



Upper Colorado River Endangered Fish Recovery Program

Dated: January 14, 2015

August 25, 2014, Management Committee Meeting Summary (Final) Radisson Denver Southeast, Denver, Colorado

Participants: See Attachment 1

CONVENE: 10:00 a.m.

1. Approve [June 13, 2014, draft meeting summary](#) – The draft summary was posted to the fws-coloriver listserv by Angela Kantola on June 16, 2014. No comments were received; the Committee approved the summary as written.
2. Sufficient progress memo, Yampa PBO status review, and strategic communications plan, update and review of nonnative fish and sufficient progress action items – Following Program review of draft elements of the sufficient progress memo, the Service held their annual sufficient progress assessment webinar on July 28. A final draft sufficient progress memo, Yampa PBO status review, and communications plan will be sent to the Management Committee primarily for informational purposes with a request that Committee members notify the Service if they have any significant issues/concerns. Tom Chart summarized the conclusions of the draft memo wherein the Service recommends recovery actions in the following areas should receive greater attention in the coming year: 1) nonnative fish management (sending a clear, coordinated, basin-wide message conveying a zero-tolerance stance on the worst-of-the-worst nonnative predators [burbot, walleye, northern pike, and smallmouth bass] via basinwide “must kill” regulations, replacing the tagging study at Stagecoach Reservoir with a removal effort); 2) flow management (White River Management Plan and Green River flow protection); and 3) reducing endangered fish entrainment in irrigation canals. Language regarding the Program’s continued ESA compliance for existing projects is in the footnote on page 35, as in past memos.

Nonnative fish: Tom Chart said Colorado has yet to find any must-kill regulation acceptable to law enforcement, so we need to continue to work with them on this. Colorado has asked for peer-reviewed justification for must-kill that they can take to the Commission; however, must-kill is less about direct scientific links between a regulation and nonnative fish population reductions and more about the social impact of broad, consistent messaging. Henry said studies have been done illustrating the psychological/social impacts of fishing regulations. Melissa Trammell wondered how Colorado views Utah and Wyoming’s bases for their must-kill regulations. Tom Chart said Greg Gerlich is putting together a task force to consider a pilot area where must-kill regulations could be considered. Kevin suggested perhaps describing how must-kill is working in Utah and Wyoming also could serve as a type of pilot. Tom Chart said he understands Colorado is interested in incentivized harvest. He has concerns that if incentivized harvest is not coupled with a must-kill regulation, we could send the wrong message with respect to illegally-stocked fisheries. Michelle Garrison said Colorado’s law enforcement folks don’t believe must-kill will work or can be enforced. Tom Pitts asked how the Service will proceed; Tom Chart said Regional Director, Noreen Walsh and Assistant Regional Director, Mike Thabault have been working to schedule a meeting with CPW Director Bob Broscheid. Tom Chart recognized that some Program partners have initiated similar conversations with the State agency and departmental directorate, which seems prudent. We need to elevate the discussion from a regional to a statewide forum in Colorado. Management Committee members agreed with the Service’s position in the memo that promoted northern

pike removal from Stagecoach Reservoir. CPW believes that mechanical control must be coupled with reservoir level manipulation (to disadvantage pike spawning) to have a reasonable chance of success. Henry Maddux noted that researchers at Utah Lake have thought the same; however, even during periods of extremely low lake levels northern pike have spawned successfully. He cautioned that reservoir drawdown may not solve the problem. Tom Pitts said the delay in downlisting of Colorado pikeminnow due to nonnative impacts is very serious. In about two years, non-Federal Program participants will be going back to Congress to extend annual funding legislation (which sunsets in 2019). After 25+ years and \$~400 million spent by both Programs, Congress is expected to ask very serious questions about our progress. Therefore, we *have* to solve this nonnative fish problem. Leslie added that passage of the ESA bill by the House earlier this year increases this pressure (in late July, the House passed the Endangered Species Transparency and Reasonableness Act, H.R. 4315, which bundled four bills introduced by members of the House Natural Resources Committee that seek to change various aspects of the ESA). Bridget agreed it would be good to see success in the form of downlisting, but also recommended highlighting other metrics of success (e.g., no Klamath or Delta Smelt situation, continued water development and economic growth, etc.). Henry agreed these are important metrics for our delegations, but the difficulty is convincing folks outside of our States' delegations.

Flow protection: Henry mentioned that Utah has an internal meeting on Green River flow protection scheduled next week.

