



Biology Committee Meeting Summary
July 12-13, 2012, Grand Junction, CO

PARTICIPANTS

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

Others: Pat Martinez, Tom Chart, Tom Czaplá, Angela Kantola, Steve Platania, Kevin McAbee (via phone) and Mark McKinstry (via phone).

Thursday, July 12

CONVENE: 1:00 p.m.

1. Review/modify agenda – The agenda was modified as it appears below. (Crockett, 5 min)
2. Tusher Wash – Dave Speas said no one responded to the RFP for the Tusher Wash mortality study. Potential applicants cited a lack of time/personnel to work on the project. Kevin McAbee said that even if someone was available at a later date, it would push the decision out even further. Meanwhile the irrigators are replacing the diversion and we're looking at a possible electrical barrier. The group agreed, although it's unfortunate, because it would have provided valuable information. Steve Platania noted the RFP was thorough and very well written.

Kevin McAbee said NRCS is providing \$1.5M of emergency watershed funding to rehabilitate the diversion. The project sponsor's preferred alternative is to rebuild the diversion as is, with only one modification – to level it across the existing length (which could raise some portions 6-12"). Leveling would improve water provision in low-water years. They also would like to install two sluicing gates on each side with skimmer trash racks and they've mentioned doubling the size of the raceway (width, depth?) so it could be sluiced. (Melissa noted this could increase entrainment.) The irrigators expect to have engineers selected in a couple of months, drawings this fall, and construction in fall of 2013. The canal company has an 80cfs water right at the end of the raceway. We'd like to screen that since we've found endangered fish in the canal. Kevin said he suggested a possible settling pond with a return to the river which might eliminate the need for a screen or e-barrier. The irrigators are considering this, but currently have no funding for it, so it's quite uncertain at this time. Kevin hopes to have a much better idea about potential design of the re-build, etc., by this fall or winter. Pete Cavalli said that leveling the dam means the water would no longer be concentrated over the "dipping" third of the diversion, so passage would become an issue in most years. This also would pose problems for the e-barrier. >When the final engineering designs are provided, key Biology Committee members should make another site visit. The question is whether we would seek to prevent entrainment at the head of the canal (because we would assume mortality at the hydro plant is unacceptable) or just at the irrigation diversion. Tom Pitts said that since several million dollars could hinge on this decision, perhaps we need to broaden our search for someone to conduct a mortality study. Melissa suggested >the ad hoc committee could complete the literature search portion of the mortality study. We could re-issue the mortality study RFP, but study conclusions would not be back in time to inform the irrigators' re-building the diversion. Kevin stressed the need to come up with the most-needed modifications to the diversion before it's rebuilt in the fall of 2013. He expects a final biological assessment by February or March 2013. Tom Chart said lacking the mortality study, he believes we need to be conservative, assume mortality at the hydropower facility is a problem, and screen at the head of the canal. Tom said a weir similar to the 220 cfs one at Hogback (~\$3.5M) might be another option (although it wouldn't screen larval fish). Kevin said that if the e-barrier worked on smaller fish, that would solve the

problem of unacceptable mortality at the turbines. Pete noted that a weir wall also would reduce sediment.

Tom Chart suggested we don't have enough information about a weir wall to discuss it further today, but the Committee might list their questions/concerns about an e-barrier. Melissa listed effects on larval fish, downstream fish passage, what is the smallest fish on which an e-barrier is effective, and what is an acceptable level of mortality. Sediment probably is not a concern. An e-barrier would protect a more-or-less known quantity of larger fish, but we don't know what would happen to larval fish. To measure success, Pat Martinez suggested a PIT array in the canal (\$100 - \$200K). Pete asked about cost estimates for constructing the coffer dam for an e-barrier; those estimates aren't yet available. Tom Chart said we could expect it would be more efficient to install an e-barrier at the same time the diversion is rebuilt, and we also want to be sure to weigh in on conservation measures for the re-build.

Tom Pitts said that if the mortality is unacceptable, we still need to decide whether it's best to mitigate that on-site or off-site. Melissa noted that the Committee didn't come up with any off-site ideas when they discussed this (albeit not at length) a few years ago.

Harry asked if we could provide our best input on the rebuild, and then reassess (mortality study, etc.), afterwards. Krissy asked if buying out the hydropower owners was still a possibility. Tom Pitts said we'd have to go through a de-commissioning process, which can be complicated. Kevin thinks the hydropower owner is less interested in that option at this point, but we could ask again. Kevin reviewed the 2001 \$1.2M proposal letter from the Service (no response on record), which was intended to 'buy-out' the hydropower operation leaving the irrigation practices unchanged. >The Program Director's office will provide more information to the Committee about a potential weir. The Committee will discuss this again at the next meeting. Tom Chart said we will undoubtedly face a trade-off of unknowns, but we'll try to narrow those unknowns as much as we can.

