



Upper Colorado River Endangered Fish Recovery Program

August 23, 2011

Biology Committee Draft Summary

July 11-12, 2011

[Country Inn and Suites](#), 4343 N Airport Way, Denver, Colorado

Biology Committee: Melissa Trammell, Dave Speas, Dale Ryden, Krissy Wilson, Shane Capron, Tom Pitts, Brandon Albrecht, and Sherman Hebein (for Harry Crockett). Pete Cavalli joined by phone on Monday. CREDA was not represented.

Other participants: Pat Martinez, Tom Chart, Angela Kantola, Jana Mohrman, Debbie Felker, Kevin Bestgen, and Randy Hampton. Paul Badame, Derek Elverud, and Amy DeFreese, joined by phone on Tuesday.

Assignments are indicated by “>” and in Attachments 1 and 3.

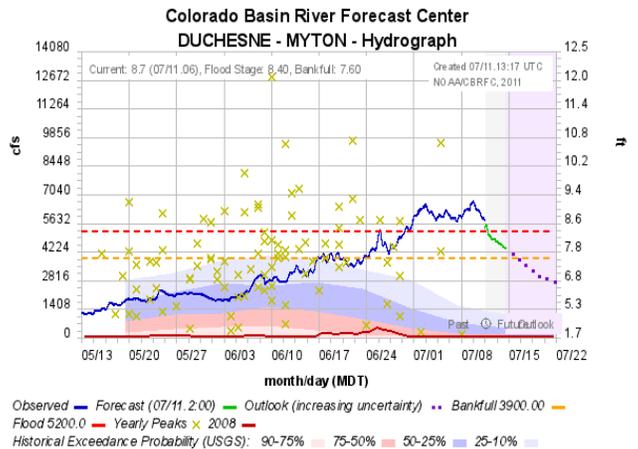
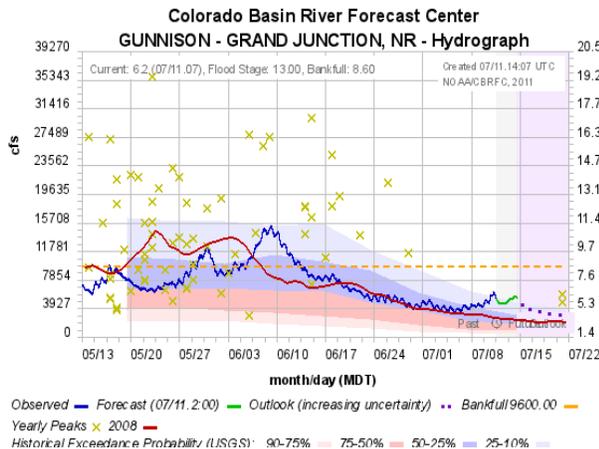
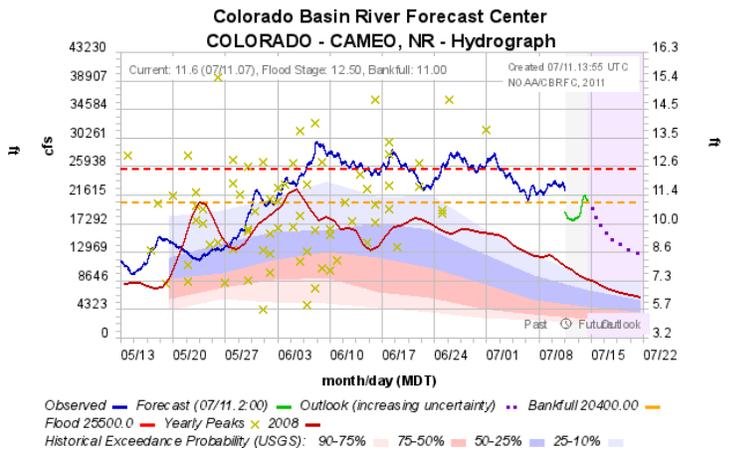
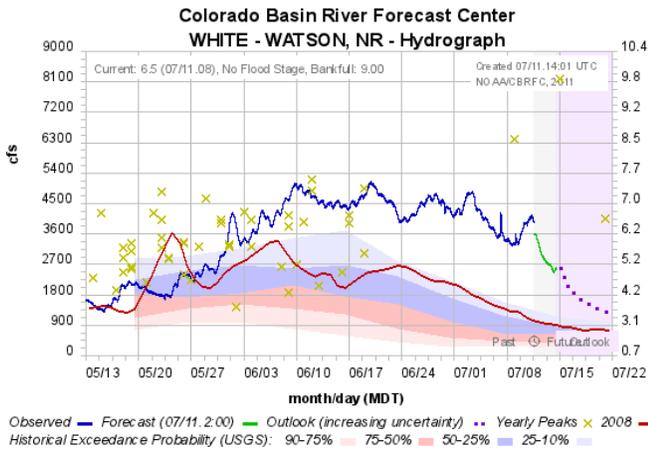
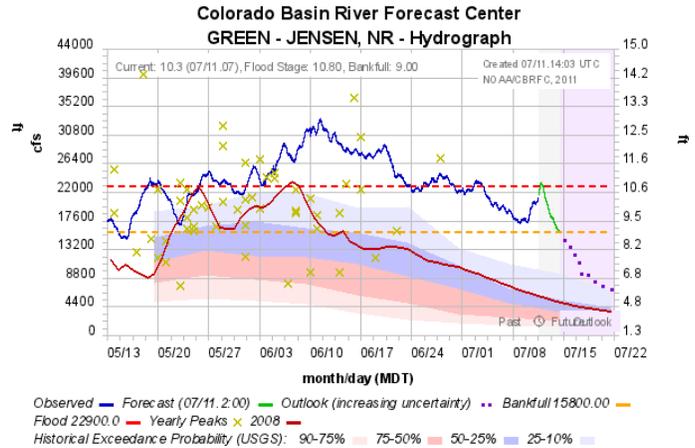
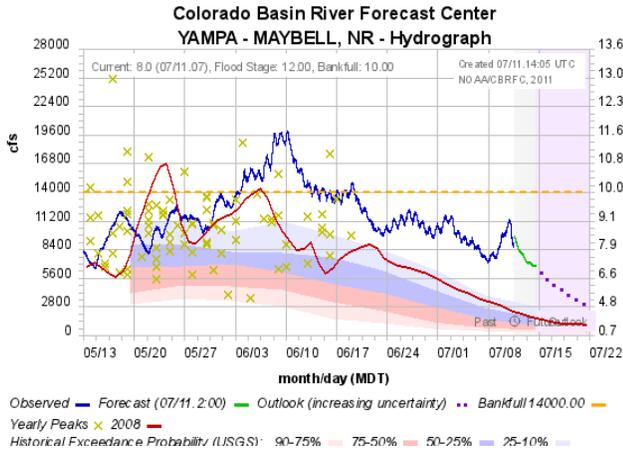
Monday, July 11

CONVENE: 10:30 a.m.

1. Hydrology and related updates

- a. PIT Tag GIS – The updated website will be available shortly and Jana will provide a link when the help page is complete. Jana will consider scheduling a demonstration via webinar or during a Biology Committee meeting. The site is no longer password protected. The Committee discussed the pros and cons of password protection, with most preferring a password. At minimum, the site should have a disclaimer stating that the data are provisional. >The Program Director’s office will make a recommendation regarding whether or not to password protect the site.
- b. White River – The draft flow recommendations went out on July 1; comments are due from the Biology and Water Acquisition committees by August 15. Tom Chart said they built the recommendations on Jack Schmidt’s spring flow work, CRFP-Vernal’s base flow work, and the updated biology provided by Matt Breen and Tildon Jones included in Chapter 1. Jana said the rough schedule is to complete a PBO for the White River in 2013. Tom made a presentation about the PBO to Colorado’s Yampa/White/Green River Basin Roundtable in June. We need to find a suitable venue to involve Utah water users, also.
- c. Spring flows – As all are aware, this has been a very wet year! Jana said that as of July 6, Fontenelle was at 68%, Flaming Gorge 90%, Morrow Point 97%, Blue Mesa 95%, and Lake Powell 72%. June inflow to Lake Powell was 175% of average and the July forecast is 226% of average. Lake Powell was last at this level in October 2001 near the beginning of the recent drought. Jana showed hydrographs (below) for the Yampa at Maybell (where in 94 years the peak has been higher than 2011 only once), the Green River at Jensen (peak higher only twice in 64 years), White River at Watson (peak higher only three times in 82 years), Colorado at Cameo (peak higher six times in 77 years), Gunnison, and Duchesne rivers. >As per Tom Pitts’ request, Jana will parse the peak

flow analysis into pre- and post-reservoir construction where applicable.



