kill regulation on pike and no limit. Harry said Kyle Battige attempted to sample the Little Snake in Colorado. Some areas were de-watered, but he didn't collect any pike in the areas sampled (six sites from above CO Hwy 318 upstream to above Baggs, WY; additionally Bobby Compton and John Hawkins sampled a slough just into Colorado ). Bobby says there are no true barriers to fish passage in the Little Snake.
- ii. Other field reports from project PI's or Biology Committee representatives – Krissy said folks from Utah, BioMark, University of Utah and Reclamation partially installed a stationary PIT antenna on the Dolores River about a month ago. Flows came up about 100 cfs in one day, so they were only able to install one full antenna (five panels across the river). Flows remained too high to complete installation of the first antenna and begin on the second antenna (still too high last week and they found lots of sediment and rocks atop the first antenna). The plan is to try to get the first antenna working this year, monitor its performance during future high flow events and install the second antenna if funding permits and if the site appears to be geomorphically suitable to do so.

Matt Breen reported a ~100 mm (likely Age-0) walleye in one of the Green River backwaters this year (believed to be the first one, although Trina caught a somewhat larger small walleye a few years ago).

Lower Colorado – Dale said they caught a bunch of walleye during pikeminnow population estimates, mostly downstream of Dewey Bridge. They reallocated some of their nonnative fish efforts there, but walleye numbers were down from those seen earlier. They are scheduled to sample downstream of Cisco again next week. This pattern matches what Dale has seen in the San Juan, where fish are found upstream in the spring and then their numbers drop later in the year.

The Program Director's office mentioned that Matt Breen was encouraged by how intact he found the White River native fish community this year in the lower White after last year's fires.

Dale reported Age-0 gizzard shad showing up in backwaters in their sampling. Tildon said these also have been found in Green River backwaters.

#### 4. Tusher Wash update –

- a. Update on concept design – McMillen is working out a conceptual draft design for the EIS analysis that includes the fish passage, downstream boat passage, and sediment sluicing structures. Kevin McAbee has been submitting comments regarding Section 7 compliance and Kevin, Tom Chart, and Reclamation have been providing input on fish passage. On September 16, McMillen discussed a good fish passage design on river left with a boat passage east of the fish passage (for downstream passage) and radial gates between passage and the bank. Radial gates (automatically operated per current design) will allow a constant 1-foot depth of water in the passage over a range of flows from <900 cfs to 6,500 cfs (the 1-foot depth is the standard Burdick recommended for adult Colorado pikeminnow and is what our other fish passages are based on). McMillen and BioMark will be discussing how to incorporate an antenna system in the design. Construction is still scheduled to begin in the fall of 2014. If any Biology Committee members would like to see the concept design packet, let Kevin know.
- b. Research to support e-barrier operation (Objective 1 of Jackson Gross proposal) – The Biology Committee previously agreed to the need to determine the electrical field required to minimize impact/injury to fish and maximize performance of the barrier. Kevin and Tom Czaplá developed questions to be considered and sent that to a small group for review; Kevin is compiling comments and will send a summary to the Biology Committee for review (probably next week) before sending to Smith-Root. Jackson Gross originally presented four objectives, with the fourth being a study in the raceway in the canal around the e-barrier to see how many fish were getting past the barrier. We've thought that could be evaluated with the antennas already in the canal; however, since we don't know how well the e-barrier will work, these antennas will be very important in determining barrier effectiveness, so we'll need to be sure the antenna system will answer that question.
- c. Green River Canal PIA update – Kevin said that both antennas are working well and detecting large numbers of fish as reported throughout the summer, confirming that we have an entrainment issue. In mid-November when the canal is shut off, we'll likely remove some electronic components for safekeeping, and then begin to analyze data. The canal company didn't divert their full water right this year due to hydrology and the damaged diversion structure. We'll look at water use, river flows, and entrainment rates, make preliminary conclusions about this season, and present that to the Biology Committee this winter. A humpback chub was detected in the canal this season. This fish was originally tagged in the upper portions of Desolation Canyon (~60 miles upstream) by Tildon. This is very interesting, since this reach of the Green River is not typical humpback chub habitat. Kevin hasn't been able to evaluate each record, but said it's common to get repeated hits on the same fish. The humpback was picked up daily or every other day for 3-5 weeks. Kevin said questions keep coming up about whether once a fish enters the canal, can it return to the river. In light of this uncertainty, Kevin recommends that he and anyone else interested make a site visit to the canal this winter (review sediment siphons, see if we want to install a PIT antenna nearby, etc.). Kevin will contact the canal owner and try to schedule it in conjunction with a Biology Committee or other appropriate meeting. Krissy, Paul, Tildon, and Dale would like to participate. Dale said Burdick had some data that show a fish entering a Grand Valley canal via a siphon. Reclamation had heard a report of debris on the antennas recently, but the antennas were clear when checked.
- d. E-barrier planning – Jana was asked to talk to Utah Division of Water Rights regarding whether we would need a water right to cover fish / sediment return flows specific to e-barrier ops; Boyd Clayton said no. The e-barrier NEPA and project planning process will be independent from NEPA and planning for the diversion rehabilitation. Reclamation continues working with Smith-Root on the e-