Fish screens: Tom Chart mentioned the Program's commitment to solve the entrainment of fish at the Green River Canal in Green River, Utah. Brent Uilenberg thinks some upgrades can be made at GVIC to make it operate more effectively. Weekly HUP calls have been very helpful in discussing operational issues. Henry suggested we might want to add upgrading GVIC to the RIPRAP next year. John Shields asked if we have sufficient funds within authorized capital funds for this and Brent Uilenberg said yes.

3. Updates

- a. Proposal to meet with oil/gas/mining Directors for Colorado, Utah, and Wyoming— Tom Chart said the Program Director's office is working to schedule a meeting between the State Directors, the Program Director's office and the Service to discuss strategies for oil and gas development in and near endangered fish habitat. Interested Management Committee members may attend if they wish. Steve Wolff said Mark Watson is very agreeable to the meeting, but isn't sure he can make September 11. If the 11th doesn't work, another time might be to consider something on October 3 (after the October 2 Implementation Committee). (Michelle noted that there's now a joint meeting of CWCB and CPW on September 11 in Glenwood Springs and the Recovery Program is on the agenda). >The States will check to see if they could meet on Friday, October 3.
- b. Recovery plans – Tom Czaplá gave an update on the status of the Colorado Pikeminnow Recovery Plan. The most recent meeting with Service and Recovery Team was held in early June. A revised draft was sent to the meeting participants for comments (with comments due to the Program Director's office today). We hope to send the next draft to recovery program participants for review and comment as early as mid-September. Once Program participants' comments are addressed, the next step will be publishing availability of the draft in the Federal Register. The Committee discussed *how* Program comments will be received and agreed that one set of comments from each Program participant, filtered through their Management Committee member, is appropriate (as per the 2002 review process, unified comments from individual technical committees will not be requested). Tom Czaplá asked how long the Management Committee would like to have to review the draft and the Committee agreed a six-week review period would be adequate. With regard to progress to convene a team for the Humpback Chub Recovery Plan revision, Tom Czaplá said invitation letters have been drafted and should be sent out shortly. There will be a team leader and an agency leader, with three

subgroups: a writing subgroup, a scientific advisory subgroup, and an implementation subgroup. Clayton Palmer said Western appreciates the addition of the implementation subgroup. Bridget said the Service is working to streamline the recovery planning process nationally to make it more focused on requirements of the ESA, so the format of the Humpback Chub Recovery Plan may be somewhat different. The Service wants to retain flexibility needed to achieve recovery by the best paths that evolve as recovery actions are implemented, rather than being tied to a very specific set of actions identified in a recovery plan. Clayton said Western also is interested in seeing the Humpback Chub Recovery Plan completed quickly (so that what needs to be accomplished in the lower basin is clear before Region 2 writes the Glen Canyon biological opinion). Therefore, Western hopes this streamlined recovery planning process will help speed completing the revised Humpback Chub Recovery Plan. Leslie asked if Bridget thinks proposed changes to critical habitat regulations will affect recovery plans, and Bridget said she didn't think so but would give that more thought. Many of those changes apply to future listings and some will apply to existing listings, but, for example, the proposed definition of "adverse modification" matches how we already do business. Tom Pitts asked about recovery plans for razorback sucker and bonytail; Tom Chart said the Service doesn't believe there's enough new information to warrant revision of those plans/goals at this time. Clayton asked about updating time and cost estimates; Tom Chart said that the updates to Colorado pikeminnow and humpback chub plans largely will address this. Bridget agreed that the focus should remain on implementing recovery actions at this time; recovery plan revision for these species could wait.

