Upper Colorado River Endangered Fish Recovery Program

Dated: February 19, 2015

Draft Biology Committee Meeting Summary
Moab, Utah, January 15, 2015

PARTICIPANTS
Biology Committee: Dave Speas, Melissa Trammell, Jerry Wilhite, Harry Crockett, Dale Ryden, Krissy Wilson, and Pete Cavalli. Via phone: Brandon Albrecht, and Tom Pitts.
Others: Tom Chart, Paul Badame, Kevin McAbee, Tom Czapla, Angela Kantola, Mark McKinstry, Dave Schnoor, Peter MacKinnon, Katie Creighton, Mike Mills, Koreen Zelasko, Kevin Bestgen, Jacob Mazzone, Tom Brandt, Bob Norman, Brent Uilenberg, Brian Hines, Chris Michaud, Tildon Jones, Chris Cheek, Jenny Ward, Julie Howard, Steve Platania, Jackson Gross, and Nathan Cathcart, Matt Breen. Via phone: Ron Kegerries and Jana Mohrman.

CONVENE: 8:00 a.m.

1. Review/modify agenda – The agenda was modified as it appears below.

2. Report review, Project 161b, "Abundance and Population Dynamics of Invasive Northern Pike *Esox lucius*, Yampa River, Colorado, 2004–2010" – Koreen Zelasko sent the final draft report to the Committee on December 20. All commenters had indicated to "accept with minor revisions" prior to the draft final report and all felt their comments were addressed. Koreen received some final editorial comments from Kevin McAbee which she will incorporate. The Committee approved and >Koreen will finalize the report with those comments incorporated and the >Program Director's office will post to the website.

3. Fish screening

   a. Hogback entrainment study results – Mark McKinstry outlined history and subsequent construction of the weir wall at the Hogback Diversion on the San Juan River. 2004-2005 sampling revealed a large number of Colorado pikeminnow (201) entrained in the canal. The weir wall is designed to entrain only the top few inches of water into the canal and to deflect fish in the lower portions of the water column into a return channel to the river. As far as we know, this concept has not been previously built and no empirical evidence on its effectiveness exists. Therefore, the San Juan Program initiated an in-situ study to determine effectiveness. Based on the initial 5-day test with hatchery reared fish this past November, it seems to be working pretty well (see preliminary results in Attachment 2), though they will know more by tracking antenna detections over a full year of operation. A large portion of fish (>50%) released for the test were undetected, likely a result of swimming upstream out of the study area or remaining in the release area instead of interacting with the weir. Only 161 of 803 fish followed true test results by being entrained or returned to the river. Test results indicate that 11% of fish with a known interaction with the weir wall were entrained, while 89% used the fish return. Dale noted that we won't really be able to judge effectiveness of the weir wall until we evaluate total entrainment over a year. Brent Uilenberg said he thought the results of the test were quite good, though he would support evaluating a full year of operation before making a final decision to build a weir wall at Tusher. Mark noted that considerable sediment drops out on the fish passage side of the weir, almost filling it at times, but the water diversion can be turned off and sluiced out within 2-3 hours. Pete Cavalli noted that as the sediment builds, fish are push closer to the top of the weir wall. Brent Uilenberg said a consultant meets with the operators weekly to ensure the best possible operation. Mark noted that one feature of the facility is that all the physical features (shed for electronics, casing on gate mechanisms) are virtually bullet-proof.