barrier location and the group likely will discuss this after the furlough ends. Based on other projects in the western U.S., Reclamation has some concerns about predicted success rates of the e-barrier, especially if it's placed in the raceway. Therefore, Bob Norman still supports an in-river location, but this is all still being investigated. It will be important to identify what level of entrainment reduction the Program/Service considers to be successful (e.g., is a 70% entrainment reduction adequate... what if only 50%, etc.), so we need to begin considering that. Kevin McAbee recommends revisiting Kevin Bestgen's modeling and compare it to data collected from the antennas. Kevin McAbee will include this aspect in his presentation to the Biology Committee later this winter.

5. Electrofishing course plans for 2014 – Subsequent to drawdown for dredging anticipated this October, Highline Reservoir isn't expected to refill in 2014 until the canal starts running (usually in early April). This would make boat access difficult and muddy for the electrofishing course previously planned for the last week of March, but moving the course any later would create conflicts with fieldwork. The Committee discussed possible alternative venues or if it would be possible to hold the course later in the summer, assuming a "window" between field assignments can be found. Dale has been checking on other local sites and hasn't come up with anything yet. Lake Powell has been considered, but Colorado's ability to travel there is uncertain (Harry checked, and out of state travel is still pretty unlikely) and the lake also is extremely low and access could be an issue if it continues to drop. (Lodging also is expensive, but off-season rates *might* still apply, depending on the number of attendees.) Kenney Reservoir would be a good option, but finding enough lodging in Rangely could be a problem. Dale has talked with personnel using the ETS units (with conversion of entire fleet to these, folks thought it would be good to have a course). They're finding that based on temperature and conductivity, they have to start with the maximum end of Pat's recommendations and go up from there to get the necessary fish response. Tildon agreed that the standardized ratings are probably on the low end of what's needed to catch fish, but think the class would be informative (Pat was working on calibrating his recommendations to field realities). Tildon said there are accommodations in Rangely; Harry agreed, but there might still be ice in March. (Utah can't travel to Rangely.) Tildon thinks Steinaker is too low, and ice concern would be the same or worse. Paul Badame asked about McPhee; Harry will check on this and Kenney with regard to likelihood of ice. Tildon asked about the lower part of Flaming Gorge near the dam; Pete said it has been ice-free most recent winters. Tom Chart asked about the pond at CPW in Grand Junction; Dale said it's often drained in the winter and he doesn't know if there's a boat launch. It is very small, but has been used to test boats in the past, so it might work; >Dale will check. Tildon asked about Ken's Lake in Moab, but there was almost no water in it this last winter and Paul thinks it will be less than half-full this winter. Paul asked about the river ramp near Potash that has a large eddy and the one in town where there's slow water (limited parking at this site, though). Pete thought this would be a good option. Dale will check into it. Feedback or thoughts on this should go to Dale and Dave Speas and Tom Czaplá. Meanwhile, Harry will find out if CPW possibly could send 8 biologists to an out-of-state location (especially Moab or Lake Powell) (Harry checked, and out of state travel looks unlikely). Harry asked about Navajo, but Dale said there would be ice, at least on the edges, so launching would be problematic. It also is drawn down.
6. 2014 Upper Basin Researchers meeting update – The meeting has been scheduled for January 14-15 in Grand Junction, hosted by the Program Director's office. Tom Czaplá said the Program Director's office is working on room reservations; Dale said they'd help as they're able. >Tom Czaplá will send out a request for abstracts soon. A Biology Committee meeting will be held on January 16.
7. Bonytail – The Committee discussed ~200K excess bonytail at Wahweap that are too small to tag (~180K ~65 mm and ~20K ~120mm) that Zane needs to get out of the hatchery within four weeks so that he's not holding fish at too high a density. Recently, the Program has had a policy not to release untagged fish