3. Electrofishing training course update – Dave Speas provide an update on interest expressed in providing an electrofishing course in Grand Junction in early March 2013. About 33 folks have indicated they would like to attend. The next step is to determine how to cover costs (\$600/person training costs, probably \$1,000 total with per diem). The best option would be funds in existing 2013 scopes of work and/or agency training budgets (Dale and Harry said they generally assumed that would be the case), but Krissy said she assumed they would need to increase their SOWs to cover these costs. Program funds (putting the costs in scopes of work) is an option, but 2013 funds are very limited with many competing projects. Tom Chart agrees this is critically important and said his office would look hard for any available funding, but asked the >agencies also to look hard to see if they can absorb these costs within their existing SOW amounts (especially considering some agencies may have carry-over funds available in light of work that couldn't be accomplished in FY12 due to low flows) or agency safety or training budgets. >Dave [and Pat Martinez](#) will check with Jim Reynolds re: how costs may change if we can't afford to send 33 people at once. Krissy stressed the advantage of having crews take this training together. Angela suggested that if we fall just a little short of the total funds needed, perhaps Section 7 funds could be considered. Everyone was committed to getting this done somehow. The Committee will get an update on this at the next meeting.
4. Review of Nonnative Fish Subcommittee Update – Pat Martinez gave a PowerPoint presentation of information from the July 10, 2012 Non-native Fish Subcommittee webinar, plus more recent developments (see Pat's presentation, Attachment 2). Further discussion of several topics presented included:
 - A. Rapid response to invasions:
 - Dave Speas said Reclamation can [issue contracts to](#) facilitate rapid responses, but funds would come from the Program budget.
 - With regard to persistent northern pike concentration in Thunder Ranch, >Dale Ryden will call Ouray

NWR manager, Dan Schaad, to initiate a conversation with the new landowner. If Thunder Ranch were to be rotenoned, it would be best to do it before it connects next year.

--Harry noted that CPW's 3 days of electrofishing on the White River, plus considerable work coordinating the electric seine effort, was performed at no charge to the Recovery Program

B. Yampa River northern pike above Hayden:

-- Harry disagreed with Pat's assertion that CPW promotes the northern pike fishery in Stagecoach Reservoir

--Harry said that he believes monitoring and release of pike in Stagecoach is stipulated as a part of the mitigation for raising the elevation of Stagecoach

--Harry said that he thinks the apparent reduction in pike numbers in the upper Yampa is due to the removal efforts in Catamount and several other private waters, as well as the habitat work at Chuck Lewis State Wildlife Area

C. Dolores River smallmouth bass:

>Dave Speas will convene a conference call to schedule reconnaissance for future nonnative fish work on the Dolores River. (Dave also plans to look for a site for a PIT-tag antenna on the Dolores.)

D. Colorado River NOP at Rifle:

For additional nonnative fish management passes on the Colorado River this year, Dale said the Service may need some assistance from Colorado. >Dale and Harry will talk about this and make sure the work is covered under collecting permits.

--Harry said that neither the otolith analysis of last year's pike nor the size structure of pike caught in both years provide any evidence of reproduction / recruitment in the river.

--Pat said that he views the NOP collected in the Colorado River this season and last year as the leading edge of a wave, and expects we will encounter much higher numbers of NOP in future years.

5. Integrated Management of SMB in the White River-- Melissa began the discussion with the potential of building a floating weir, potentially making it selective to sort fish. Harry thought the initial migration was upstream, but now a reproductive group upstream would have individuals migrating downstream. The projected cost of a floating weir on the Duchene River (which is quite a bit smaller than the White River) was \$200K. The bass seem to be concentrated in the top 10 miles of the river below Taylor Draw and may be present, but not as concentrated, over the next 20 miles. Colorado considered an emergency bounty, but the costs seemed to be prohibitive (assuming Colorado would be paying the bounty). >Harry will ask CPW Regional and Aquatic staff if Colorado's view might be different if the bounty dollars were coming from somewhere else. Dale said if we installed a weir to fence smallmouth bass, we would still need to address the fish in the river above the weir. The Service's Vernal crew made 412 passes in the upper reach (~~10 days~~) and Colorado CPW helped with three of them~~was on the river for 3-4 days~~. River access will be an issue. Bank shocker or backpack shocking through wading are additional methods which could be used just below the dam. Colorado and LFL will use electric seines in the reach just below the dam in the next two weeks. We'll see how effective the electric seine is for now, and not consider a bounty or weir at this time. If capital funds become available, a weir may be reconsidered. If we were to consider a bounty, it would need to be paid for and administered by someone other than Colorado.
6. Submitting PIT-tag data-- Dale asked that PIT tag data for both endangered and three species be submitted by PI's of each entity doing that work. The Service is willing to share the data with anyone the States would like. Preferably, the data would be provided in a similar format to the endangered fish data. The States agreed to discuss providing the three species data to the Service, but need to figure out the process.

ADJOURN 4:58 p.m.

Friday, July 13

CONVENE: 8:15 a.m.