   b. Tusher Wash fish exclusion –Tom Chart asked if the Tusher configuration would be similar to Hogback; Bob Norman said the water depth might be somewhat less but otherwise it would be very similar. Tildon

said that the Green River Canal Company is very excited about weir wall concept because it also would solve a number of their operational problems. Brent agreed, saying the canal company is very willing to work with us on this. Kevin outlined three decisions that will need to be made: 1) by the Program – how and what to build; 2) by the Canal company – what they'll agree to; and 3) by the Service – is this adequate prevention of entrainment (take). Brent Uilenberg said entrainment at Tusher is unlikely to be zero, but it will be better than with screens (which are never operated 100% of the time – e.g., the Grand Valley fish screens were operated 32-89% of the time from 2009-2013) and much better than the status quo. Bob Norman said if the Committee approves Reclamation designing a weir wall in 2015 (~$200K), we will be a year ahead if Hogback proves acceptable in year-round operation over the next year. The risk in doing so is that if Hogback doesn't prove acceptable, then we'll have to go back to the drawing board and have spent money designing a structure we won't build. **The Committee approved moving ahead with the preliminary design of the weir wall (the design can be made to accommodate a possible electrified wall), with a final decision pending Hogback results.** The design will include PIT antennas for evaluation. >Brent and Bob will get back to the Program Director's office regarding design input from biologists.

Tildon noted some simple ways we can determine the fate of fish going into the canal (portable hoop-style antennas on the sluice gates during the 1-2 weeks the sluices are operated while canal salvage is being performed). Bob Norman said he thinks the sluices actually are operated off and on throughout the irrigation season. Tildon said there may be ways to make the sluices more fish-friendly (Krissy endorsed this Kevin Bestgen pointed out that Tusher is downstream of major razorback and pikeminnow production areas; therefore, if the weir wall could be designed to keep some of the larval fish in the bypass, it would really add to the benefit of the weir wall. Larval fish try to avoid current. Kevin said we could mark larvae with tetracycline and see how they fare in an in-situ study (this could be studied at Hogback, although the Upper Basin Program would need to fund it.) Biology Committee members and others thought the suggested larval drift investigations could provide useful information and questioned if marking larvae would be necessary. Brandon Albrecht asked about design as it relates to gathering monitoring data from the PIT arrays. Tom Chart said PIT detection will definitely be part of the design.

4. Nonnative fish

   a. Review of potential changes to 2015 work – Kevin McAbee referenced recommendations presented at the nonnative fish workshop. A number of these recommendations might be addressed by using the salary difference between an exiting biologist and his replacement at the Vernal FWS office to fund two additional seasonal employees for six months. These technicians could address additional workloads requested under 2014 annual reports, such as Yampa River northern pike netting in April, larval trigger light trapping in May, Yampa River smallmouth bass surge in June-July, walleye removal in Grand Valley in Sept-Oct, and Tusher Canal salvage in November). Tildon is working out the details with other PIs, but believes they can make it work this year. The Committee endorsed this approach (including increasing the Yampa backwater netting). Harry said CPW hasn't filled behind Kyle Battige yet and won't be able to fully perform 98a, as written. He explained they could likely perform the enhanced backwater netting effort and a full week of active pike removal sampling, but that they probably will then have to suspend removal passes until the smallmouth bass surge. Specifically Harry said CPW can commit to: Yampa River smallmouth bass surge, 2 weeks of early northern pike removal electrofishing, and the full backwater netting effort (also using the FWS assistance mentioned above). Harry said Kyle estimates this would catch at least 60% of bass and pike typically caught, and potentially more (currently unclear how this would affect the SOW budget). >Harry will identify personnel and equipment needs to fill any gaps and share that with the Committee, should we decide that's necessary. John Hawkins will do the 98c reach this year that was postponed last year. Harry said CPW doesn't have enough personnel to start removing northern pike from Stagecoach this year (other than just as part of standard sampling), because Catamount removal is the higher priority. It will take a <u>major</u> removal

effort to have a biological impact at Stagecoach. Tom Chart said he thinks it's more important that we've opened the door to removal than that we begin it this year. Harry hopes to bring CPW's approval of removal to the Program in writing, then someone else can prepare a SOW to conduct removal (e.g., as part of FY 16-17 work plan).