c. Hydrology / Water Acquisition Committee

- (i) White River Management Plan contracting – Michelle Garrison said Colorado completed the move to their new accounting system and can begin contracting again, so they will be working on this in the next week or two. AMEC Consulting is still interested in the work (although busy through October on Basin Implementation Plan modeling). Colorado may need to employ a competitive bidding process (and if so, will request review team participation from the Program Director's office). The Basin Implementation Plan process will greatly inform the Management Plan.
- (ii) Drought contingency planning – Michelle said the Upper Basin States continue to work on drought contingency planning. The Program would be most affected by the potential scenario of large water releases from the upper basin reservoirs (especially Flaming Gorge) to maintain the minimum power pool in Lake Powell. Participants in this planning are reviewing flexibility in the RODs on Flaming Gorge, Aspinall, and Navajo for such releases. Modeling is underway and the States should have a handle on what might work by the end of the year and then will share that with Interior. The States' plan also will include other augmentation methods, including winter cloud-seeding and deficit irrigation or fallowing (demand management). Lower Basin states are developing a demand management plan. Tom Pitts asked if Program funding would be affected if Lake Powell goes below minimum power pool; Clayton said it would. Dry conditions to that extent are rare and improbable, but, if they happen, catastrophic. Just a little augmentation could reduce the probability of going below minimum power pool significantly. One question being considered is at what threshold a crisis would be declared and the contingency plan implemented. Tom asked if part of the contingency planning includes alternative funding; Clayton Palmer noted that the Programs' legislation says Reclamation and Western are supposed to seek appropriations in that case, but it would have to be a supplemental request. The Committee discussed other scenarios with the Basin Fund under which Program funding could be affected. Patrick McCarthy asked if Program participants should alert Congress to these possibilities during this year's briefing trip. Henry Maddux and others suggested it would be good to inform them about the possibility (and share language from the

resolutions being circulated by our partners). Patrick suggested we consider whether we would want to make this part of larger drought-related legislation.

- (iii) Green River flow protection – James Greer reviewed Utah’s GRUWAT work on flow protection, which is focused on quantifying flows that may be needed beyond Compact deliveries to meet Program flow recommendations. Utah has developed a water model in collaboration with Reclamation, The Nature Conservancy, and the Fish and Wildlife Service. The model is complete and they are analyzing results to determine how much water to protect. Preliminary results are anticipated soon, and then they will begin developing solutions and working to obtain additional authorities to protect flows (2015-2016), followed by implementing that protection, consistent with the current schedule in the RIPRAP. James is scheduling another GRUWAT meeting soon.
- (iv) 2014 hydrology and fish water – Jana Mohrman showed comparisons of 2013 and 2014 hydrology (2014 was much wetter in the upper Green, Colorado, Yampa and White rivers, but not so much so in the Duchesne and Price), 2014 peak flows, and average monthly base flows. Shown in Attachment 3 are 2014 and 2013 comparative hydrologies, 2014 peak flows, Flaming Gorge spring operations, and Green and Colorado 2014 base flows compared with flow targets.

Peak flow study plan – Patrick asked how the study plan, once approved, will be translated into scopes of work. Tom Chart said it will depend on available funding, but the plan is to develop proposed scopes of work to answer the highest priority questions. We would develop Program guidance, request scopes of work, submit those for technical committee review, and then seek Management Committee approval. Tom Pitts said water users remain concerned about the objectives and timeframe described in this plan. To delist the endangered fish, we must legally protect flows, for which we need technically valid flow recommendations. A 5+ year study plan is too long for what we’re trying to achieve with downlisting and delisting. The executive summary says “in addition to annual review, a synthesis report would be developed after the first 5 years of the study...” However, the point is to revise the flow recommendations, if necessary, and to develop the basis for legal protection of flows. Tom Chart said this panel of experts has identified these as the most important questions to answer in order to validate the peak flow recommendations. Tom Pitts asked about the relationship between this draft plan and the Aspinall Study Plan. Tom Chart said he thinks this draft study plan builds on the uncertainties identified in the Flaming Gorge and Aspinall study plans. Tom Pitts suggested we consider these things from the “other end of the telescope,” and determine what recovery looks like as it relates to flows. Tom suggested recovery may not look very different from what we’re doing now. Bridget and others agreed that’s a reasonable assumption, in light, for example of ongoing O&M, continued monitoring, ability to respond to nonnative fish concerns, etc. The group agreed that we do need to have a discussion about what recovery looks like. With regard to the draft study plan, Brent asked if we first need to determine the minimum information needed for the States to protect peak flows. Jana noted that protecting peak flows will be new for the States; the traditional focus has been on establishing minimum instream flows, i.e. protecting base flows. Jana noted that a peak instream flow is being pursued on the Dolores River. Brent suggested we might consider separating securing interim legal flow protection from identifying what’s needed to optimize flows for the fish. Tom Chart observed that this study plan looks specifically at what we need to know to determine if current flow recommendations are doing what we said the fish needed in terms of physical habitat parameters. Tom said the Committee has raised good questions that the Biology and Water Acquisition committees will need to consider as they discuss the draft plan.