7. Determining natal origin of San Juan River razorback sucker through elemental analysis of scales – Steve Platania said they have begun to pick up razorbacks without PIT tags at the same time they expect to be seeing recruitment. However; some untagged fish have been stocked and some tags can be lost, and they wanted to find a way to determine natal origin (hatchery vs. wild-spawned). They applied the inductively coupled plasma mass spectrometry (ICPMS) method, taking razorback sucker scales collected in SJ in July and September 2011 (from both PIT tagged and untagged) 300-500mm fish. They also collected scales from known source populations (Dexter and Uvalde). Seven wild fish were collected, only one which did not have a pit tag. Steve explained the techniques they used. In the water analysis, the elements magnesium and strontium were very different between Dexter and Uvalde. The calcium/strontium ratio signatures were completely differentiated between Dexter and Uvalde (no overlap), so they didn't need to use the calcium/magnesium ratio. Steve displayed an example of a really "clean" read of a scale (Attachment 3) This fish was reared at Dexter, moved to Uvalde, and then stocked in river. Much of the scale data is not this "clean," however, and requires significant review and "cleaning." Also, if a scale has regenerated, it will read very differently. (Regenerated scales shouldn't be used in the analysis, but in the case of the regenerated scale they analyzed, it was a good confirmation of the river signature.). Pat asked about field methods to prevent contamination; Steve said the scales were scraped (using a metal tool) and de-contamination is performed in the lab. Based on the scale analysis (and without checking the PIT tag information for confirmation first), they assigned all seven wild fish to a Dexter natal origin based on their scale analysis. Of these fish, the natal origin of four was known, and all four, in fact, had their natal origin at Dexter. Therefore, the methodology was shown to be sound and proven for this task. It provides results regarding natal origin, provides a non-lethal technique, provides results on fish location throughout its life-cycle, and field data are easily (economically) acquired during existing project work. One caveat is that over time (as the fish ages), the signatures could degrade (Steve would like to do more work on this using long-held hatchery fish and comparing scales to otoliths). Lessons learned: need to analyze multiple scales from each fish (mount 10 scales; want 5 clean datasets); need to clean and process scales after trips (control drying and deterioration); assess river water chemistry spatially and temporally (understand potentially compounding factors). Steve doesn't know if they'll be able to distinguish natal origin in wild-produced fish between different rivers. Dale gave a bit of history on San Juan stocking, saying they try to PIT tag all fish stocked in the river. They believe they had an 8-10% tag loss rate. In 2006-2007, they changed their stocking strategy, which resulted in stocking some untagged fish from the NAPI ponds. Subsequently, from 2006-2009, they recaptured a much higher percentage of untagged fish. This relates to the Lake Powell discussion, and potentially determining the natal origin of the untagged fish that have been picked up there. Melissa asked about cost and Steve said the cost to do elemental analysis at Woods Hole is ~\$1500/day (machine can be run for 24 hours); you take three people so someone is always there to monitor the machine as it analyzes the data (it took two days to analyze the data in this study). Processing/clean the scales (before going to Woods Hole) is the most time-consuming part of the process. The advantage of going to Woods Hole is the support that you get from them. Steve said they figure it would cost about \$40K to run 200 scales (from scale cleaning to report-writing). As they improve the technique, they can increase the number of fish that can be analyzed within those 200 scales. Krissy said she's interested in learning whether scales or fin rays are most stable over time and will look into that under the June sucker program.
8. Lake Powell inflow – Dave Speas said the idea to sample the inflow area of the Colorado River has resurfaced as the San Juan program has sampled the San Juan inflow and found razorback suckers. The

habitat in the Colorado inflow is similar to that at the San Juan inflow and in Lake Mead. Mark McKinstry described their work at Lake Mead (including long-distance movements of nearly 200 miles) and the San Juan inflow. Mark said Lake Powell fish are being captured not only at the inflow, but also well out into the lake at Neskai Canyon. The work on the San Juan was scheduled to end (or at least pause) this year, but Reclamation would like to extend it and also sample the Colorado inflow. Reclamation has some **extra** funds (~250K) and have proposed providing those as a cost share with both recovery programs. Dave Speas suggested that we might start by preparing a scope of work for consideration. Melissa said the Park is very supportive of this work and has some housing at Hite and boat support they could offer. Dale said that the logistics are simpler in the Colorado River inflow, but it's also a much larger area to sample. Dale said we may have fish moving from one arm to the other and so may have exchange between San Juan and Colorado River fish. Dale added that they've been surprised at the number of fish they've captured in the San Juan and where they've captured them. Sampling could be done without sonic tags. Brandon said he thinks it's highly likely we'll find fish, the question is whether we'll find recruitment. Dale and Brandon emphasized that study design will be important and long-term studies will be needed to get at many of the questions we may have. Reclamation's additional funding is available only for 2013. Tom Chart agreed it would make sense to develop a scope of work so that we can start working out the questions we want to answer. Dale suggested that if the recovery programs don't have funds available for this, it might make more sense to concentrate in one inflow or the other rather than trying to spread resources out over both, perhaps staggering them by year. Dale also pointed out that while funds may be available, people and equipment may be limited. Tom Chart said that we also should consider involving Utah's lake sampling crew. Dale said in two years of sampling on the San Juan, they've been able to answer questions about whether fish are present, how many are present, and where are they found, as well as gather data on movement. Dale noted that they've also captured Colorado pikeminnow in the San Juan arm as flows have dropped. Brandon said we might also capture bonytail (Krissy said one was captured at Good Hope Bay in 2009). As it relates to recovery, the San Juan program is asking if/how they might manage these fish, whether or not passage (selective) is needed at the waterfall, whether fish should be translocated, etc. Mark McKinstry noted that natural recruitment in the San Juan inflow could have a huge impact on recovery in the San Juan River. Dale agreed that this habitat may be more important for recovery of razorback than previously thought. Tom Chart suggested getting a group together to outline the questions and a scope of work (should include Dale and Brandon). Tom Czaplá noted that there are spawning aggregations at Needles in Lake Havasu, also (though Mark cautioned that the habitat is very different). Dale and Tom Chart suggested some reconnaissance of the Colorado River inflow would be helpful. In reference to potential importance of these habitats long-term, Melissa cautioned that conditions change significantly over time in the lake, so we have to consider that. With regard to a razorback monitoring plan, Tom Chart suggested that the most important test is whether these fish contribute to additional recruitment in the river. >The Committee agreed that Dale should work with Utah, Reclamation, Brandon, and the Park Service to begin drafting a scope of work (a reconnaissance trip may be needed for the Colorado River inflow).