Another recommendation was for Hawkins' crew to increase effort for smallmouth bass removal during the spawning period (e.g., e-seining). Tildon offered to double his crew and potentially add two people to Hawkins' crew as part of the salary savings identified above (more than doubling the effort from the Vernal office). Harry said CPW anticipates having adequate personnel by the time of the bass surge.

Kevin McAbee suggested guidance is needed from the Committee regarding whether we should shift efforts (e.g., from humpback chub population estimates) toward walleye removal. Dave Speas expressed concern about deferring monitoring. Tom Chart said he thinks we've got to put additional effort toward walleye control somehow, though he, too, hates to defer monitoring. Matt Breen said that if we know we're going to have higher flows, some of his crews' late season bass removal passes can go to early season walleye removal without affecting the budget. Dale said both he and Katie's offices are willing to forego Black Rocks and Westwater humpback chub population estimates, but they should be postponed together, and for no more than one or two years at the most. Dave asked if there would be any way to deploy submersible antennas to help get some humpback chub data; Dale said they'd have to investigate that. >Dave Speas will look into getting/transferring equipment. Jerry asked who would analyze the submersible antenna data (likely the current PIs, but will require additional attention to sampling design and analysis). Katie said that if Westwater were postponed one year, it would work well with their long-term planning, with their office's Desolation HBC estimate schedule. Dale said the same would be true (for one cycle) between their Black Rocks and pikeminnow estimate schedules. If deferring the estimates one year helps our population estimates overall, the Committee endorsed this idea (with the clear understanding that it's only a one-year solution for walleye control). The Committee also thought it would be good if submersible antennas could be deployed. >Dale's and Katie's offices will provide proposals outlining how all this would work. Dale said he thinks his office can do three full walleye removal passes from Loma boat launch to Potash, plus a few passes at critical hotspots. Matt said that since they're not doing Colorado pikeminnow work this year, they could do an extra walleye pass at ~$10K plus equipment repair costs. The group discussed sonic tags in the lower Colorado River (would be detected by existing readers). Questions include whether walleye are coming out of Lake Powell and if they are spawning. The Lake Powell crew would already be in the field. Additional sonic tags would be a very minimal cost and could answer the question whether the fish are moving up into the river past the SURs. If more information is needed, combination radio/sonic tags might be required. However, the Committee did not propose implementing this effort and instead believes that this year, it makes most sense to just look for aggregations while the Lake Powell crews are sampling.

b. Discussion of resuming nonnative fish marking in certain reaches in 2015 – Kevin McAbee asked how the Committee wants to proceed. Dave asked if we can get quantitative information regarding trade-offs from simulations using André's model. Melissa said tagging informs our progress towards "getting to zero," but she would prefer to simply focus on getting to zero. Jerry endorsed Dave's question. Kevin Bestgen said André's simulations suggested that tagging passes would have little impact on long-term success. Julie noted one suggestion was to do marking passes on only selected reaches. John will mark fish in the 98c reach. Tildon has suggested a marking pass in Echo-Split since there's no flow constraint on sampling there, but needs to know if the timing should coincide with Hawkins' marking passes (Kevin Bestgen said he didn't think there was a need to have them coincide, but that passes over three months in Echo-Split would violate assumptions for abundance estimates). Jerry suggested it would help if the Committee had a proposal identifying proposed sites, frequency, and expected impact of marking passes. >Kevin McAbee will work with the PIs to prepare that. Kevin Bestgen asked if the resulting information is needed in conversations about managing these species. Melissa said that since we have

conducted marking passes and developed baseline assessment models, perhaps we can use removal numbers to inform simulations. Tom Chart said that at this point, he doesn't think this is the most important data we need in conversations about management with Congressional representatives; however, Harry noted that with anglers, the primary question is "will you ever be finished"? Melissa said she thinks we can certainly say (without additional tagging) that we expect it will take at least many years of removal efforts to bring nonnative fish under control.