- Aerial photos – Jana said 355 river miles of aerial photography was captured on June 7 – 9 on the Gunnison, Colorado, Yampa, Elkhead Creek, White, Green and Colorado (see Attachment 2). The Committee discussed if we want the photos “stitched together” as was done with the [2008 imagery](#) and what portions should be geo-referenced. Jana provided the following cost information for processing the photos:

Methods:

1. Create stitched half to mile long image mosaics (**entire 355 miles**)
2. Use a reference image to find ground control points (GCP).
3. Rectify images are georeferenced or registered to GCP.
4. Onscreen interpretations imagery to determine high water line/flooded areas.
5. Interpreted polygons can be attributed or classified as desired for habitat quantification.

Costs Post 335 miles to the internet: ~ \$10,000 included in all totals

- 1) Unregistered stitched mosaics with river miles- #1 ~\$ 75 per river mile **(\$36,625)**
(No waterline) **100 miles = \$7,500 + on line = \$17,500**
- 2) Georeferenced mosaics - #1 thru #3 = ~ \$225 per river mile **(\$79,875)**
(No waterline) **100 miles = \$22,500 + on line = \$32,500**
- 3) Complete process - #1 thru #5 ~ \$275 per river mile **(\$97,625)**
100 miles \$27,500 + on line = \$37,500

Print ½ mile unregistered mosaics with (#1 and river miles) ~ \$125 per river mile

Tom Chart said at minimum he would like to have all the photos stitched together and made available on the web and then georeference the specific sites that Argonne and Kevin Bestgen worked on. Jana said it takes a fair bit of time to get all the data stitched together. We currently have a \$20K placeholder in the 2012 budget for processing the data. >The Program Director's office will look into potential partners to help fund stitching and georeferencing. Sherm Hebein said the Colorado River and Elkhead Creek to the confluence with the Yampa River portions would be helpful in reviewing potential nonnative fish habitat/escapement. The Committee endorsed, at minimum, stitching all 355 river miles that were flown this year. Dave said Reclamation also just flew the Green River from Flaming Gorge Dam to Split Mountain (and will stitch and georeference this portion).

Tom Chart said the levee the Program constructed at Thunder Ranch blew out; Brent Uilenberg has been discussing this with the ranch manager and the Refuge manager (repair is likely a Program responsibility). Tom Chart recalled that on the site visit last fall, we discussed that it would be helpful to have a water control structure on the outlet; therefore, if we're going to have crews out repairing the levee, we will want to consider this as well. The Program Director's office will keep the Program posted on this.

3. Spring 2011 Browns Park sampling – Kevin Bestgen reported that the high flows made additional sampling in Brown's park possible this year. They began catching northern pike in this reach in 2005 using seines. This year, using fyke/trap nets, seines, angling, and electrofishing between early May and late June, they captured 22 large pike (none were tagged) between 300 – 1000mm (avg. = ~800mm). These fish appear to be resident and most had spawned or were spawning. No burbot were captured. They captured one kokanee, which Kevin said likely came through Flaming Gorge dam. Most of the suckers captured were hybrid white x flannelmouth. They also caught a Colorado pikeminnow via angling near the Utah border, and another in a fyke net. On June 22, they captured 9 pikeminnow in the mouth of Vermillion Creek, which was much warmer than the mainstem at that time. This is more pikeiminnow than they typically catch in two electrofishing passes in Lodore Canyon each year. They were large, adult fish, and five were tagged (two with the old-style tags). The fish had tubercles and one male was running ripe.

4. Razorback sucker larvae in White River – Kevin reported that the razorback sucker larvae captured for the first time this year in the White River were captured a few days before razorback larvae were found in the Green River. The Green River captures were almost a month later than usual, but the date was close to that Kevin predicted based on anticipated temperatures. This corroborates our ability to predict larval razorback appearance in the Green River.
5. I&E Update – Randy Hampton, the Program’s new Information & Education Committee chair, talked about that Committee’s work. Randy is the statewide spokesperson for Colorado Parks and Wildlife (the name for the newly merged organization until the transition team recommends a new name). The Committee is taking a harder look at how we communicate with the public. We’ve stressed nonnative fish removal in the past, but really want to talk more about Program benefits (e.g., continued water use, endangered and native fish benefits, landowner benefits) because this Program really has more “winners” than “losers.” Tom Pitts referenced recent questions from Congress and our responses which emphasize recovery (i.e. the Recovery Program has an endpoint as opposed to a continual effort to avoid jeopardy) and our progress in meeting recovery goals. In addition, how our progress toward recovery provides continued ESA compliance. This message is as important locally as it is back in Washington, D.C. Sherm asked if the DC visits are coordinated closely with the I&E Committee. Randy said John Shields keeps the Committee informed and Debbie prepares the briefing book (which has evolved each year based on questions/responses that we get from Congress). Debbie added that Tom Pitts, John Shields, and Leslie James are all members of the I&E Committee. Dave Speas asked about the Committee’s involvement in providing information to the public about flows (in light of early public misperceptions about this year’s high flows being primarily for fish, for example). Randy said the Committee is careful not to usurp agency roles, and in this case, Reclamation had the lead for publicity. Tom Chart suggested that the Program could consider news releases regarding Green River flows similar to what we do on coordinated reservoir operations. The I&E Committee will discuss this and interagency information exchange during their conference call on Wednesday. Tom Pitts emphasized the need for closer coordination with the San Juan Program (including opportunities for press releases, etc.).
6. Award presentation –Tom Chart emphasized how much the Program appreciates folks in the field providing photos and working with media to promote the Recovery Program. Debbie Felker said that in the midst of this very busy spring field season, the Service’s Grand Junction CRFP office has done extra outreach in support of the Program’s I&E efforts, including a presentation for the Colorado River Education Foundation’s recent bus tour, hosting a Deseret News reporter, and more. Debbie Felker presented Dale Ryden with a Service STAR award for his leadership role in these efforts.
7. Review of draft FY 2012-2013 work plan (See scopes of work at <http://www.coloradoriverrecovery.org/documents-publications/work-plan-documents/project-scopes-of-work.html> and 6/20/11 fws-coloriver listserver posting [with spreadsheet] by Angela Kantola.)

Krissy Wilson noted that many scopes (other than Utah’s) contain indirect costs, yet she thought that when the Program was set up that it was agreed there would be no indirect

charges (Tom Pitts and Angela Kantola said they did not recall any such agreement.) Krissy said that Utah is not charging the Program any indirect costs, although they charge 18% indirect costs for all other projects. Sherm said that Colorado only charges indirect costs for temporary (not permanent) employees (because Colorado is not charging for labor of permanent employees) on their nonnative fish management project (#98a). Utah may raise this with the Management Committee. Tom Pitts suggested that if they do, the Management Committee needs a complete picture (e.g., how much each agency is charging on each type of activity). >The Program Director's office will review this situation and make a recommendation for how to address it.

Dave Speas said PI's need to add justification for high-ticket equipment (e.g., items >\$1,500 like GPPs, radios, etc.), especially if they're requesting it every year. When we discussed this two years ago, we said GPPs were lasting ~5 years, so if they're being replaced more often than that, it needs to be justified. This applies to: 98a, and some other scopes. Pat emphasized that we need to standardize the equipment we're purchasing, and it appears that the ETS units will be our best choice; therefore, we shouldn't continue to invest in GPP units. Pat said he and Larry Kolz are working to complete a manuscript that discusses the performance of the different wave forms (and believes it will substantiate the need to purchase ETS units). Sherm said that CDOW has some concern about the ETS units because they're not perceived as being backed by a large company. Pat recently learned, however, that multiple agencies throughout the mid-West are buying these units in large quantities for Asian carp control work. Pat added the caveat that he and Larry didn't evaluate the ETS units below 100 microSeimens conductivity.