d. Capital projects

- OMID – Brent said Reclamation is about to award the regulating reservoir construction contract. The Safety of Dams review process resulted in a more expensive project (that's impossible to over-top), but Brent anticipates being able to make up the difference elsewhere. The reservoir should be completed late summer 2015. That will be followed by a series of small projects, to be completed in late FY16, assuming available funds.
- Tusher Wash – Kevin McAbee described the plan to incorporate PIT antennas into the diversion rebuild (see Attachment 4). These will be a big help to the Recovery Program's monitoring efforts. Costs for these systems continue to drop, fortunately, and NRCS has agreed to the proposal (paying 75%). The Recovery Program share would be \$53,213. If capital funds are an acceptable cost-share, then Federal capital appropriations would be an appropriate source. If not, we could consider using NFWF Section 7 funds as a contingency. The Committee supported the plan and will be kept informed about the funding source. Brent said he believes the Department of Agriculture (NRCS) portion will move ahead over 2015-2016. For screening (Recovery Program's responsibility), we are considering a barrier below where the hydroelectric water is diverted (accepting, at least temporarily, any fish lost to the hydroelectric diversion). The barrier will be similar to that on the Hogback Diversion. We also may contract with Smith-Root to look at the potential effectiveness of an electrical barrier on the weir wall. We're likely a year or more out from implementing a permanent entrainment solution. Kevin noted that the Biology Committee will discuss salvage operations in the canal for this fall (and next).
- Stewart Lake gate repair (see Attachment 5) – This is an emergency repair we need to complete before 2015 LTSP operations. The lake is filled through the outlet channel, so it's basically being operated in reverse (opposite of the intended design). The gate was damaged this spring and Reclamation will replace it this winter (cost not yet known). As Stewart Lake is a strong razorback sucker success story, it is vital that we repair it. Reclamation and UDWR will make a site visit on September 29.
- Others (e.g., San Juan Program, etc.) – Brent said we're finding we have rehabilitation needs at a number of our facilities: The GVP ladder is developing a large sedimentation bar (similar to PNM on the San Juan). A likely, cost-effective solution at PNM would be "river vanes," driving sheet pile at an angle to the current to keep the sediment in suspension. This may also work at GVP (likely will use NFWF capital funds to hire the contractor [$<$ \$10K] to advise on this solution – the Committee approved this expenditure). GVIC has some design features that need to be changed. Reclamation also needs to do some channel maintenance work at Horsethief Canyon. Brent will investigate outside funds for the channel maintenance (a la Wahweap). If Tusher Wash can be solved for \$2–\$2.5M, we'll have ~\$16M uncommitted capital funds. Tom Pitts suggested that we consider asking Congress for additional capital authority based on the value of our existing capital structures. In addition, Brent has been discussing nonnative concerns at Ridgway and Elkhead, and some very expensive structural solutions are being discussed as part of the potential solutions at those reservoirs. Tom Chart said CPW believes that we need to consider structural solutions (screens) at locations like Elkhead and Ridgway that are too hard to treat and/or could be re-inoculated. Tom Chart suggested that the Program needs to evaluate how such screens would fit with our nonnative fish management strategy and who should be responsible for construction costs and ongoing operation.

e. Section 7 Consultation

- Updated consultation list – *The [consultation list has been updated through June 30, 2014](#).*

Table 1 Upper Colorado River Endangered Fish Recovery Program Summary of Section 7 Consultations by State 1/1988 through 6/30/2014					
		HISTORICAL DEPLETIONS	NEW DEPLETIONS	TOTALS	
State	Number of Projects	Acre-Feet/Yr.	Acre-Feet/Yr.	Acre-Feet/Yr.	Depletion Fees
Colorado	1201	1,915,682	206,616	2,122,297	\$925,750
Utah	235	517,670	97,115	614,785	\$919,539
Wyoming	395	83,498	35,676	119,174	\$273,437
Regional	238	(Regional)	(Regional)	0	\$0
TOTALS	2,069	2,516,850	339,406	2,856,256	\$2,118,726