(given success with razorback), but we might consider stocking these fish in light of the fact that we get so few bonytail recaptures, and we're not really concerned about confusing these fish with natural reproduction in the case of bonytail. If we had a pond where they could be overwintered, harvested, tagged and released, that would be good. Baeser might work (would have to be pumped full of water to about 3-4 feet deep, and Tildon would have to check on that feasibility); however, The Program Director's office agreed a streamside pond / floodplain would be a preferable stocking location, but recommended a habitat that has a high likelihood of connecting in the spring of 2014 negating the need to harvest because those costs are not covered in the work plan. . Tildon said they do have a scope of work that could cover pumping costs at Baeser, but was unsure if they could cover salvage costs. The Committee discussed other ponds; >Dale will check on whether any of their razorback ponds (GJ Pipe, Morse, and maybe Audubon) would work. The fish wouldn't grow much between now and spring (i.e., probably would not be large enough to PIT tag next spring). Moab Slough won't work at this point due to access issues. The Program Director's office thought it would be best if we can find a pond that will connect naturally in the spring. If that's not possible, then the group agreed to stock the fish in the river as far upstream as possible (unless someone in the lower basin wants them). None of the Biology Committee members in attendance objected to stocking these fish, but we'll need to check with Dave Speas and Melissa Trammell.

8. White River Management Plan meetings – The Recovery Program is hosting public meetings in Vernal, UT; Craig, CO; and Rangely, CO next Tuesday, Wednesday, and Thursday nights. The Recovery Program will be engaging stakeholders in discussions concerning an endangered fish recovery management plan for the White River basin. This approach has been used by the Recovery Program in other basins to ensure that current and future water needs are met for people and endangered fish. The White River management plan will:

- identify existing and some level of future water depletions;
- develop current hydrology and projected depletions to identify the effects of past and future water development on endangered fish habitat;
- identify the role of the White River in recovery of endangered fish;
- identify flow recommendations for endangered fish habitat in the White River; and
- identify a broad range of recovery actions to be carried out by the Recovery Program to support a recovered endangered fish population in the White River.

A federal-state cooperative (or similar) agreement to implement the resulting management plan will constitute a “federal action” that will become the basis for Section 7 consultation under the Endangered Species Act (ESA). This consultation is expected to culminate in a White River “Programmatic Biological Opinion” (PBO), providing additional certainty for ESA compliance by existing and some amount of future water projects in the White River basin.

9. Recovery Team update – Tom Czapla said most of the Colorado Pikeminnow Recovery Team met via webinar yesterday to discuss threats by river (still need more Green, Yampa and Gunnison information), and will have another webinar at the end of the month. Tom Czapla said invitations have not yet been made for the other species recovery teams

10. Review reports due list – The group updated this list (attached in e-mail with this draft meeting summary)

11. Review previous meeting assignments – See Attachment 1.

12. Schedule next meeting and outline agenda – January 16, 8 a.m. – 2 p.m. in Grand Junction, after the researchers meeting.