Tom Czaplá said Dave Schnoor has ~7,000 ~70mm razorback (untagged) he suggested he might stock in Lake Powell, but the Committee responded that they do not want to stock untagged fish. Dale will talk to the San Juan program about growing out these fish in their the Horsethief Canyon Native Fish Facility ponds so they can be tagged and stocked in the San Juan later. Krissy suggested that if some of those fish would be appropriate for back-up broodstock at Wahweap, a portion might go to Wahweap. >Tom Czaplá will talk to Dave Schnoor about this.

9. Fire Impacts to the Aquatic Environment (what can/should we do) – Dale Ryden said the Pine Ridge fire by Debeque burned just under 14,000 acres in late June/early July. There were some concerns about ash and fire retardant and our plans to collect young chubs later this year. The rainstorm last week washed ash and retardant into the river, but the smallmouth bass electrofishing crews have not detected any dead fish.

Service contaminants folks have determined that not much retardant got into the river and are working with BLM on a remediation plan.

10. Update on Plans to Secure YOY chubs from Westwater in captivity – Dale said the original plan was to capture fish in September and take them to the new Horsethief Canyon Native Fish Facility Bottom ponds. Since we haven't seen any fish kills post-fire, Dale suggested that we not accelerate the chub capture. Concerns are water levels (they can't even safely use a jet boat at current flows; the larger boats that will be needed to safely capture and transport humpback require 2,800 cfs). Hopefully, flows will come up by September with summer monsoons and some reduced irrigation. Dale also would like to wait until September to be sure that the ponds are ready. The downside is that the young chubs may be too large to seine by September. Melissa suggested that baited hoop nets might work (set for just an hour or two while seining instead of overnight).
11. Review reports due list – The razorback monitoring report and Elkhead escapement report were not ready for review at this meeting as previously contemplated. >Angela will send Brandon Albrecht's and Kevin Christopherson's comments on the razorback monitoring report to the Biology Committee, and the Program Director's office will seek a third peer review (perhaps Dave Propst). The Committee has no further comments on the Utah native fish response report and >Krissy will have Matt send the final to the Program Director's office.
12. Review previous meeting assignments (see Attachment 1)
13. Schedule next meeting – The next meeting will be October 16 from 8 a.m. to 5 p.m. in Grand Junction. Agenda items will include Tusher Wash, report reviews (razorback monitoring and Elkhead escapement), electrofishing course update, etc. >The Program Director's office will arrange a meeting room.
14. Review and approve May 4, 2012 Biology Committee webinar summary (revised summary sent with this agenda). (Note: this is not a "consent item" because the Committee will need to discuss some of the comments received on the summary.) > Harry Crockett will send out a track changes version today for Committee approval (*done*). No response by July 27 will indicate approval.

ADJOURN 12:25 p.m.

Attachment 1: Assignments

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. & The **Service and Program Director's office** will provide the Committee a draft addendum to the White River report that will present the measured flow requirements in a historical hydrologic perspective. The Program Director's office also will research where we left Schmidt and Orchard's draft report on peak (channel maintenance) flows and recommend whether to have it reviewed by the geomorphology panel.
 - *5/6/10: The Program Director's office will complete the addendum to the White River report and provide a status update and recommendation on the draft Schmidt and Orchard report on peak (channel maintenance) flows for Biology Committee review by July 1, 2011.*
 - *Sent to BC July 1, 2011. 9/30/11: conflicting comments have been received, Tom Pitts has asked Jana for an extension on the comment deadline (extended to Nov. 2). See also agenda item #3c.*
 - *3/6/12 **Jana Mohrman** will provide a revised report to BC and WAC by mid-summer.*