c. Discussion of novel piscicide development – At the Nonnative Fish Workshop, Robert Clarkson (USBR) presented on a novel piscicide development underway as part of the Gila River Basin Recovery Program. This piscicide could potential remove nonnative species without harming native species. Dave Speas said Rob Clarkson indicated the Program might want to contribute to this work if we wanted to see them include certain species (both native and nonnative) in tests of the novel piscicide Supaverm. For example, our Program may want to add Colorado pikeminnow, razorback sucker, northern pike, and others. Dave Speas said he will be on the lookout for end of year Reclamation funds for this. Species currently scheduled for testing are shown below. >Dave will talk to Rob some more about what funds he might be looking for. On a related topic, Tom Czapla suggested it might be worth looking into the ammonia treatment discussed at the Researchers Meeting (e.g., Baeser, LaFarge, or others for treatment perhaps under the ice); >Paul Badame, Kevin McAbee and Harry Crockett will look into whether Utah and Colorado might have regulations similar to the one in Arizona David Ward mentioned that allows temporary use of ammonia as a piscicide. Melissa suggested looking into this for Escalante, also.

Natives	Nonnatives
Gila topminnow (*Poeciliopsis occidentalis*)(E)	Green sunfish (*Lepomis cyanellus*)
Longfin dace (*Agosia chrysogaster*)	Smallmouth bass (*Micropterus dolomieu*)
Loach minnow (*Tiaroga cobitis*)(E)	Red shiner (*Cyprinella lutrensis*)
Roundtail chub (*Gila robusta*)(C)	Yellow bullhead (*Ameiurus natalis*)
Speckled dace (*Rhinichthys osculus*)	Channel catfish (*Ictalurus punctatus*)
Spikedace (*Meda fulgida*)(E)	Flathead catfish (*Pylodictis olivaris*)
*Bluehead sucker (*Pantosteus discobolus*)	Mosquitofish (*Gambusia affinis*)

5. Researchers Meeting follow-up

a. PIT tag workshop – Krissy said she thinks everyone agrees we should tap into the use of submersible antennas. Dave suggested the Committee will need to further discuss data analysis. Dave said Peter MacKinnon mentioned that Mary Conner is interested in assisting with analysis. Dave said the funding source he and Mark had used to purchase PIT equipment has disappeared. Dale Ryden mentioned the importance of having the three species data in the database so field personnel can access those tag numbers (both Colorado and Utah submit their 3 species data to Travis). Dave said this is the kind of thing that will be discussed in the upcoming database workshops, but the plan is to include three species data. Committee members were very impressed with Kirsten Holfelder's (Colorado Natural Heritage Program) presentation on the database. Melissa noted that the last presentation brought up the potential need to move toward automating data entry in the field wherever possible; the Committee agreed. >Krissy will find out if PIT tag data from the San Rafael and Price rivers are being submitted to Travis. Dale said we will need to address the issue of fish with old 10-digit 400 kHz tags because these tags must be read by older technology scanners (aka: cheese blocks) which will no longer be supported (repaired, etc.) by BioMark beginning later this year. Strategies will include getting old readers from the hatcheries now, getting current ones

serviced now (Julie said most theirs most frequently need battery and cord replacement), buying any existing inventory, etc., so that all field crews doing population monitoring will have these readers for as many years into the future as possible. We also need to be sure no one is still placing 400kHz tags in fish.

6. Peak Flow Technical Supplement (Chart, 5 min) – The draft "Strategy To Evaluate Peak Flow Requirements for Sediment Transport and Habitat Maintenance in the Upper Colorado River Basin: A Technical Supplement to the Green River and Aspinall Study Plans" was sent to the Biology and Water Acquisition committees on November 30, with comments due to Jana Mohrman, Kirk LaGory, and Tom Chart by January 16. Melissa asked for an additional week of review time and Tom Chart agreed (new deadline is January 23). Discussions to approve the report will be scheduled with both committees after the review period. Melissa noted that Jack Schmidt submitted some extensive comments and shared those with some folks; Melissa and Dave said they think those comments need to be addressed. Tom Chart will distribute the comments submitted by Tom Pitts and Jack Schmidt to both committees *(done)*.