13. Consent Item: Review and approve July 10, 2013, Biology Committee meeting summary – No comments were received on the draft summary Angela Kantola sent to the fws-coloriver listserv by Jerry Wilhite on July 19, 2013; the summary was approved as written.

***ADJOURN: 2:50 p.m.***

## Attachment 1: Assignments

(Asterisked items were on the meeting agenda; items preceded by a “-“ can be deleted after this summary)

Note: 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: 1/26/12: **Tom Czapl**, **Dave Speas** and **Kevin McAbee** will draft a Tusher Wash mortality study and literature review RFP (or similar) for review by folks who would not be submitting a proposal. 7/12/12: *no proposals were submitted in response to the RFP, >the ad hoc committee will work on completing the literature search portion of the mortality study (which will aid the discussion in the biological opinion). Need to assign lead.*
  - When the final engineering designs are provided (**Kevin McAbee** will send the Biology Committee any plans he receives), **key Committee members** should make another site visit (10/10/13: Kevin McAbee arranging for this winter).
  - The **Biology Committee** will review Jackson Gross’s proposed scope of work (to evaluate potential e-barrier impacts) (done). **Tom Czapl** will work with **Kevin McAbee** and **Dave Speas** (and keep Tom Pitts in the loop) on developing a recommendation for how to accomplish Objective 1 of the proposal (determine the minimum electric gradients needed to prevent downstream passage while minimizing the risk of injury). 10/10: Kevin will send a list of questions to be considered in this study to the Biology Committee shortly.
  - - **Jana Mohrman** will work with **Kevin McAbee** and **Utah** to determine if any of the Tusher Wash components will require a water right. Releases from Flaming Gorge could be designated for this purpose, but we would need to ask Utah if they would administer the water for that purpose. Tom Chart recommended that this be part of our “punch list” we discuss with the **Green River group**. 7/25/13: *Marc Stilson, UDWR water rights specialist thought it could be treated as a canal flushing maintenance use of water or Utah would have to develop an instream flow and be the water right holder. Marc and Boyd Clayton discussed and determined the project would not need a water right because it will act as an operational use to assist in canal cleaning.*
2. & Revise the Integrated Stocking Plan (ISP) and related issues. **Tom Czapl** is convening a group to revise the ISP.
  - 9/27/12: *Revised draft ISP sent to ad hoc group by 9/27/12; comments due by the end of October. 5/2/13: Comments received from Zelasko, Wilson and Cavalli; 7/10/13: Czapl will incorporate comments and try to have to Biology Committee by end of July 2013. 9/27/13: Czapl sent revised draft to Committee for review July 31; Cavalli comments submitted September 26, McAbee September 27; 10/10/13 Tom Czapl is incorporating those comments and also will send the comments to the Biology Committee).*

### Humpback Chub (population estimates)

- \*3/7/13: **Program Director’s office** will check with Kevin Bestgen on a revised due date for the humpback chub combined population estimate from Gary White. 3/14/13: *LFL will turn this around as quickly as possible after they receive the most recent data from the Service (scheduled for 3/19/13). 3/19/13: The Program Director’s office will discuss with Kevin Bestgen what it would take to use the 131 analysis of Westwater/Black Rocks to identify clues as to early life history dynamics and recruitment failure. >Dale Ryden will provide revised due date. 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. Biology Committee will discuss later after Kevin, Travis et. al recommends how to proceed with reporting (after Travis completes this year's fieldwork).