2. &The **Program Director's office** will prepare a list of issues to be resolved regarding Tusher Wash screening (e.g., levels of mortality acceptable for what size classes, potential O&M costs, etc.) to help move this decision forward (and provide that to the Biology Committee and the Service). *Done.*
 - *5/6/10: A small group (**Melissa, Kevin McAbee, Dave Speas, Tom Pitts, and Tom Czapla**) will work with **Kevin Bestgen** to review/build on the risk assessment, focusing on understanding existing impacts and what could be gained by various screening options. Tentatively, it would seem the best choice would be fish friendly runners with a screen on the irrigation ditch (contingent on further analysis). *BC to submit proposal to MC by 12/31/10.**
 - *12/13/10 BC discussion: The Biology Committee recommended >starting with a literature review (there may be good information from low-head structures in the eastern U.S.); working on outlining what would be needed in a mortality study (including engineering considerations); and further investigating whether the owners would consider full or partial decommissioning.*
 - *3/1/11 As **Kevin McAbee** gets engineering info from the irrigators, he will share it with the ad hoc group. **Kevin** also will inquire more about the purpose of the 9" (at riverbank) – 20" (at center) concrete cap, to determine whether it is to benefit the existing diversion, or both the existing diversion and the proposed diversion on river left.*
 - *5/13/11: Dave provided questions from Juddson Sechrist; the **Tusher ad hoc group** reviewed and discussed these on April 4 (summary sent to BC 4/20/11), agreed to have another meeting (site visit) this summer, and re-iterated the need for an initial literature search/review focusing on fish mortality at other sites with small hydro-electric facilities and smaller hydraulic head differentials.*
 - *9/30/11: The **Program Director's office** will ask if **Brent Uilenberg** and **Bob Norman** can provide description/specifications of the hardware at Tusher to help us understand if it can be retrofitted (11/8/11: awaiting reply). .*
 - *1/26/12: **Tom Czapla, 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.*
 - *6/26/12: **Reclamation** is developing a cost estimate for a coffer dam that would allow installation of an electrical barrier.*
 - Tom Pitts suggested **Reclamation** work with **Smith-Root** to put all the Tusher Wash electrical barrier installation costs (barrier, coffer dam, construction, etc.) in a report for the Committee's review. **Tom Czapla** will work with Smith-Root and Reclamation to produce that.
 - 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.

- The **Program Director's office** will provide more information to the Committee about a potential weir like the one at Hogback on the San Juan.
 - The **Service** will revisit offering to buy out Thayn Hydropower.
3. & Revise the Integrated Stocking Plan (ISP) and related issues. **Tom Czapla** is convening a group to revise the ISP.
- *5/13/11: Cost-benefit analyses should be included in the revised ISP; Tom Chart said he thinks the Program Director's office can initiate this analysis. Results of the health condition profile meeting held at Dexter in March should be incorporated into the revised stocking plan. Discussion of humpback chub and back up pikeminnow broodstock were prominent in this meeting. Horsethief pond water may be whirling disease positive, but Krissy said that Utah can apply for a variance from their Fish Health Board since the fish will be stocked where whirling disease is present and razorback are not known to carry WD.*
 - *6/2/11: Core ad hoc group identified: Harry Crockett, CDOW; Krissy Wilson, UDWR; and Pete Cavalli, WFG; Dale Ryden and/or Dave Schnoor, Travis Francis, USFWS; Dave Campbell and Scott Durst, San Juan Program; and input from hatchery managers as needed (particularly as it pertains to space at facilities).*
 - *4/17/12; 6/26/12: Tom Czapla sent out a rough draft revised ISP to the core group on April 13, 2012 and they held a conference on May 9 (>**Tom Czapla** will send Krissy a summary if there is one); hatchery personnel determining if they can grow out 250mm bonytail in 24 months. 7/13/12: Awaiting bonytail information from Dave Schnoor. >**Krissy** will work with **Dale** to get the variance request for Horsethief Canyon Native Fish Facility Bottom through the Department of Agriculture before stocking in September 2013.*

Humpback Chub (population estimates)

The **Program Director's office** will communicate with Gary White to determine how many and which of the questions from the HBC workshop to focus on. *Pending.* **Derek Elverud** provided the database for Westwater for Gary White to combine with Black Rocks, which will require a separate SOW.

- *5/13/11: Black Rocks and Westwater data have been transferred to Gary White; **Program Director's office** will check to make sure we've got this analysis covered. 3/6/12: Done and 131 SOW revised accordingly (\$20K provided to LFL in FY12).*
- After the ad hoc group meets, Melissa Trammell will draft an Environmental Assessment of the impacts of the humpback chub captivity management plan (also addresses how to deal with captured roundtail chub); **Krissy Wilson** will work with **Melissa** on the EA. **Tom Czapla** will send out the briefing paper he received with the humpback chub genetic data to the Biology Committee (*done*). **Melissa Trammell** will review Dexter's new plan to see if it may impact this (also will talk to Tom Czapla). 3/6/12: This is on hold (if even necessary) until the humpback chub ad hoc committee finishes their plan. If fish are not removed from the Yampa River, an EA won't be needed.

Humpback Chub (broodstock development / genetics)

- *11/22/11: Conference call to discuss humpback genetics and potential refugia/propagation held 11/2/11; draft action plan materials sent to group from Tom Czapla.*
- After the ad hoc group meets, Melissa Trammell will draft an Environmental Assessment of the impacts of the humpback chub captivity management plan (also addresses how to deal with captured roundtail chub); **Krissy Wilson** will work with **Melissa** on the EA. **Tom Czapla** will send out the briefing paper he received with the humpback chub genetic data to the Biology Committee (*done*). **Melissa Trammell** will review Dexter's new plan to see if it may impact this (also will talk to Tom Czapla). 3/6/12: This is on hold (if even necessary) until the humpback chub ad hoc committee finishes their plan. If fish are not removed from the Yampa River, an EA won't be needed.
- *1/26/12: **Tom Czapla** will provide researchers direction on collecting fin clips from adult humpback in*

*Westwater and Black Rocks and other populations, i.e., Cataract Canyon, Desolation/Grey Canyons, Yampa Canyon, or wherever else they may be encountered. 5/4/12: pending. Fin clips should be taken from all fish identified as humpback chub (also roundtails, under a different project). Tom Chart said it would be great to have a photo of the fish on a grid board; Krissy agreed. **Tom Czapl**a will include that in the protocol.*