7. Colorado Pikeminnow Recovery Plan revision update – Tom Czapla said they anticipate having a discussion with the Management Committee on February 3 about a process for Recovery Program review. The Service and Recovery Team are providing comments by the end of January to Tom Czapla and Seth Willey.

8. Discussion of Program policy on capitalizing common names of fishes – Angela Kantola said a number of spirited discussions have occurred among Recovery Program participants since the AFS/AHIS decision to capitalize English common names of fishes. The Program has received some technical reports and related documents with common names capitalized and others with common names not capitalized. The 2013 AFS style guidelines requiring that common names be capitalized conflict with certain other policies and style conventions. Therefore, it seems prudent to establish Program policy on this matter.

   U.S. Fish and Wildlife Service media and professional publication style guides say not to capitalize common names, the Program's State partners don't capitalize in their public materials, and general English style conventions are not to capitalize. Therefore, the Recovery Program will not capitalize common names of fishes in its general publications (e.g., meeting agendas and summaries, Recovery Action Plan materials, sufficient progress memos, or outreach materials such as newsletters, briefing book, news releases, social media posts, etc.). However, we need to establish policy regarding capitalizing common names in technical documents such as final reports, scopes of work, and annual reports, and that is a matter for Biology Committee discussion.

   Angela said she contacted six Program participants associated with the Biology Committee, explained why the Program won't capitalize common names in general publications, and asked if they thought we should: 1) capitalize or not capitalize common names in Recovery Program technical reports; and 2) capitalize or not capitalize common names in annual reports and scopes of work. Their responses were as follows:

	Cap	**No cap**	**Author choice**
Tech reports	3	2	1
SOWs & ARs	2	4	

   Opinions on this matter vary widely among Program participants (and, in fact, within the Program Director's office). Advocates for capitalizing common names cite the reasoning from AFS/ASIH: "The decision to capitalize common names was made to better facilitate communication, particularly to a lay audience. For example, clarifying adjectives vs. common names. In the sentence, "I caught a spotted gar.",

is it referring to one of many species of gar with spots, or a Lepisosteus oculatus (Spotted Gar)?" Advocates for capitalization also argue that doing so is consistent with professional guidelines (AFS) and thus helps to promote professional publication of Program reports.

Conversely, no-caps advocates argue that capital letters interrupt the flow of the text, making it seem cluttered and more difficult to read (each capital letter being like a little hill that the eye has to climb). For rare ambiguous common names like "spotted gar," they point out that ambiguity can be resolved using the current convention of including the species scientific name with the first reference rather than insisting that all common names be capitalized. No-caps advocates also argue that the AFS/ASIH guidelines ignore the advice of language scholars, obscure a true proper noun like the "Colorado" in Colorado pikeminnow, and create inconsistency between old and new documents. Finally, they note that the capitalization requirement creates confusion and inconsistency between references to groups of fishes versus specific species. An author might be required to use what would look to a lay person like "common fish names" -- referring to bass, catfish, sunfish, salmonids, etc. -- which would not be capitalized, while using Largemouth Bass or Channel Catfish [now capitalized] in an immediately adjacent sentence.

Given all of the above, the Program Director's office submitted draft Program policy that species' common names would not be capitalized in general publications, annual reports, or scopes of work, but it would be authors' discretion to capitalize or not in technical reports. The Committee discussed the matter. The Program doesn't want to do anything that would discourage authors publishing their results, but several people who write technical reports and subsequently submit their work for publication said a fair bit of revision is always required since each publication has its own specific requirements. In light of this and in the interest of consistency, the Biology Committee decided that the Program will not capitalize fishes' common names at all:

- Common names will not be capitalized in general publications (e.g., meeting agendas and summaries, Recovery Action Plan materials, sufficient progress memos, or outreach materials such as newsletters, briefing book, news releases, social media posts, etc.).
- Common names will not be capitalized in annual reports, scopes of work, or technical reports.