&Humpback Chub (broodstock development / genetics)

- 3/6/12: **Tom Czapl**a will remind the humpback chub genetics ad hoc group to submit comments (7/13/12 comments still pending). 1/17/13: Some comments received and incorporated; comments still pending from **Trammell**.
  - 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. 5/2/13: **Program Director's Office** will provide outline to Biology Committee in advance of the July 10, 2013, meeting. 7/10/13: **PDO** will forward the document that a smaller group has worked on and the Biology Committee will discuss in October 2013. 10/10/13: **PDO** will send out and put it on the next meeting agenda.
  - 10/16/12: Age-0 Gila from Westwater were going to be brought to the Horsethief Canyon ponds this fall, but river conditions won't allow safe transport until spring (timing will depend on hydrology). Tissue samples from those humpback and fin clips collected from humpback in the field in 2012 will be analyzed by Wade Wilson to provide information needed to determine if we can use local humpback chub for broodstock development, if needed, or if we will need to incorporate fish from the backup broodstock at Dexter NFH (from the Grand Canyon). Fish will be brought in fall 2013. 10/10/13: Dale said they brought ~40 fish they caught into ponds, but have less than a dozen at this point. They will try to build these numbers in future years if the Biology Committee supports that.
3. & Flaming Gorge/Green R burbot: **Melissa Trammell and Pat Martinez and Krissy Wilson and Jerry Wilhite** will work on a Flaming Gorge burbot risk assessment. 10/16/12: They held a conference call August 30 and October 15; will have another call November 20, and Melissa will present something to the nonnative fish workshop (done). UDWR is funding two studies (food web and early life history). Late this season, Tildon tried baited hoop nets and other methods in the Green River and did not capture burbot. 12/7/12: **Melissa** will provide a draft to the ad hoc committee members in early February. 1/29/13: **Melissa** asked if **UDWR** could include larval burbot sampling near the spillway in their current work in Flaming Gorge; **Krissy** thought they could. Tildon asked and **Krissy** said they're not doing any sampling in the tailrace for burbot. **Melissa** will provide a draft assessment to the Committee by the end of July 2013.
4. & Nonnative fish management follow-up:
- **Melissa Trammell** offered to work with **Travis** in summer 2013 and report other nonnative fish data (e.g. gizzard shad, nonnative fish captured during Colorado pikeminnow estimates to the Committee each year. The **Program Director's Office (Pat)** will provide specific protocol for handling nonnative fish during other work like Colorado pikeminnow estimates (i.e., which species to target, measure, take otoliths from, etc.) and reporting the data (5/2/13: done; main question was when to take otoliths and **Pat** has informed **PIs** to take otoliths from new species or new occurrences of established species in new areas). Walleye, pike, gizzard shad, and other anomalous fish all should be removed. The **Committee** will review the report **Melissa** provides in working with **Travis** and then discuss what further analysis may be needed.
  - In 2013, population estimates for smallmouth bass will only occur in Project 125. The **Committee** will reconsider resuming the smallmouth bass population estimates throughout the current Yampa River population estimate reaches in 2014, based on an analysis from **André**.