- *3/6/12: **Tom Czapl**a will remind the humpback chub genetics ad hoc group to submit comments (7/13/12 comments still pending).*
- *As identified in the 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.*

Razorback Sucker

*& **Dale Ryden** and **Dave Schnoor** will summarize Ouray hatchery needs (water source for Randlett and generator for Grand Valley) and submit it to the Program via Tom Czapl. **Dale** also will seek Service funding. The report will include a discussion the relative risks of power outages at Grand Valley. Melissa suggested that for the long-term, we need a feasibility study for alternative water sources for Randlett.*

- *5/13/11: Dale said Reclamation says alternative water sources would have a \$10M price tag. The Service has been discussing the manganese problem and will convene a group to discuss (Program Director's office, hatchery folks, Reclamation, etc.). Dave Schnoor has explored the idea of a generator for the Grand Valley unit. The **Service** should have a more comprehensive idea about these things in a few months.*
- *7/6/11: Dale e-mailed write-up (discussed briefly at 7/10-11 BC meeting).*
- *8/24/11: Service purchased Grand Valley Unit generator. Service/Reclamation met to discuss manganese; proposal to hire contractor and install additional filters pending.*
- *9/30/11: Proposal for **contractor** review of alternatives for remediating manganese approved by Management Comm. 3/6/12: **Tom Czapl**a will check on the status, as the contractor has not yet been onsite. 5/4/12: Contractor has recommended two options in a preliminary report; likely the selected option will be to install one more bank of filters/BIRM. 6/27/12: contractor made recommendations and Ouray ordered the filter bank and has been replumbing the facility. Contractor may provide report after the install and recheck. 7/13/12: Some additional well electrical problems at Ouray are being worked on now. The ponds also are being fenced to exclude otters (about a third of the fish were lost in one pond this year).*
- ***Tom Czapl**a will talk to Dave Schnoor about whether some of the excess razorback at Ouray would be appropriate for back-up broodstock at Wahweap.*

Bonytail

- ***Dave Schnoor** will write up his thoughts on bonytail stocking and temperature (3/6/12: draft provided to Tom Czapl, Dave Schnoor revising and will send to BC). The **Mumma and Wahweap hatcheries** will compile their records of stocking temperatures and provide that to **Tom Czapl**a for consideration as part of the integrated stocking plan. Done; Tom Czapl included Dave's recommendations in the draft ISP. Krissy will get river temperature at stocking prior to 2008 by 7/16/2012.*
4. The **Biology Committee** will work on prioritizing their list of potential additional capital projects at a future meeting. *Ongoing.* By September 22, 2010, **Committee members and others** who suggested capital project ideas will provide short explanatory/descriptive text (preferably just a paragraph), and then the **Committee** will decide when to take the next steps (individual ranking, group discussion of combined ranking, etc.). *UDWR & Colorado submitted lists of potential projects, but funds are clearly limited. Tom Chart noted that the Thunder Ranch repairs are complete, but there will be costs for repair of the Price-Stubb apron, also. 7/13/12: With the need for repairs on existing facilities and pending Tusher Wash work, no funds are available and so no prioritization is practical.* (This will be taken off the assignment list after

this meeting summary).

5. The **Program Director's office** will follow up on establishing a process to track percentages of hybrid suckers using standardized protocol for identification of hybridization at fish ladders and in monitoring reaches. *Pending. 1/11/12: Discussed on 1/5/12 NNFSC call; process pending from **Pat Martinez**.*
6. Spring Flows 2011 – aerial photography - 7/10/11: *See Attachment 2 for reaches flown. The **Program Director's office** will look into potential partners to help fund stitching and georeferencing. 8/24/11: In progress. 9/30/11: CWCB's floodplain mapping unit has offered to assist. COE may help, but hasn't found funds yet. **WAPA** also may be interested. 1/26/12: Program contingency funds added to cover stitching; also georeferencing and habitat delineation for the 13 floodplain sites. 6/27/12: All photos will be stitched with river miles and an index posted to the internet. The Recovery Program has provided \$39,500 to date (including FY11 flights) will provide Reclamation with an additional \$14,385 to complete the work. 7/13/12: Western funded higher-priority work of surveying levee breach elevations. This will come off the assignment list after this summary.*
7. **Krissy Wilson** will forward the Committee UDWR's plan for larval light trapping in Flaming Gorge Reservoir (looking for burbot) when she gets it. *9/30/11: this survey for larval burbot couldn't be completed as the likely window was missed this year; willing to consider in next year's work plan. This will be discussed at the nonnative fish workshop. 1/11/12: Gardunio said burbot are attracted to light during larval stage, but such trapping in winter could be difficult. 3/6/12: **Krissy** will provide the annual report (and other relevant reports) to the Committee; **Pete Cavalli** will forward a copy of Wyoming's report(s), also. **Krissy** said she asked and they do not capture smallmouth bass or burbot just below the dam. **Melissa Trammell and Pat Martinez and Krissy Wilson and Jerry Wilhite** will work on a Flaming Gorge burbot risk assessment (conference call scheduled for August 15, 2012). UDWR is funding two studies (food web and early life history).*
8. **Tom Chart and Jana Mohrman and Kirk LaGory** will convene fish biologists involved in developing flow recommendations and geomorphologists (e.g., John Pitlick and Cory Williams) to identify logical next-steps (e.g., is MD-SWMS modeling the best way to proceed) to evaluate flow recommendations, particularly on (but not limited to) the Gunnison where sediment transport is so important. *Pending.*
9. **Kevin McAbee** will ask BioMark about battery packs for the White River pit antenna solar arrays (said to only last ~5 years, with replacements at \$7-11K) and determine if replacements need to be worked into the negotiation with Questar. *7/13/12: Battery life is very dependent on use. Average is 3-5 years but this varies. Apparently there are 4 batteries in the solar set up and those batteries run ~\$600 each. The Service has no ability to ask Questar to pay for these batteries as they've finalized negotiations and all contracts are final. The Recovery Program may need to consider a contingency for battery loss, but will wait and see if this becomes necessary.*
10. **Dave Speas** will check on what gets prepared/distributed in the way of a FGTWG meeting summary (per mention in the draft flow request letter). ***Dave** said the summaries are sent to the FGTWG and will check to see if he can send these to the Committee when they are finalized.*
11. **Dave Speas** (and any other **Committee members**) will send **Joe Skorupski** additional comments on the #144 report by May 11. **Dale Ryden** will see if there's a citation from a San Juan summary document that he can send Joe (*done*). **Joe** will revise the report and send to the Committee by for final approval by May 25, then the **Committee** will approve via e-mail by June 8 (with no response indicating approval). *6/27/12: Joe provided final revisions 5/27, no additional comments from BC; >UDWR just needs to submit the final report.*