Angela Kantola will clarify this in technical report instructions *(done)*.

9. Elect 2015 Biology Committee vice-chair.

BC chair rotation through time

1998-1999	BOR	Larry Crist
1999-2000	FWS	Frank Pfeifer
2000-2001	WAPA	Art Roybal
2001-2002	WY	Paul Dey
2002-2003	BOR	Tom Chart
2003-2004	Utah	Kevin Christopherson
2004-2005	NPS	Melissa Trammell
2005	CDOW	Tom Nesler (1/2)
2005-2006	BOR	Dave Speas (1.5)
2006-2007	WY	Kevin Gelwicks
2007-2008	Utah	Krissy Wilson
2009	FWS	Dave Irving
2010	NPS	Melissa Trammell
2011	NPS	Melissa Trammell
2012	CPW	Harry Crockett
2013	WAPA	Jerry Wilhite

2014	BOR	Dave Speas
2015	UDWR	Krissy Wilson

Pete Cavalli said Wyoming is now willing to allow him to serve as chair; the Committee elected him as vice-chair for 2015 and he will become chair in 2016. The Service representative likely will be the vice-chair in 2016, chair in 2017.

10. Review previous meeting assignments – See Attachment 1.

11. Review reports due list – Angela Kantola will send the updated list to the Committee *(done)*.

12. Outline agenda for March 3 (convene 8:30 a.m.) – 4 (adjourn by noon) meeting (Grand Junction, Colorado, Clarion) (All, 5 min) – Major agenda item will be review and discussion of RIPRAP revisions and assessment and draft FY16-17 Program Guidance. Part 3 of the 3-part smallmouth bass report should be on the agenda for final review. Sherm Hebein will sit in for Harry Crockett.

13. Consent item: Review and approve October 27, 2014, Biology Committee webinar summary – Comments were received from Pete Cavalli and a track changes revised draft was sent to the Biology Committee with this agenda. Angela Kantola will post the final summary to the listserver *(done)*.

ADJOURN: 3:04 p.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:

- - **Kevin McAbee** will keep the BC updated on developing a recommendation for how to accomplish an electric barrier study to complement the proposed entrainment prevention solution at the Green River Canal (determine the minimum electric gradients needed to prevent downstream passage while minimizing the risk of injury). *Deferred indefinitely until electrification of a weir wall might need to be considered.*
- **Brent Uilenberg** and **Bob Norman** will contact the Program Director's office regarding input from biologists on the Tusher Wash weir wall design.

2. & Revise the Integrated Stocking Plan (ISP) and related issues. (See agenda item #1) The **PDO** is reviewing this in-house again before sending out the revised document (>and also will send it to **Krissy Wilson** and **Harry Crockett** for a final review). *1/15/15: Tom Czapla will send out by January 31.*

3. 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. Czapla said we have new due dates of January 2015 for the Black Rocks and Westwater reports.*
- **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.

& 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; >**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.*

- *& Age-0 Gila from Westwater were going to be brought to the Horsethief Canyon ponds fall 2012, but river conditions didn't allow safe transport. 10/10/13: Dale said they brought ~25 fish they caught into ponds, but have less than a dozen at this point. They will try to build these numbers in future years. Travis hopes to capture some larger fish from Black Rocks using hoop nets. (If we continue this in future years, we may want to alternate taking fish from Westwater and Black Rocks to avoid hitting either sub-population too hard. However, it's harder to transport fish from Westwater, so that may remain a concern.) 10/27/14: FWS collected 20 juvenile and small adult chub (mostly 150-300mm) from Black Rocks this fall and put them in a pond at Horsethief. We'll see how they overwinter and continue to bring in fish as start sampling again next year.*