ADJOURN 5:00 p.m.

Tuesday, July 12

CONVENE: 8:00 a.m.

(4. Draft FY 2012-2013 work plan review, continued.)

Project-specific comments and assignments are recorded in the work plan budget spreadsheet (see Attachment 3).

As the budget situation becomes more clear with time, >the Biology Committee will review and prioritize current contingency projects and the passes that were cut from nonnative fish projects.

8. Status of humpback chub brood stock/refugium – Tom Czapla is assembling an ad hoc group to work on a humpback chub genetics management plan. Tom suggested including Melissa Trammell and Rich Valdez for field experience and geneticists Wade Wilson (Dexter NFH), perhaps Connie Keeler-Foster (FWS) and Dennis Shiozawa (BYU) and the Douglasses. Committee members suggested other potential members, including John Wood (Pisces), Tony Echelle (OSU), and Karen Mock (USU).
9. Recent endangered fish captures in the San Juan arm of Lake Powell – Derek Elverud reported collecting 75 razorback sucker over 9 weeks in two areas in Lake Powell (36% of

which were not pit-tagged) and 24 Colorado pikeminnow (see Attachment 4). Derek said they believe they encountered spawning aggregations of razorback sucker. Krissy said Utah-Lake Powell crews sample a couple of days each year at Good Hope Bay (below the Colorado River inflow), but that may not be enough to detect razorbacks. UDWR-Moab could sample below the rapids downstream to the Dirty Devil in conjunction with razorback (or Cataract Canyon) sampling. Melissa suggested this should go on the contingency list or perhaps the Park Service might fund this. Brandon clarified that although the agenda discusses spawning, the more important question is whether razorback are *recruiting* in this location. Stocked fish may have moved downstream and established in Lake Powell, but stocked fish don't necessarily behave like wild fish. Tom Pitts said Dave Campbell considers the San Juan arm fish to be part of the recovery equation (and since there's no waterfall separation, this logic also would hold true for the Colorado River arm). Tom Chart said that management actions in the recovery goals are very focused on river habitat and most of these actions would not apply in Lake Powell. Therefore, the Service will need to discuss further the potential contribution of Lake Powell fish to recovery. Dale said they're trying to determine if there's been natural recruitment in the San Juan arm. Brandon suggested that sampling fish in the Colorado River arm could require a fairly extensive effort (a bit like looking for a needle in a haystack).

10. Review of draft final reports

- a. Bestgen et al, Floodplain synthesis/22f – Shane suggested the last sentence on page 88 needs to be corrected: “Granted, higher flow volumes were entrained in higher flow volume years, but it appears that the percentage of water entrained will not increase until high flows are more concurrent with presence of razorback sucker larvae” (as it is larvae, not water, we're talking about). Shane said he's still working to digest all the linkages. He asked if Kevin might emphasize what he believes is most important from Hayse et al. (Appendix 3). Aside from the report, Shane said as he understands it, Kevin is saying that it all comes down to entrainment rate (which is about 2.5 times higher with higher flows). Kevin agreed, saying that Hayse et al. emphasized that simple connections are what matters, and he doesn't agree, rather, the *amount* of water that comes in so that larvae are entrained is most important. Tom Pitts suggested that all the recommendations be clearly stated as *recommendations* in the Executive Summary. The Committee approved the report with the minor revisions, above. >Kevin will revise and finalize the report.
- b. Price River – Tom Pitts said he'd like more time for review by water users and the Utah Department of Water Resources and also to discuss with them and Reclamation whether there may be solutions to provide water other than from Narrows. Tom Chart noted that the reference to the Narrows Project was in the context of the “avoid dewatering” fish pool. As the bulk of the analysis deals with the importance of flows ≥ 30 cfs to support pikeminnow use, perhaps the specific reference to the Narrows Project could / should be deleted. Amy DeFreese said she thinks the keys in this paper are to discuss the importance of the Price River to recovery and recommend minimum instream flows. Amy said she would like this completed report to be available for analysis in the final EIS. The Committee deferred their review/approval to their September 30 webinar. Amy and Dave will check into the EIS dates and get back to the Committee if earlier approval is needed (if so, an earlier webinar will be scheduled).

11. Larval fish presence as trigger for Flaming Gorge flows – Dave Speas provided a handout describing Reclamation’s questions and concerns about using the presence of larval fish in the Green River (versus the Yampa peak) as the trigger for Flaming Gorge spring flows. Dave suggested that Biology Committee members review this with their Management Committee representatives for discussion in August (Beverly Heffernan is scheduled to attend the Management Committee meeting to discuss this as an informational item). If larval trigger will be the overriding factor, Reclamation would like to know if they’ll be expected to simultaneously meet current ROD flow targets, how the Program would apply use of this trigger under various hydrologic conditions, and whether there’s a science plan for evaluation. Tom Chart said doesn’t think the larval razorback trigger changes the flow recommendations, but based on the recent information presented in the Floodplain Synthesis there appears to be a disconnect in how we have operated the FGD in average and wetter years to meet the intent of those recommendations. Melissa suggested that the recommendations in the Floodplain Synthesis, just approved, should be considered an experimental approach.
12. Review reports due list – Deferred.
13. Tusher Wash (Czapla; 20 min) – Deferred (see also assignments list).
14. Next meeting – The Committee scheduled a webinar for September 30 from 8:30 a.m. to 12:00 p.m. Agenda items will include:
 - Review previous meeting assignments
 - Report reviews:
 - Price River flow recommendations (unless needed earlier)
 - White River recommendations
 - Sediment report
 - Westwater humpback chub population estimate
 - Razorback emigration from Stirrup
 - Native fish response to nonnative fish management in the middle Green
 - Review report due list
 - Tusher Wash
15. Review previous meeting assignments – Deferred.
16. Consent items: Review and approve [May 13, 2011, webinar summary](#): This was a consent item, and Committee members did not communicate any items of concern to Angela Kantola; therefore, the summary was approved as written.

ADJOURN 3:15 p.m.

Attachment 1: Assignments

1. The **Program Director's office** will work with **CDOW** and **Aaron Webber** on the potential for designing a permeable, hydrologically-stable (gravel?) berm to prevent northern pike access to the oxbow slough at RM 151 on the Yampa, and then clean it out once and for all.
 - 10/30/08: CDOW has contacted the property owners of the RM 151 backwater, but hasn't been able to meet with them yet. Mark Wernke from Reclamation is willing to take a look at the property with CDOW. A fairly long berm would be required (>3,000') and we'll need to determine the best type (more permanent configurations could be very expensive).
 - 1/15/09: Tom Nesler said they plan to get engineers develop specs/estimates this spring for something like a 10-year berm structure; the next step will be to find funding (perhaps as a habitat project through GOCO). This would be the first of three or four such projects. Tom Pitts suggested that if the Program provides some matching funds (annual or capital), it might improve the probability of getting GOCO money. Tom also suggested that if we have a project in the hopper, we might be able to compete for end-of-year Reclamation funds.
 - 2/10/09: the Program Director's office considers this a high priority and will contribute funds, if available (see revised FY09 budget).
 - 2/20/09: Recovery Program funds likely available; CDOW working to get engineers on the ground; Nesler considering different approaches (berm, fill the oxbow, etc.).
 - 4/20/09: Tom Nesler said they've met with the landowner and Reclamation engineers will do an onsite survey as soon as the snow melts.
 - 1/5/10: Project deferred indefinitely; Reclamation cautions that the lesson from the Butch Craig floodplain site is to be very careful before considering modifying habitats. Based on the channel dynamics in this area of the Yampa River, it would be unwise to construct an impervious dike at the mouth of this backwater.
 - 1/14/10: The Committee discussed other options to eliminate spawning in this area; the **Program Director's office** will provide Mark's trip report to the Committee and work with CDOW to outline options for Committee discussion at the next meeting (options could include: make the entrance too shallow for adults; a dike set back instead of right at the river; direct removal/net sets; piscicides, etc.)
 - 2/22/10: Program Director's office provided Mark's report.
 - 3/10/10: **CDOW** will work with Reclamation to flesh out their gravel proposal and review additional options (e.g., plant eradication, barriers, etc.). This will be on the May 6-7, 2010 Committee agenda.
 - 5/6/10: Sherm Hebein said **Reclamation** will conduct a site visit with **CDOW** in July 2010.
 - 8/18/10: **Sherm** hopes to schedule a visit after the landowner cuts the grass in ~2 weeks.
2. 3/11/11: Harry Crockett provided a list of habitats CDOW would like to work on (attachment 3 to [March 1-2, 2011 BC meeting summary](#)). A rapidly eroding bank at the Yampa SWA is the highest priority, but CDOW can't access funds to stabilize it until July 1. **Harry** and **Dave Speas** will talk with Brent Uilenberg about the possibility of getting capital funds; **Harry** will follow up with CDOW to make sure they could move forward with the temporary fix this year. **CDOW** also will look to see if other funds might be available. Other items on the list may be considered after a synthesis of the northern pike data.
 - 5/2/11: Sherm Hebein at CDOW found funding and the bank stabilization project at Yampa SWA was completed on April 13, 2011, just prior to rapidly-increasing flows. Billy Atkinson reported that he believes the project was successful and that we will not see further bank