- The **Committee** agreed to suspend all mark / release of northern pike Program-wide in 2013. They made a **firm agreement** to revisit this issue (northern pike population estimates) when results of the northern pike synthesis are available.
  - **Harry Crockett** will check to see if Colorado's Parks folks might be interested in administering a harvest incentive program. 7/10/13: *response pending*. 10/10/13: *Harry said CPW is open to considering this in some situations and will discuss further with the Program Director's office (Kevin McAbee, Harry, and Vernal CRFP to discuss and consider bringing proposal on this and a potential White River incentive program to the nonnative fish workshop)*.
  - **98c & Upper Yampa: Potential PIs** and the Biology Committee will discuss possibilities for 2014 and make a recommendation for consideration during the 2013 nonnative fish workshop. **Colorado Parks and Wildlife** will review landowner permission for access. Meanwhile, **Harry** also will see if by any chance Billy could add an electrofishing pass from Steamboat to Hayden to the 98c work they've been funding (in 2013). 5/2/13: *The 2-3 passes in the upper third of 98c that were done last year will be repeated this year, but Harry doesn't know yet if they'll have landowner permission to work in the remainder of the reach. Three to four times as many pike were collected in 2004-2005 in the upper third of the reach where CPW knows they can sample, however. 7/10/13 – Harry said they worked the upper reach, but won't be able to access the lower reach this year.*
  - The **Program Director's office and Vernal-CRFP** will work to develop a proposal for a smallmouth bass harvest incentive program on the White River. *Pending; see above.*
  - Harry Crockett will discuss tube net and rigid weir options for screening the Highline Lake outlet works in future test operation with the engineer.
5. Database Management: The **Program Director's office** will work to define the overall problem/need to improve data management in light of the increased PIT antenna data, draft an overall schedule, and bring that back to the Committee in advance of the December meeting for discussion. 3/8/13: *PD's office provided draft prior to the March Biology Committee meeting. Tom Czaplá will work with Scott Durst, Travis Francis, and Kevin Bestgen, to develop a problem statement. 5/2/13: Conference call scheduled for May 24. Dave Speas will talk to Mark McKinstry about collaborating with this group to develop a scope of work. 10/10/13: Travis Francis, Koreen Zelasko, Scott Durst, Tom Czaplá and Dave Speas have held -3 conference calls developed list of requirements. They're reviewing a draft RFP that will go to the Biology Committee, perhaps by the end of next week.*
6. - Protocol for documenting fish captures: **Tom Czaplá** will provide protocol for the scope of work format (or other appropriate venue) for how Program PIs will consistently document significant fish captures with photos, etc. (E.g., new nonnative species, information from fish kills after fires, etc.) Krissy suggested the protocol also should include checking for ripeness and noting if fish are tuberculated. 12/7/12: *The PDs office will provide a due date. The Committee discussed how to document in the database things like fish kills, oil spills, etc. Access software allows linking to all kinds of information (including photographs). Information on mortalities may include things like PIT tags. Our existing database can clearly handle information on mortalities; we need to emphasize that these data need to be collected and submitted. 5/2/13: the PD's office expects much of this type of data to be captured in annual reports. 5/2/13: Dale suggested adding an item to the annual report format to capture "Any additional observations." >Angela Kantola will add this to the annual report format beginning with FY13 reports (including direction on what data should be reported) (done). Tom Chart suggested that population estimate annual reports also incorporate more of these kinds of observations from the individual researchers. **The PD's office** will post a heads up about this to the listserver (done).*
7. **The Program Director's office** will work with States to compile a list of Lake Management Plans.

*Pending.—McAbee*

8. **The PD's office** will work with **Harry Crockett, Krissy Wilson, Dale Ryden, and Pete Cavalli** will review the otolith analysis situation and make recommendations for FY14-15. *Deferred pending available funding.*
9. **Dave Speas** will get a revised due date for the Maybell report. *7/10/13: Dave still working to get revised due date. 9/27/13: Draft report submitted to PD 9/5; revisions sent to PI 9/9; next to peer review. 10/10/13: Waiting on Patty to be able to review after furlough*
10. - **Tildon Jones** will ask **Aaron Webber** if he has any Baerer summaries he can provide to the Biology Committee at this point. *10/10/13: Tildon provided this earlier this week (see Attachment 3).*
11. After the nonnative fish workshop, the **Program Director's office** will recommend boilerplate language (including identifying reduction targets) to be used across applicable nonnative fish management scopes of work.
12. **Kevin Bestgen** and **Dale Ryden** will work up estimated costs for addressing additional razorback data being collected (need for additional data analysis on both Green and Colorado rivers). *Dale said Kevin wants to wait until after the end of the field season to ascertain the number of records to be analyzed (probably ~150,000 fish records). This may be a fairly involved effort.*
13. Electrofishing course – See meeting summary above for various assignments related to finding appropriate venue for a March 2014 (or later) electrofishing course.
14. **Tom Czapl**a will send out a request for abstracts for the January 14-15, 2014 researchers meeting in Grand Junction.
15. **Dale Ryden** will check on whether any of their razorback ponds (GJ Pipe, Morse, and maybe Audubon) would work for stocking untagged bonytail.