4. & Nonnative fish management follow-up:

- **- Melissa Trammell** offered to work with **Travis** in summer 2013 and report other small-bodied nonnative fish data. *Darryl Snyder has now done this.* The **Committee** will review the information 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. *1/16/14: To be revisited after workshop on projection tool. 6/11/14*: *Pending.*
- 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.
- **Kevin McAbee** will work with PIs to prepare a proposal identifying proposed sites, frequency, and expected impact of marking passes.
- **- 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). 1/16/14: Harry said CPW is discussing this and thinks it may be implemented in one or more places in 2014 (though not on the White River). Ongoing. 8/26/14: Harry prepared a white paper and CPW is discussing broad agency response to illegal stocking (harvest incentives, must-kill, etc.). >Harry will ask if he can provide a draft to Kevin McAbee.1/15/15: This has all now been wrapped up into the discussions led by CPW.*
- 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.*
- **Dale Ryden** and **Katie Creighton** will provide proposals for replacing FY15 humpback chub population estimate work in Black Rocks and Westwater with walleye removal.
- & 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.*

- **Harry Crockett** will identify personnel and equipment needs to fill gaps in fulfilling 98b SOW for FY15 (since Kyle Battige's position hasn't been filled yet) and share that with the Committee.
- **Dave Speas** will talk to Rob Clarkson regarding what support he may be seeking for the novel piscicide study.
- **Paul Badame, Kevin McAbee** and **Harry Crockett** will find out if Utah and Colorado have regulations similar to the one Rob mentioned in Arizona that allows temporary use of ammonia as a piscicide.

5. The **Program Director's office** will recommend boilerplate language (including identifying reduction targets) to be used across applicable nonnative fish management scopes of work. *Pending (PD to include in FY16-17 Program Guidance in February 2015).*

6. **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. 2/6/14: FWS project #163 has task for razorback pop. est. in Gunnison and Colorado, though not enough razorback captures/recaptures to do much with the Gunnison River data. Osmundson developed razorback matrix for 2008-2010 and Gary White ran this data through Program MARK in 2013 (data to be reported in 2015). PIs recommend also including 2013 razorback data (from the Colorado River pikeminnow population estimate study) in this analysis ($2K in SOW for White to help with data analysis in 2015, adding 2013 razorback data shouldn't add to cost). Developing razorback population estimates in the Green and Yampa will be more difficult, probably not in existing SOWs, and probably should be separate effort; PD's office will discuss costs/mechanism (e.g., add-on to #128) with LFL. 2/21/14, cost estimate pending from* ***LFL****).*

7. **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. 10/27/14:* **Tom Chart** provided Elkhead draft alternatives analysis for discussion and will see if he can share that with the Biology Committee). *1/15/15: Harry will provide periodic updates to the Committee.*

8. 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 will*** *do) and we should be considering potential outside funding sources, as well, since this relates to more than listed fish.*

9. Reconvene the **Nonnative Fish Subcommittee** to discuss the need for completing long-term syntheses for Yampa River native fish response and Lodore/Whirlpool Canyon (funding has not been available so these syntheses had been placed on hold). *1/15/15: Kevin Bestgen said the Park Service is funding the Lodore/Whirlpool piece.* ***The PDO*** *will put the remainder in FY16-17 Program Guidance.*

10. The **Program Director's office** will create and distribute an errata sheet to Appendix C of the Basinwide Strategy. *Pending.*

11. 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.*

12. **Koreen Zelasko** will finalize the northern pike synthesis report, incorporating Kevin McAbee's editorial comments.

13. **Krissy Wilson** will find out if PIT tag data from the San Rafael and Price rivers are being submitted to Travis.