erosion in this particular stretch, and potentially alleviate connectivity to the adjacent pond system. See photos on next page. CDOW will do more permanent work on this Yampa SWA site later this year. Harry clarified that in an exceptionally high water year like this, there will still be sheetflow over the site from upstream, but hopefully the bank will hold so that the site doesn't connect in lower water years. CDOW will still be looking for funding for other items on their "bucket list."

3. Within the next month, >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.
 - 10/16/08 Pending; out by the end of ~~November~~ 1/5/09: February 2009.
 - 2/20/09: Bob Muth said he's making good progress on this and he'll have a draft to the Committee by ~~early March~~ end of April. 7/8: Mohrman and Chart expect to provide drafts of this and Price River report by the end of August 2009.
 - 9/21/09: Chart and Mohrman have made good progress on this, but other priorities have so far prevented completion.
 - 1/14/10: still pending
 - 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 ~~December 31, 2010~~ March 15, July 1, 2011.
 - Sent to BC July 1, 2011; on 9/30/11 webinar agenda.
4. **Program Director's office (Jana Mohrman and Tom Chart)** expect to provide a draft of the Price River report by the end of August 2009. 7/13/09: Dave Speas said the goal for the Narrows EIS is to get it out for public review in the fall, so the above schedule should work. The PD's office will keep the Service's SLC-ES shop in the loop on Price River.
 - 1/14/10: PD's office will continue to communicate with Reclamation re: Narrows.
 - 3/3/10: PD's office working with SLC-ES to determine how to move this forward.
 - 5/6/10: The Program Director's office will complete a position paper (or similar construct) on Price River endangered fish flow needs and submit it for Biology Committee review by September 1, 2010.
 - 12/12/10 Program Director's office will use the information currently available to >develop a position paper on Price River flow recommendations for Committee review. The Program Director's office will revise the draft Price River position paper and get it to the Biology Committee within the next week, with comments due a month later.
 - Price River position paper sent 12/30/10 with comments due Jan. 31/ 11. UDWR may submit a Price River PIT tag proposal for "activities to avoid jeopardy" funding.
 - 3/11/11: **Tom Chart** will respond to comments and revise the report (in consultation with the Service) and bring it back to the Committee by July 1, 2011.
 - 6/21/11: Sent to Biology Committee; on 7/12/11 agenda (7/12/11: review deferred to 9/30/11 at Tom Pitt's request).
5. Melissa believes an Environmental Assessment of the impacts of the humpback chub captivity management plan (also addresses how to deal with captured roundtail chub) will

need to be written; **Krissy** will work with **Melissa** on the EA.

- 7/13/10: **Melissa** needs to coordinate with the **NPS** if this is the case and she intends to do that in the next few weeks.
 - 10/6/10: **John Reber** reported that **Melissa Trammell** will do the EA for this.
 - 5/13/11: The **humpback chub genetics ad hoc group** will need to meet, then **Melissa** can prepare an EA. >**Harry Crockett** will check with **CDOW** to be sure the putative humpbacks at **Mumma** get moved to **Ouray NFH – Randlett** (will need an import permit from **Utah Dept. of Agriculture**). (**Krissy** noted that all states now require imports to have **AIS certification** (**Krissy** sent the criteria to the Committee on 7/7/11, as well as disease certification.) >**Dale Ryden** will also talk to **Dave Schnoor**.
6. 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** will provide the database for Westwater for Gary White to combine with **Black Rocks**, which will require a separate **SOW**.
- 10/6/10: **Travis Francis** said they plan to complete the reports, then revisit a **SOW** for assistance from **Gary White**. 3/10: pending.
 - 4/28/10: **Derek Elverud** has finished compiling the **Westwater** data to send to **Gary White**. **Travis Francis** is going to combine his **Black Rocks** data set with the **Westwater** data and his report (when he has time after he gets out of the field).
 - 5/13/11: Data have been transferred; **Program Director’s office** will check to make sure we’ve got this analysis covered.
7. The **Program Director’s office** will prepare a list of issues to be resolved regarding Tusher Wash screening (e.g., what levels of mortality are 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 Czapl**) 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.*
 - 11/23/10: Conference calls held 11/10 and 11/24 and scheduled for 12/2. 12/13 **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.
 - 1/24/11: **Dave Speas** will talk to **Reclamation’s Tech Center** about working on this (done).
 - 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 a list of 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. **Krissy Wilson** would like to participate in the site visit.

>**Tom Czapla** will schedule the site visit (and talk to Kevin McAbee to see if he can arrange for the group to tour the inside of the facility). The **Program Director's office** and **Reclamation** will discuss how to get the mortality study done after we determine the information needs and timeframe.

8. The **Service (GJ-CRFP and the Program Director's office)** will make recommendations for how/where to manage the fish spawned this year at the Grand Valley facility and bring those back to the Biology Committee.
 - 8/18/10: Will be discussed during the health condition profile meeting. The **Program Director's office** needs to schedule discussion//revision of the integrated stocking plan.
 - 9/30/10: >**The Program Director's office** will set up a work group for revising the propagation plan (Krissy and Michelle will assist).
 - 3/11/11 The Biology Committee directed Dave Schnoor to focus on size, not numbers, and not to try to harvest fish in the spring, since additional funds are not available.
 - 5/13/11: A meeting was held at Dexter and a summary will be out in the next few days. Results of the health condition profile meeting should be incorporated into the revised stocking plan. >**The Program Director's office** will convene a group to revise the integrated stocking plan (likely pretty much the same group to work on humpback chub genetics). 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. The **Program** needs to move forward with an **ad hoc group to revise the integrated stocking plan** and to evaluate our stocking program (include cost-benefit analyses). Travis would like to be involved in that group. Dale suggested also including Dave Schnoor. Scott Durst has done considerable work on this in the San Juan and might be helpful; >**Tom Chart** will talk to Dave Campbell about this. Tom Chart said he thinks the **Program Director's office** can initiate the cost-benefit analysis.
 - 6/2/11: Core group identified: Harry Crockett, CDOW; Krissy Wilson, UDWR; and Pete Cavalli, WFG; Dale Ryden and/or Dave Schnoor, USFWS; Dave Campbell and Scott Durst, San Juan Recovery Program; and input from hatchery managers as needed (particularly as it pertains to space at facilities).
9. 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 comments submitted; next BC discussion pending*.
10. **Sherm Hebein** will provide the Committee a copy of the output/report on CDOW's Gunnison River work (e.g., wherein they captured seven razorback last year in sampling half of the river) as soon as he receives it.
 - 8/18/10: **Sherm** will send to Angela this week to distribute to the Committee.
 - 5/13/11 >**Harry Crockett** has the report, will scan it, and send it to the Program Director's office and Travis Francis (for the database). 6/30/11: Is additional data needed for database (as of 5/19/11, Travis had not received data for the database). *DONE: see below*.
 - 6/2/11: *DONE: Harry sent Dan Kowalski's report on 2008 Gunnison river sampling, during which seven razorbacks and two bonytails were collected.*