## Attachment 2

### Wyoming Game and Fish Department 3 Species Summary Little Snake River northern pike surveys Bobby Compton

Confirming anecdotal reports of northern pike (NOP) presence in the Little Snake River, Wyoming, seven adults were captured by WGFD personnel in September, 2012. For 2013, the goal of the survey work was to again document (and remove) NOP; more specifically we wanted to better understand adult distribution and determine if reproduction occurred in 2013. To determine if reproduction occurred, we sampled for juvenile (Age 0) in the autumn when river flows were lower (10-30cfs) and juveniles were large enough to be electrofished. We conducted three sampling trips in 2013 – one during peak run-off (May 13-17), and two during autumn low-flow conditions (September 4 and September 17-19). For the May outing, trammel and fyke nets were set in backwater, slough, and tributary confluence habitats. We assumed that adult NOP would be moving during this period, seeking out slower-moving waters for refuge or spawning. Three adults were captured in a slough just downstream (<1 mile) of Baggs, Wyoming. All three NOP were males and expressed gametes (555-801mm). These fish were euthanized and their otoliths were removed for future natal origin microchemistry analysis. During the September outings, a combination of seining, trammel netting, and electrofishing (backpack, cataraft, and boat) was used to target juvenile and adult NOP. Six sites were visited (starting downstream of Baggs where the Little Snake River leaves Wyoming for the first time and ending upstream near the town of Slater, Colorado) and main-channel, slough, and below-diversion pool habitats were targeted. Personnel from the Colorado State University Larval Fish Laboratory assisted with the autumn work. Three NOP pike were captured below the Baggs Diversion (about one mile upstream of Baggs; this diversion was removed in September during a river-channel restoration project). These fish ranged from 644-681mm and were comprised of one male and two females with undeveloped eggs; otoliths were kept from these fish. No juveniles were observed during the autumn trips. River discharge during autumn sampling was higher than normal due to significant rain storms, but cataraft shocking was still utilized and sampling efficiency was average. Although we did not sample large segments of the river, from the sites we visited and using professional judgment, we feel that NOP distribution at this time is not widespread nor is there a high abundance of juveniles in the system. We will continue to sample in the future at a similar level of effort and hope to get otoliths analyzed to determine if NOP are born in the Little Snake River, Wyoming, or are moving into Wyoming from the Yampa River, Colorado. In addition to the sampling, WGFD has modified the fishing regulations (starting in 2014) in the Little Snake River and NOP will be classified as an invasive species. There will be no limits on NOP and anglers must kill NOP if caught.

Attachment 3

From: **Jones, Tildon** <tildon\_jones@fws.gov>  
Date: Wed, Oct 2, 2013 at 12:26 PM  
Subject: BC assignment #10: Baeser summary  
To: Biology Committee

At the last BC meeting, I was assigned the task of finding any post-project summary of the Baeser SOW. Aaron Webber provided the following, and has more information if you want specifics.

From Aaron:

In 2009 and 2010 we stocked 1,515 razorback sucker from the Baeser Bend wetland to the Green River. I have been keeping track of recaptures of those fish, and from the data available from the Recovery Program from 2010-2012, I have all recaptures included in this number, and for the 2013 season, I have all of USFWS projects but not UDWR captures (this would include 2013 NNF projects and pikeminnow estimate passes). We have recaptured 86 (5.7%) of these fish at least once, and 8 twice. I have detected 18 of these fish at Razorback Bar with the PIT tag antennas.

Bruce Haines and I have been working on a paper highlighting various lessons learned at Baeser Bend that include growth, survival and potential factors influencing mortality, and this manuscript is being considered by the Southwestern Naturalist.