Attachment 2
November 2015 5-Day Hogback Weir Test

	CPM <100mm	CPM >150mm	RBS <200mm	RBS >300mm	Total
Number Stocked	217	205	209	172	803
1- Fish Bypassed during test	57	42	19	25	143
2-Fish Entrained during test	4	7	1	6	18
3- Undetected (upstream?)	127 58.5% (127/217)	135 65.8% (135/205)	68 32.5% (68/209)	78 45.3% (78/172)	408 50.8% (408/803)
% bypassed 1+2	93.4% (57/61)	85.7% (42/49)	95.0% (19/20)	80.6% (25/31)	88.8% (143/161)
% bypassed of total exiting facility 1+2+3	30.3% (57/188)	22.8% (42/184)	21.6% (19/88)	22.9% (25/109)	25.1% (143/569)
% entrained 1+2	6.6% (4/61)	14.3% (7/49)	5.0% (1/20)	19.4% (6/31)	11.2% (18/161)
% entrained of total exiting facility 1+2+3	2.1% (4/188)	3.8% (7/184)	1.1% (1/88)	5.5% (6/109)	3.2% (18/569)
Post Test Fish Remaining in Intake Canal (not entrained or bypassed)	29 13.4% (29/217)	21 10.2% (21/205)	121 57.9% (121/209)	63 36.6% (63/172)	234 29.1% (234/803)

Attachment 3

January 15, 2015

Upper Colorado River Endangered Fish Recovery Program
Policy Regarding Capitalization of Common Names of Fishes

Upper Colorado River Endangered Fish Recovery Program Policy

After reviewing conflicting policies and conventions (described below), the Recovery Program established policy *not* to capitalize species' common names. This policy was approved by the Biology Committee on January 15, 2015.

- Common names will not be capitalized in general publications (e.g., meeting agendas and summaries, Recovery Action Plan materials, sufficient progress memos, or outreach materials such as newsletters, briefing book, news releases, social media posts, etc.).

- Common names will not be capitalized in annual reports, scopes of work, or technical reports.

Background

In keeping with scientific and journalistic style conventions, the Recovery Program has never capitalized common names of fishes in any of its documents. This practice came into question when the seventh edition of the *Common and Scientific Names of Fishes from the United States, Canada, and Mexico*, published in 2013, included a major change: capitalization of English common names of fishes and the American Fisheries Society's guide to publication style was changed to match. The statement/rationale for this decision was:

> "The **American Fisheries Society** and **American Society of Ichthyologists and Herpetologists** Joint Names Committee (the governing committee in North America that determines the scientific and common names of fishes), has decided that the first letter in each word in the common names of fishes will now be capitalized. The decision to capitalize common names was made to better facilitate communication, particularly to a lay audience. For example, clarifying adjectives vs. common names. In the sentence, "I caught a spotted gar.", is it referring to one of many species of gar with spots, or a *Lepisosteus oculatus*(Spotted Gar)? This decision has been accepted by the AFS Executive and will be reflected in the upcoming seventh edition of *Common and scientific names of fishes from the United States, Canada, and Mexico*, AFS Special Publication. The Committee recommends that the use of capitalization be adopted now."

Conflicting Policies and Styles

In Recovery Program technical reports, authors have been directed to generally follow AFS Guidelines (with the exception of using English units for river location and water volume). However, the new AFS requirement to capitalize common names conflicts with the U.S. Fish and Wildlife Service's Journal of Fish & Wildlife Management guidelines for authors and its media style guide with regard to capitalizing species common names1.

State partners in the Recovery Program do not capitalize fish common names in their public materials.

Most English scholars advise not to capitalize common names and the broader trend in written English is toward not capitalizing (pers. comm., K. Winkler, Blue Ridge Community College, Flat Rock, NC). The AP

1 U.S. Fish and Wildlife Service guidelines not to capitalize common names apply to all taxa, including birds, despite the American Ornithological Union's decades-long direction to capitalize common names of birds.

Stylebook, says, “In general, avoid unnecessary capitals.” For example, the standard now is to write "president" when referring to the president of the United States.