11. **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)*.
 - 3/11/11: **Melissa** will talk to the Park about what they want to do with the chubs in captivity at Ouray and Mumma (likely return them to the river after acclimation) if the Program does not want to keep them. *Melissa suggested assessing morphology now that the fish have matured somewhat (Travis said he's seen the fish and they don't look like humpback to him). The Committee agreed to keep the fish in captivity for now.*
 - 6/21/11: Pending outcome of discussion by humpback chub genetics ad hoc group (7/12/11: Czapla convening).
12. **Dale Ryden** and **Dave Schnoor** will write up the Ouray hatchery needs (water source for Randlett and generator for Grand Valley) and submit this to the Program via Tom Czapla. **Dale** also will seek Service funding for these needs. 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 been exploring the idea of a generator for the Grand Valley unit, but hasn't come up with anything yet. Dale said the Service should have a more comprehensive idea about these things in a few months.*
 - 6/21/11: *Service-Reclamation meeting scheduled for late July.*
 - 7/6/11: *Dale e-mailed write-up (discussed briefly at 7/10-11 BC meeting).*
13. **Tom Czapla** and **Krissy Wilson** will develop recommendations for where and when to stock the Wahweap bonytail (e.g., floodplains before spawning) and send those to the Committee.
 - 5/4/11: *~6,780 bonytail were stocked at the Stirrup in early April 2011 (because movement will be detectable by the remote antennae).*
 - 5/13/11: *Krissy said they have an additional 13,000 fish that are not PIT-tagged yet that need to go out in the fall (and will convene a group to discuss where they should be stocked – may be discussed along with integrated stocking plan revisions).*
14. **The Service** will add to the contaminants annual report a review of and any recommended modifications to State and Federal hazardous materials spills emergency response programs.
 - 6/21/11 *Done (discussed in [annual contaminants report](#)).*
15. 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.
16. Northern pike synthesis – 5/13/11 **Harry Crockett** will let Billy Atkinson know it will be helpful to compare the recruitment information to Billy's tag records from above Hayden (Harry will ask Billy to make his data available to Kevin Bestgen and Koreen Zelasko).
17. Gunnison River Fish Community sampling – 5/13/11: the **Program Director's office** will coordinate between **CDO** and **FWS** to work out details of collaboration between the two

agencies on the Gunnison River adult monitoring in time for July sampling (and then get something back to the Biology Committee for approval). Dan Kowalski, Doug Osmundson, Dale Ryden, Harry Crockett, Sherm Hebein and John Alves (Sherm's counterpart in CDOW's Southwest region) will be involved in these discussions. **Harry Crockett** will talk with CDOW about what portion of work they can do. *7/10/11: CDOW has deferred to USFWS to conduct this work.*

18. The **Service's CRFP office** is working to salvage as many fish as possible from the soon-to-be-discontinued leased ponds this year. Analyses show fish stocked in the summer have the lowest survival rate, so the **Service** will recapture and stock the fish as soon as possible.
19. **Biology Committee members** will review the Research Framework recommendations in advance of reviewing the FY 12-13 work plan in July. The **Program Director's office** will revise the Research Framework report on the web include a "last updated on" statement and a caveat that clarifies that this was incomplete and was a "point in time" database and direct users to the Program's laserfiche library and Program website. They also will correct the wording at the bottom of the second page of the report that suggests it is a "review draft."
20. 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.*
21. **Krissy Wilson** will forward the Committee UDWR's plan for larval light trapping in Flaming Gorge Reservoir (looking for burbot) when she gets it.
22. The **Program Director's office** will make a recommendation regarding whether or not to password protect the PIT tag GIS site.
23. **Jana Mohrman** will parse the peak flow analysis into pre- and post-reservoir construction where applicable.
24. The **Program Director's office** will review indirect costs inconsistencies raised by UDWR and make a recommendation for how to address.
25. As the FY12-13 budget situation becomes more clear, the **Biology Committee** will review and prioritize current contingency projects and the passes that were cut from nonnative fish projects.
26. **Kevin Bestgen** will revise and finalize the floodplain synthesis report.
27. **Biology Committee members** will review Dave Speas handout summarizing Reclamation's questions about Flaming Gorge peak flow trigger with their Management Committee representatives in advance of the August Management Committee meeting.

SEE ALSO ASSIGNMENT RELATED TO SCOPES OF WORK WHICH ARE SHOWN IN ATTACHMENT 3 (IN GREEN TEXT IN THE COMMENTS COLUMNS)

Attachment 2

Springs flows captured with aerial photography throughout the Upper Colorado River basin; 2008 and 2011

River	Reach Photographed in 2011	Date Flown	Gage / Flow at time of flight; 2011 (specific timeframe)	Instant Peak flow recorded at this gage to date; 2011	Flow (avg daily) at this gage on day of flight; 2008
Gunnison	Delta to Colorado River Confluence	June 7, 2011 pm	Gunnison near GJct / 13,500 – 14,400 cfs (12:00 – 17:00)	15,100 cfs on June 8 @ 18:45	13,400 cfs on June 3, 2008
Colorado	Rifle to Loma	June 8, 2011, am	Colorado Stateline / 46,200 – 46,900 cfs (8:00 – noon)	47,200 cfs on June 8 @ 15:00	38,900 cfs on June 4, 2008
Yampa	Steamboat Springs to Maybell	June 8, 2011, pm	Yampa B'lo Craig / 16,000 – 16,400 (11:00 – 15:00)	16,400 cfs recorded during flight time	10,500 cfs on June 4, 2008
Elkhead Ck	EHR dam to Yampa River confluence	June 8, 2011, pm	Elkhead Ck at Craig / 1,640 cfs (@ 14:00)	2,180 cfs on June 7 @ 9:15	Not flown
White River	Lower 25 miles	June 8, 2011, pm	White near Watson / 4,550 – 4,600 cfs (15:00 – 17:00)	5,070 cfs on June 9 @ 11:45	Not Flown
Green River	Split Mtn to Sand Wash	June 9, 2011, am	Green near Jensen / 30,000 – 30,300 cfs (8:00 – 13:00)	33,100 cfs on June 11 @ 2:30	22,700 on June 5, 2008
Colorado	Scott Matheson Preserve, Moab	June 9, 2011, pm	Colorado near Cisco / 46,200 cfs (15:00)	46,600 cfs on June 9 @ 21:45	Not Flown