12. **Pat Martinez** and **Dave Speas** will poll agencies to determine the number of folks they would want to send to a Program-specific electrofishing course led by Jim Reynolds and what time of year would be best. *In progress; agencies will see if they can absorb these costs within their existing SOW amounts (especially considering some agencies may have carry-over funds available in light of work that couldn't be accomplished in FY12 due to low flows) or agency safety or training budgets. >Dave Speas and Pat Martinez will check with Jim Reynolds re: how costs may change if we can't afford to send 33 people at once (although the preference is to send crews to this training together). If funds are just a little short, perhaps Section 7 funds could be tapped to make up the shortfall.*
13. To follow-up on additional potential nonnative fish management, >**Dale Ryden** will call Ouray NWR manager, **Dan Schaad**, to initiate a conversation with the new landowner about rotenone. >**Dave Speas** will convene a conference call to schedule reconnaissance for future nonnative fish work on the Dolores River. (Dave also plans to look for a site for a PIT-tag antenna on the Dolores.) For additional nonnative fish management passes on the Colorado River this year, Dale said the Service may need some assistance from Colorado; >**Dale Ryden and Harry Crockett** will talk about this and make sure the work is covered under collecting permits. >**Harry** will ask CPW Regional and Aquatic staff if Colorado's view regarding a smallmouth bass bounty on the White River might be different if Colorado weren't responsible for the bounty dollars/management.
14. **Dale Ryden** will work with Utah, Reclamation, Brandon, and the Park Service to begin drafting a scope of work for sampling the Lake Powell inflows (a reconnaissance trip may be needed for the Colorado River inflow).
15. **Angela Kantola** will send Brandon Albrecht's and Kevin Christopherson's comments on the razorback monitoring report to the Biology Committee.
16. The **Program Director's office** will arrange a meeting room for October 16 from 8 a.m. to 5 p.m. in Grand Junction.

Attachment 2
Pat Martinez PowerPoint Presentation

NNF Super-Committee Meeting Summary - 30 Apr & 1 May 2012 - TOPICS

1. Status/scale of NNF problem
2. Rapid response to invasions
3. Low flows in 2012
4. Yampa River northern pike above Hayden
5. Dolores River smallmouth bass
6. Colorado River NOP at Rifle
7. Prioritization of waters for rotenone treatment
8. Assessment of burbot invasion risk
9. Green River walleye
10. Basin-wide Strategy
11. Illegal introductions in Gunnison
12. Highline State Park illegal introductions:
13. Illegal fish stocking:
14. I&E Committee contribution:
15. Electrofishing safety & procedures

NNF Super-Committee Webinar Summary – 10 Jul 2012 – ACTION & NEW ITEMS

1. Status/scale of NNF problem
2. Rapid response to invasions - Thunder Ranch rotenone for NOP
3. Low flows in 2012 - White River electric seine for SMB
4. Yampa River northern pike above Hayden
5. Dolores River smallmouth bass
6. Colorado River NOP at Rifle
7. Prioritization of waters for rotenone treatment
8. Assessment of burbot invasion risk
9. Green River walleye
10. Basin-wide Strategy
11. Illegal introductions in Gunnison
12. Highline State Park illegal introductions
13. Illegal fish stocking
14. I&E Committee contribution
15. Electrofishing safety & procedures

Rapid response to invasions - Thunder Ranch rotenone for NOP

- Trammel: draft “**decision-tree**” in Aug 2012: if we have a “fire truck”:
 - what constitutes need for rapid response? (“what is a fire?”)
 - what actions to take?
 - protocol to “fight an invasive fire”
 - “volunteer (agency)” or “reserve (consultant)” responders?
- Speas: investigating **rapid-needs-funding** within USBR
- funds withheld in reserve