Attachment 3

PROJECT NUMBER	PROJECT TITLE	FY 2012			FY 2013	
		FY 2012 TOTAL	FY 2012 Contingency	FY 2012 COMMENTS	FY 2013 Cost	FY 2013 COMMENTS
I. Instream Flow Identification and Protection						
8	Recovery Program Gage O&M (budget includes #8a)	\$180,553		Plus \$60K USGS & other funds. Estimates from USGS a little higher than \$118,373 Pgm. Guidance	\$122,359	Plus \$60.6K USGS & other funds. Estimates from USGS a little higher than \$118,373 Pgm. Guidance
9	Water Right Acq. Consultant	\$10,000		Up to \$10K Section 7 funds		Up to \$10K Section 7 funds
19	Hydrology Support	\$155,949		Includes \$700.00 for GIS maint.	\$155,949	Includes \$700.00 for GIS maint.
19-GIS	GIS PIT Tag Database			See #19		See #19
70	Colorado Instream Flow Protection	\$20,000		Not Program funds, amounts TBD (est. ~\$20K). No SOW.		Not Program funds, amounts TBD (est. ~\$20K)
71	Colo. R. Decision Support Sys.	\$881,000		Not Program funds, amounts TBD		\$100K, not Program funds.
86	Geomorphology Peer Review	\$10,000		Up to \$10K Section 7 funds		Up to \$10K Section 7 funds
135	O&M for Ruedi Reservoir 10,825 af	\$34,856		Lower than \$36K Pgm Guid estimate	\$0	Only goes through 2012 per the 10,825 agreement. No O&M costs anticipated in 2013 and beyond.
156	<u>Aerial photography</u>	<u>\$20,000</u>		\$20K placeheld to georeference June 11 photos. BC: To stitch all 355 river miles of aerial photography will total \$36,625; to stitch and georeference would total \$79,875; to stitch, georeference, delineate high water line and quantify habitat would total \$97,625. <u>The PD's office is looking for funding partners.</u>		<u>Contingency: Gunn & Colo R. aerial photos in 2013 per Aspinal study plan. Bill G. says \$28-\$30K for imagery; \$84K for imagery + geo-referencing.</u>
C-9	O&M for Elkhead releases	\$73,791		FY12 and FY13 costs will be estimated after FY10 costs finalized. No SOW yet.	\$73,791	
C-9	Elkhead lease	\$0		Based on current 2011 snowpack and 500af carried from 2010 to be used in 2011, leasing additional Elkhead water in 2011 (which Program would pay for in 2012) is not currently anticipated.		<u>Cost TBD: up to \$100K if full 2000af leased in 2012.</u>
C-32	Ruedi Reservoir 10,825 af (capital cost)	\$735,000		\$735K credit (not Program funds). No SOW.		Only goes through 2012 per the 10,825 agreement.
C-34	OMID efficiency improvements	\$2,901,000		\$2,901K Cap \$ in 2012. SOW submitted.		\$12,619K Cap \$ in 2013. Reminder: need to build in \$100K for OMID O&M beginning in 2014.
FR	Evaluate Flow Recs					
FR-Sed Mon (85f)	<u>USGS sediment monitoring</u>		<u>\$75,000</u>	<u>~\$65.5 - ~\$84K contingency to monitor Gunnison River sediment. USGS rough estimate for traditional sediment gage, no acoustic equipment, and data report each year (assuming 15% DOI cost-share) ~\$65.5K; for acoustic equipment and interpretive report after 2nd year (assuming 40% match if funding is from a state agency like Wyoming, otherwise USGS portion will be 10-15%) ~\$84K.</u>		<u>~\$68.5 - ~\$67.5K contingency to monitor Gunnison River sediment. USGS rough estimate for traditional sediment gage, no acoustic equipment, and data report each year (assuming 15% DOI cost-share) ~\$68.5K; for acoustic equipment and interpretive report after 2nd year (assuming 40% match if funding is from a state agency like Wyoming, otherwise USGS portion will be 10-15%) ~\$67.5K.</u>
FR-BW SYNTH	Floodplain habitat vs. flow synthesis report	\$0			\$0	

New	White River Mgmt Plan & PBO	\$30,000		A White R. PBO would be similar to the Yampa, requiring a management plan then a PBO. CO roundtables may provide estimate of anticipated water development. A PBO would identify water development the Program can cover, but will need to determine mechanisms to meet flow recommendations (which will primarily describe current conditions, so PBO would address protecting existing flows). Proposed action for management plan remains uncertain and will require coordination with CO & UT. Placeholder of \$25K (\$7 funds) for contractor to prepare management plan and \$5K for assistance from FWS-ES. SOW still being developed.	\$15,000	Placeholder of \$25K (\$7 funds) for contractor to complete management plan and \$15K for FWS-Ecological Services to complete PBO.
FR-?	Green R. floodplain investigations	\$0	\$10,000	<u>10K contingency: Release and monitoring of marked larval razorback suckers at the mouth of single breach wetlands to determine a larval fish's ability to access these low flow sites (Vernal-CRFP sampling, LFL identification).</u>		<u>10K contingency: Release and monitoring of marked larval razorback suckers at the mouth of single breach wetlands to determine a larval fish's ability to access these low flow sites (Vernal-CRFP sampling, LFL identification).</u>
FR-NEW 2012	Evaluation of Green River flow and temperature recommendations			<u>Contingency (cost TBD): As per Green River Study Plan, PDO compiles (or contracts to compile) conclusions and recommendations from ongoing FR-Syntheses projects, BOR annual operations reports, and other related studies to provide an update / evaluation of anticipated effects and uncertainties associated with the Flaming Gorge flow and temperature recommendations. This falls under the 5-year review of the flow recommendations under the Green River Study Plan.</u>		
II. Habitat Restoration						
C-4bRed&GVP	Redlands Selective Fish Passage Oper. (FWS)	\$66,612			\$66,612	
4/29/2011	GVP Selective Fish Passage Oper. (FWS)	\$51,120			\$51,120	
C-4bGVPScreenEval	Eval fish condition below GVIC screen return	\$0		BC: This is being conducted in FY11. Dale noted that the punch plate approach turned out to be too expensive, so they will use a purse seine to direct fish, instead. Dale believes they will still meet the study objectives.	\$0	
C-5	Price-Stubb Fish Passage	\$6,000		No SOW submitted yet. BC: Dale Ryden noted that we don't currently have an O&M budget for the PIT tag array (often none is needed, but there may be occasional needs for repair, etc.). The BC also hasn't concluded the array will be left in place permanently.	\$6,000	No SOW submitted yet.
C-23	Grand Valley Project fish screen & passage O&M	\$42,000		No SOW submitted yet.	\$42,000	No SOW submitted yet.
C-28	<u>Tusher Wash diversion screen</u>			BC: OMID is the higher priority for capital funds for the next few years.		
New	<u>Tusher Wash mortality investigation</u>			<u>Costs, methods TBD. This may be an appropriate use for Section 7 funds.</u>		
C-29	GVIC fish screen & passage O&M	\$66,000		No SOW submitted yet.	\$66,000	No SOW submitted yet.
C-29a	Canal salvage contingency	\$30,094			\$30,094	

116/C-33	Redlands screen, passage & gage O&M	\$80,000		No SOW submitted yet.	\$80,000	No SOW submitted yet.
146	Maybell Ditch PIT tag array	\$6,718		Costs increased over projected. See FY10-11 SOW.	\$0	
C-6	Floodplain Restoration Program					
EASEMENT	Easement & weeds mgmt.	\$65,000		Plus \$15K non-Program FWS funding. BC: SOW contains no description of weed management. >PD's office will contact Dan Schadd to add a description of weed management activities.	\$50,000	Plus \$15K non-Program FWS funding
HYD	Hydrology/geomorphology	\$5,000		Also, additional capital expenditure for water control structure at Thunder Ranch? No SOW yet.	\$5,000	No SOW yet.
RZ-RECR	Eval. survival of young and movement of subadult RZB from floodplains into the mainstem.	\$6,200	\$14,575	<u>Pgm Guid only mentioned \$6.2K contingency: continue operation of remote PIT-tag detection at Stirrup (no fish monitoring or pumping in the fall). SOW submitted for \$20,775. >PD's office discussing with UDWR. BC: Krissy reported that they've had over 20,000 hits, 1200 individuals at the Stirrup this year. PD recommends maintaining the antenna (\$6,200); BC will make recommendations for pumping and fish community work after review of final report. Krissy cautioned that bonytail may remain in the site that could potentially be lost if we don't pump water into the Stirrup in the fall (however, it's also possible that enough water will remain after the high flows to overwinter the fish). >PD's office will send most recent SOW to BC.</u>		<u>Pgm Guid only mentioned \$6.2K contingency: continue operation of remote PIT-tag detection at Stirrup. SOW submitted for \$20,775. >PD's office discussing with UDWR.</u>
NEW 2012	<u>Selenium toxicity in razorback sucker</u>			<u>Costs unknown at this time; seek outside funding. BC: PD's office included this in list of potential projects for funding through TNC.</u>		<u>Costs unknown at this time; seek outside funding.</u>
C-6 OLDCHARLEY	Old Charley			\$17,119 unsolicited SOW to document and help naturally spawned razorback suckers enter the wetland, and recruit to adults. (If razorbacks not detected, remaining funding would be returned to the Recovery Program). BC: The Committee was particularly interested in learning if razorbacks entered Old Charley in the 2011 high flows; cover this portion under FY11 fall floodplain monitoring (see Baeser). Keep remaining work as contingency; >After field season slows down (October or November), PI to revise to eliminate rotenone portion, since that's a moot point after FY11 high flows.		\$31,897 unsolicited SOW to document and help naturally spawned razorback suckers enter the wetland, and recruit to adults.
III. Reduce Nonnative Fish & Sportfish Impacts						
98a	Middle Yampa smb & pike management	\$171,934		Doesn't include 2011 expanded surge. BC: >Sherm will have Boyd take the \$2,300 for PIT tags out for FY12 & 13 (PIT tags are purchased by BOR and distributed by Travis Francis in GJ). Revise to generalize electrofishing unit (might be ETS, not GPP).	\$171,934	Doesn't include 2011 expanded surge.
98b	Upper Yampa pike management	\$163,984		Tagged pike no longer being released in this reach for population estimate.	\$163,984	
110	Lower Yampa bass and catfish management	\$103,330		Reduced passes & budget by 20%	\$103,330	Reduced passes & budget by 20%

123a	Green River bass management	\$150,780		Reduced passes & budget by 20%. Pgm Guid projected \$149,591. Sampling reduced to ten passes in this reach – may become unlikely to achieve 65% exploitation for SMB > 150 mm. Should collect otoliths from key predator species for microchemical archive/analysis of their provenance.	\$150,780	Reduced passes & budget by 20%. Pgm Guid projected \$149,591
123b	Green River bass management	\$160,118		Reduced passes & budget by 20%. Consider removing carp as well for potential suppression as in SJR? Investigate size at maturity for white sucker – funds would be required for aging of fin rays. Biannual purchase of electrofisher/generator (ETS MBS-1D). BC: >PI will strike the last sentence under Sampling on page 3, it's confusing.	\$169,118	Reduced passes & budget by 20%. Budget higher than Pgm Guid because a new electrofishing system is purchased every other year to replace faulty equipment and allow rotation of electrofishing equipment and generators to reduce the amount of wear and tear. MBS-1D Electrofishers (ETS Electrofishing, LLC) will be purchased rather than Smith-Root 5.0 GPP electrofishers to reduce costs for the electrofishing control box and generator.
125	Middle Yampa River smallmouth bass and pike management.	\$294,979		All SMB captured to be euthanized. Includes "Surge" costs for USFWS –Grand Junction and Vernal. No "extended surge" in 2012-2013 due to lack of funds. BC: >Hawkins to clarify that task #6 entails field work, etc, make sure that both FWS-GJ and FWS-Vernal budget detail is appended to this SOW.	\$294,979	Doesn't include 2011 expanded surge.
126	Colorado River smallmouth bass removal	\$125,760		Reduced passes & budget by 20%. In 2011, will reallocate sampling effort from upstream to add 2 additional removal passes in Grand Valley. Due to 2012-2013 funding constraints only 15-mile and 18-mile reaches will be sampled, passes will be reduced from 10 to 5, and USFWS will perform all sampling as the 2 CDOW passes in high concentration areas were eliminated. Excellent use of SMB CPUE to identify priority SMB concentration areas for 2012-2013 sampling. BC: Tom Chart asked about apparent reduction of 10 passes with 2 boats to 5 passes with one boat (which seems a 50% reduction rather than a 20% reduction) (discussed under Sampling Protocol on pages 6-7). >Dale will check into this and also find out if white suckers are being removed.	\$125,760	Reduced passes & budget by 20%
126b	CDOW assistance	\$0		Discontinue	\$0	Discontinue
140	Yampa fish response to nna mgmt	\$85,976		BC: Annual reporting likely adequate; therefore, didn't include contingency for \$24,859 for synthesis report in 2012.	\$85,976	
144	Green R. fish response to nna mgmt	\$0			\$0	
	Colorado R. fish community response			BC: Lori has been collecting information, but not written up yet. Now this work will be incorporated in the Aspinall monitoring scope of work.	\$0	
154	Duchesne R. NNA fish mgmt.			Funded by Ute Tribe.		Funded by Ute Tribe.
157	Weir (Duchesne)				\$0	
158	Green R backwater nna removal	\$0		BC 3/2/11: Pilot work should provide the necessary info by 2012 (final report prep costs included in FY 11 SOW); defer implementation.	\$0	

161	Programmatic synthesis of smallmouth bass removal			\$31,931 project completion costs obligated in FY11. Incorporation of 2009 and 2010 SMB removal data added to this scope @ \$60,000. Excellent literature review of propensity of SMB male nest abandonment due to capture or environmental disturbance. Ongoing analysis of Elkhead Reservoir escapement.		
161b	Programmatic synthesis of Yampa R northern pike population abundance and dynamics	\$60,000		Use NOP removal database through 2010 to emulate SMB population dynamics/immigration/environmental/removal effects. BC: >PI to make task descriptions consistent between pages 6 and 8.	\$10,000	\$10K for completion of northern pike synthesis (not anticipated in Pgm Guid).
C-18-19	Reservoir sources of nna fish	\$0		PD's office will develop protocol for preserving nonnative fish to determine their provenance and set up <u>mechanism for ongoing isotope analysis (contingency funds)</u> . BC: >PI to add line to SOW for final report in FY12 (project completion costs obligated in FY 11).		
C-20	Highline Net O&M	\$110,000		Replace net in 2012 or 2013 (see 2007 cost) AK note: SOW & bid is for \$90K net replacement. Does CDOP maintenance portion cover installation or will that be in 2013 (SOW doesn't address 2013)? BC: Pat asked about continuing fin-clipping nonnative fish stocked into Highline assist in monitoring. Sherm said there is natural reproduction of crappie and largemouth bass in Highline, so stocking is going to be reduced. Lori is doing annual sampling of Salt and Mack washes and isn't finding much. Sherm said this SOW will get revised based on the agency merger; >CDOW will add an explanation about stocked fish, etc., to the SOW. Sherm asked about Roots Reservoir downstream; Patty Gelatt informed us that it is not on the mainstem Mack Wash, It does have an engineered screen (3/32") that can handle a 100 year event. It traps fish within the tributary drainage, but not fish in mainstem Mack Wash. The tributary flows into Mack Wash downstream of Highline Reservoir. It is not a substitute for a screen at Highline Lake.		
FR-115	Effects of Flaming Gorge releases on Lodore/Whirlpool Canyon fish comm.	\$103,400		Includes \$19K for smallmouth bass otolith analysis summary, 2003-2010, Green and Yampa rivers. In spite of increases, have maintained salary costs for FY2012-2013 which will have to be absorbed elsewhere. This is not sustainable and an increase will be sought in the future when budgets are not as restricted, or tasks will be reduced. BC: >PD's office to get back to Program with cost of summarizing Yampa and Green R effects of environmental conditions on smallmouth bass early life history (otolith data).	\$84,400	Plus contingency: add \$34,667 for synth report in 2013 (Green & Yampa otolith piece as the highest priority; consider starting this in 2012).

	Upper Yampa R. nonnative fish habitat research			BC: Sherm said CDOW is doing additional work on public areas of Yampa River above Steamboat and all will be treated over next 5 years so pike have no slackwater habitat there. Sherm added that the northern pike population in Catamount appears to have crashed. After the nonnative fish strategy is completed, CDOW may write up a brief SOW for this work and the Program will credit Colorado's additional financial contribution to this work in the budget pie chart in the annual <i>Program Highlights</i> briefing book.		
2012-2013 New	<u>Trophic stable isotope analyses to assess aquatic invasive species food web/contaminant impacts</u>			<u>Program Director's office recommends supporting work outside the Program to implement pilot trophic stable isotope analyses (tissue sampling). A massive shift in energy flow away from native species to invasive species (e.g., crayfish and smallmouth bass) is suspected (if validated, this would support the need to prevent similar ecological impacts in other parts of the basin). Part of this work should include exploring role of crayfish in mobilizing mercury into the food web (which may have negative implications for endangered fish reproduction).</u>	\$0	
IV. Propagation & Genetics Management						
29	O&M Propagation Facilities					
29a	Grand Valley	\$511,316		BC: Any additional O&M costs once ponds come online (for both Upper Colorado and San Juan programs?)	\$508,816	BC: Any additional O&M costs once ponds come online (for both Upper Colorado and San Juan programs?)
29b	Ouray	\$503,963		SOW pending. >PDs office will get SOW on web this week.	\$501,734	SOW pending.
	Ouray well-field development/repair	\$6,050		SOW pending. >PDs office will get SOW on web this week.	\$6,600	SOW pending.
29c	Wahweap	\$200,000		BC: Krissy said one well has had some issues and they're now only able to get water from the other; they are working on repairs and currently anticipate being able to cover the costs.	\$200,000	
29d	Mumma native species hatchery	\$81,900		BC: >Tom Czaplak will work with Harry Crockett to get additional budget detail added to the SOW.	\$81,900	
	Hatchery O&M contingency				\$0	
C-7	Propagation Facilities & Equipment					
PONDS	Growout pond construction	\$2,797,000		Horse Thief rearing ponds \$2,797K Cap \$ in FY12. BC: Utah will need more information about the infiltration gallery for disease certification; >Dale Ryden will ask Dave Schnoor and Reclamation folks discuss this with Krissy. >Tom Czaplak will add this to the agenda for the hatchery meeting later this month (and talk to Krissy about who else to invite). Sherm recommended inviting Carolyn Gunn (Colorado pathologist), as well.		
TAGS	PIT tags & related equipment	\$170,000		PIT tag purchases over FY08-11 avg. \$170K/yr. No SOW yet. BC: Dave Speas said they are in the bid/contracting process.	\$170,000	No SOW.
151	Collect & maintain Gila @ Ouray NFH	\$0		BC to determine fate of captive Gila; if remain @ hatcheries, becomes part of O&M. Probably can cover for FY 12.	\$0	BC to determine fate of captive Gila; if remain @ hatcheries, becomes part of O&M.