- funds would come from ongoing nonnative fish control
- reduced funding for nonnative fish control?
- BC & MC awareness of implications
- Thunder Ranch **rotenone?**:
- did not connect in 2012, but also will not drain totally
- NOP not depleted by netting in 2011 & have reproduced (two age-classes)
- change in ownership – will require negotiation above field-level staff
- wetland on UT pre-approval list for rotenone application

Low flows in 2012 - White River electric seine for SMB

- Highlights:
- crew **cooperation**: White R. SMB, Yampa R. Surge, etc. - **skill**: “new record low flows at which work performed”
- **adaptability** (rafts vs. boats; recon & removal in alternate sites)
- Concerns:
- **gizzard shad** expansion in range & abundance (White & Yampa R.) - increased **northern pike** in Green R.
- “**trifecta**” in Colorado R. near GJ (**shad, walleye, stripers** – Lake Powell?)
- Other:
- **White River electric seine for SMB** (CPW & CSU-LFL)
- **otoliths** collected from nonnative fishes
- Lake Powell **signature distinctiveness**

Yampa River northern pike above Hayden

- 98c: Upper Yampa River northern pike removal
- CPW (Atkinson & Crockett) **NOP removal** in spring 2012
- more effort in **2012 (107 NOP)** vs. **2005 (>300 NOP)**; more trout in 2012
- CL-SWA **habitat work** has reduced NOP habitat; WC NOP concentration
- future “98c” work (CPW)? Upper Yampa NOP plan (CPW & Rec. Prog.)
- Catamount Metropolitan District hydro-power project
- Sec. 7 water & **nonnative species** (NOP & rusty crayfish) concerns (FERC)
- hydro-proponents supportive of **rotenone to eradicate NOP** in Catamount
- **re-invasion by NOP** or invasion by WLY from Stagecoach?
- NNFSC: “take advantage of **FERC-Catamount opportunity** to control NOP”
- CPW would like to continue the conversation re: their ‘promotion of NOP in Stagecoach’.

CATAMOUNT (private)	STAGECOACH (state park)
- must-kill for NOP	- NOP promoted by CPW
- NOP removal by multiple methods (net, angling, electrofish)	- NOP monitored & released
-trout emphasis in sport fishery (including WD resistant broodsource)	-NOP accommodated by stocking larger, more expensive trout

-no WLY, yet	-WLY increasing (removal by CPW)
- rusty crayfish intensive removal	- rusty crayfish intensive removal?

Dolores River smallmouth bass

- Recovery Program recon/removal for SMB in 2012?
 - SMB established/concentrated in **Dolores R. near Disappointment Cr.**
 - bank-accessible during low flows, **inaccessible by boats** (ATVs)
 - removal by netting deep pools, electric seine, angling, etc.
 - existing partnership (**Dolores River Dialogue**)
 - CSU-LFL (Hawkins et al.) & USFWS-GJ (Ryden et al.) **assistance available?**

Colorado River NOP at Rifle

- NOP history to date:
 - 2004-2010: 6 NOP - RM164-237
 - 2011: 10 NOP - RM185-240
 - 2012: 10 NOP – RM 190-241 (none in Grand Valley)
 - 2012: NOP in Connected Lakes (GJ) & Roaring Fork River (Basalt)

- additional passes as rapid response to address NOP invasion?

Prioritization of waters for rotenone treatment

- Matrices in progress:
- **need/escapement/invasion**
- **social/feasibility/reinvasion**

1. Nonnative, nonsalmonid piscivore risk or confirmation of escapement/ emigration into critical habitat for endangered fishes in the UCRB

Problematic species abundance in river reach or reservoir 10.0-8.1	Escapement confirmed or emigration risk? 8.0-6.1	Reservoir/river water management factors (spills or flows screened physically or physicochemically or unscreened) 6.0-4.1	Problematic population in reservoir or river reach - proximity & connectivity to critical habitat 4.0-2.1
---	---	--	--

2. Social/management factors that may influence feasibility for successful reclamation of problematic nonnative, nonsalmonid piscivore confirmed or posing a risk to escape/emigrate into critical habitat for endangered fishes in UCRB

Reservoir capacity (acre-feet) as indicator of practical & fiscal feasibility of rotenone treatment 10.0-8.1	Additional logistics for reclamation (access, drawdown, etc.) 8.0-6.1	Reservoir/river reach setting, managed park/recreation, public access & use 6.0-4.1	Protective regulations for problematic species 2.0-0.1	Agency promotion of problematic species 4.0-2.1
---	--	--	---	--

Assessment of burbot invasion risk

- escapement risk by life stages of burbot from Flaming Gorge Dam
- **2nd burbot** captured in Green R. (Whirlpool Canyon) in 2012
- Trammel, Wilson, Wilhite, Martinez (meet 15 Aug 2012)

- UDWR & WYG&F reservoir sampling reports
- USU research on burbot in Flaming Gorge

I&E Committee contribution

- NNFSC comments on I&E Committee draft contribution to BW Strategy
- comments will be summarized by Trammel & Martinez
- summary presented to I&E Committee meeting 17 Jul 2012
- subsequent conference call between NNF & I&E if desired
- incorporate revised I&E contribution into revised NNF BW Strategy

Steve Platania, Figure 1

Wild Razorback Sucker

Wild Fish 2-2