C-6 BAESER	Baeser Bend	\$19,946		Resume stocking in 2012 after 2011 reset. Pumping costs in 2012.	\$34,989	Pumping and recovery costs in 2013.
V. Research, Monitoring & Data Management						
15	Larval Fish Lab Identification	\$116,679		BC: Funds to process Middle Green backwater samples (\$23K) not needed; but >Kevin will determine if additional funds are needed for light-trap sample processing in 22f after sampling year is complete. Kevin also will add sample processing for Gunnison R. fish community project (see implement larval portion of razorback monitoring plan).	\$116,679	
16	Database Management	\$60,846		>Dale Ryden will provide a short narrative description of the database contents.	\$60,846	
22f	Yampa & middle Green CPM & RBS larval survey	\$130,498		Is funding adequate to cover sample analysis? (BC: see #15) Increased from \$129.5K Pgm Guid.	\$130,498	
127	Upper Colo. R. CPM est.	\$0			\$208,620	Increased FY 08 amount by 08->09 CPI. Pgm Guid was \$171.2K. FWS says need to increase budget to 2010 level + ~\$4K. BC: >PI to ask Gary White how PIT tag hits at Price-Stubbs may add to this dataset (already incorporating data from pikeminnow caught in nonnative fish sampling).
128	Green R. CPM est.	\$406,998		BC 3/2/11: Perhaps SMB removed as part of this minimum 3-pass per reach effort could replace some passes removed from nnf SOWs; however, this would not be factored into CPUE, so would affect synthesis. 4/11: Need to increase FWS-Vernal budget by \$20,322; can't do 3 passes at \$126,934 FY11 level. Therefore, SOW budget is higher than \$391,165 program guidance suggested, and includes the increased budget figures from various parties as recommended by T. Chart. LFL budget reduced by \$7,350/yr to reflect efficiencies in data processing (improvements from field stations) and efficiencies. BC: >Kevin B. will add other agency authors; also delete note under item #1.	\$404,124	LFL additional funding in 2014 to complete analysis & summary report (prelim. figure of \$47K)
129	HBC pop est in Deso/Grey	\$0		Deso/Gray HBC est. resumes in 2014.	\$0	Deso/Gray HBC est. resumes in 2014.
130	HBC in Cataract	\$0		BC 3/2/11: Suggest drop back to every-other-year CPE and don't conduct in FY12. BC: >PI to correct "bonytail chub" to bonytail (e.g., in "humpback chub and bonytail monitoring...")	\$30,607	Cataract Canyon humpback monitoring: Schedule was changed to every other year with 2012 being the first off year.
131	HBC in Black Rocks	\$50,340		Budget est. made comparable to FY09. BC: Discussed YOY monitoring in Black Rocks and Westwater (e.g., seining, electrofishing, etc. in 2012 within existing budget >Darek, Paul, Melissa, and DSpeas agreed to follow up). Contains \$5K for start on combined analysis (by Gary White via LFL). More extensive analysis would require additional funding, TBD.	\$44,936	Pgm Guid (incorrectly) didn't anticipate FY13 costs.
132	HBC in Westwater	\$87,698		SOW amounts do not align with \$53,876 in program guidance, however it was noted that P.G. projections did not account for funding for each years work being split between two fiscal years annually which therefore extends funding into FY 13 for work to be completed in October of 2012. BC: YOY discussion - Utah does get some YOY info through electrofishing; see discussion under 131 re: YOY sampling.	\$41,497	

138	Green R. YOY CPM monitoring	\$53,659		BC: Methods unclear (re: incorporating native fish response previously in #144). >PI will revise to better describe analytical methods for objective #2 (and revise objective to evaluate the feasibility of using these data to evaluate native fish response).	\$53,659	
147	Standardize electrofishing fleet	\$12,000		BC: Up to \$12K Section 7 funds to continue standardization; >SOW to be updated.		
<i>New</i>	<i>RBS remote sensing near GR spawning bar</i>			BC: PD's office included this in list of potential projects for funding through TNC. Will need more brainstorming.		
160	Lower Green larval, juv RBS monitoring pilot study	\$27,215		Could become part of larger razorback monitoring plan.	\$27,215	Could become part of larger razorback monitoring plan.
<i>New</i>	<i>Implement larval portion of RBS monitoring plan</i>	<i>\$30,000</i>		<i>Pending outcome of razorback monitoring plan (also involves work under 22f & 160). BC: Gunnison R. fish community monitoring has a larval component (but no funds for processing until third year), so for the time being, some of these funds probably should be added to #15 and directed toward sample processing.</i>	<i>\$30,000</i>	<i>Pending outcome of razorback monitoring plan (also involves work under 22f & 160)</i>
<i>New</i>	<i>Bonytail monitoring plan</i>					
2012-2013 New	Gunnison R fish community monitoring	\$78,800		Placeholder from draft Aspinall study plan; pending final SOW revision and Program approval. Draft SOW has \$78.8K for FY 12. >Dale will get SOW finalized (including tying to environmental conditions).	\$75,000	Placeholder from draft Aspinall study plan; pending SOW and Program approval. Draft SOW has \$193.5K for FY 13.

Attachment 4

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06/22/2011 04:15 PM

To <sjrp-biology-comments@fws.gov>
"Tom Chart" <Tom_Chart@fws.gov>, "Tom Czapla"
<Tom_Czapla@fws.gov>, "George Blommer"
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cc <KRISSEWILSON@utah.gov>, "Paul Birdsey"
<PAULBIRDSEY@utah.gov>, "Sarrajones" <sarrajones@utah.gov>,
"Wayne Gustaveson" <waynegustaveson@utah.gov>
Subj Update on the Lake Powell Razorback Sucker Survey
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Hello Everyone,

I just wanted to give everyone an update on the Lake Powell razorback sucker survey. Field work was completed June 16th. In total, crews captured 75 individual razorback sucker. One of the 75 razorbacks was also captured during two separate sampling trips. Total length of razorback suckers captured ranged from 429-619 mm.

Twenty-seven (36%) of the 75 razorback sucker did not have a PIT tag when captured. In 2010, approximately 12% of the razorback suckers captured in the San Juan River above the waterfall did not have a PIT tag. The following is the number of razorbacks captured with a PIT tag and the year they were stocked in the San Juan River near Shiprock, NM: 1 - 1994, 1-1995, 1 – 2001, 1 – 2002, 14 – 2004, 3 – 2005, 4 – 2006, 16 – 2007, 1 - 2008, 1 – 2009. Three additional razorbacks were also captured in Lake Powell that had been collected and PIT tagged in the San Juan River upstream of the waterfall.

Fin clips were collected on 26 razorback suckers (17 from razorbacks without PIT tags and 9 from razorback containing a PIT tag at the time of capture). Two razorback/flannelmouth sucker hybrids were also captured and fin clipped.

In addition to the razorback suckers captured, 24 Colorado pikeminnow and 105 flannelmouth sucker were also captured. Fifty percent of the Colorado pikeminnow did not have a PIT tag when captured. Colorado pikeminnow total length ranged from 228 – 519 mm. The 24 Colorado pikeminnow includes 4 adults (>450mm). The total length of flannelmouth suckers captured ranged from 220-510 mm.

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