- Section 7 funds update – Through March 31, 2014, \$655K was available in the NFWF-managed Section 7 funds account with \$51.6K of that amount now spent or obligated (2013 Elkhead water lease, recovery goals technical assistance). Ongoing expenditures include continued recovery goals technical assistance (~\$50K/year, Valdez) and continued standardization of the electrofishing fleet (~\$3K/year, Kolz and Martinez), and potential expenditures for:
 - a feasibility study for Walton Creek channel modification (not to exceed \$30K) (see item 5, below),
 - assistance to Colorado to reclaim Elkhead reservoir,
 - assistance to Utah to reclaim Red Fleet reservoir
 - water rights consulting and geomorphology peer review.
4. Committee discussion/approval of Walton Creek engineering feasibility study (NFWF Section 7 funds) – Colorado Parks and Wildlife, working with The Nature Conservancy, has secured CWCB Species Conservation funding to modify Yampa River habitat at the Walton Creek confluence to reduce the known northern pike spawning and rearing habitat. We’ve now had more time to consider how this project would be done and are more comfortable with the process to develop a solution than when remediation was first discussed a few years ago. Construction could begin after spring runoff 2015. (The Walton Creek project is identified on the RIPRAP addendum table and is a prime in-river source of northern pike reproduction that needs to be remedied.) In the interim, CPW needs to contract an engineering feasibility study (not to exceed \$30K). Tom Chart sent a SOW (drafted by CPW’s Bill Atkinson, Sherman Hebein, and Harry Crockett) to the Committee on August 19 for consideration for Section 7 funding. This would constitute the extent of the Recovery Program’s financial involvement in the project. The engineering feasibility study is intended to assess possible solutions for reconfiguring Yampa River / Walton Creek confluence area to the maximum disadvantage of northern pike. Tom said he supports the Program doing this work. The Committee also supported the project and approved expenditure of \$30K of Section 7 funds for the feasibility study.

5. Development of October 2, 2014, Implementation Committee agenda – The Committee discussed agenda items for the Implementation Committee meeting scheduled from 10:30 a.m. to 3:00 p.m. at the Country Inn and Suites near DIA, which will include:
 - Approve [March 6, 2014, webinar summary](#)
 - Program Director’s update (including nonnative fish management updates)
 - Sufficient progress and nonnative fish action item review
 - Drought contingency planning update (States and Reclamation lead)
 - LTEMP update (Reclamation/NPS lead)
 - April 2014 D.C. trip update
 - Capital projects update
 - 2015 D.C. trip plans and topics: extending Program legislation, extending capital projects ceiling, drought planning Basin Fund contingency
 - Recovery plans update
 - 2015 Work Plan update (second year of 2-year work plan)
 - Update on discussions with States regarding oil and gas development in and near endangered fish habitat
 - Southern Rockies LCC update (including the Green River landscape project)

Committee members are asked to provide any additional agenda items to Angela or Tom Chart.

6. Review previous meeting assignments (Kantola, all, 5 min) – See Attachment 1.
7. Schedule next meeting, webinar, or conference call – >Angela Kantola still needs to draft a proposed annual schedule of Management and Implementation committee meetings. Angela will draft this as one face-to-face meeting of the IC and two of the MC (August and ~February, one in Denver and one in Salt Lake). The Committee scheduled a webinar for October 21, 9:30a.m. – 2:30 p.m., with an hour break for lunch. Future new agenda items may include:
 - Discussing what recovery looks like as it relates to flows, ongoing O&M, continued monitoring, ability to respond to nonnative fish concerns, etc.
 - Preparing to talk to Congress about extending Program legislation, extending capital projects ceiling, drought planning Basin Fund contingency
 - Discussing how screens to preclude nonnative fish escapement from reservoirs would fit with our nonnative fish management strategy and who should be responsible for construction costs and ongoing operation.

ADJOURN: 3:50 p.m.

BBQ and Evening Social Event: The Committee enjoyed a barbecue at Cherry Creek State Park.

Attachment 1: Attendees
Colorado River Management Committee Meeting, August 25, 2014

Management Committee Voting Members:

Brent Uilenberg	Bureau of Reclamation
Michelle Garrison	State of Colorado
Tom Pitts	Upper Basin Water Users
Steve Wolff	State of Wyoming
Bridget Fahey	U.S. Fish and Wildlife Service
Melissa Trammell	National Park Service
Patrick McCarthy	The Nature Conservancy
Clayton Palmer	Western Area Power Administration
Leslie James	Colorado River Energy Distributors Association
Henry Maddux	State of Utah

Nonvoting Member:

Tom Chart	Recovery Program Director, U.S. Fish and Wildlife Service
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Recovery Program Staff:

Tom Czapl	U.S. Fish and Wildlife Service
Kevin McAbee	U.S. Fish and Wildlife Service
Angela Kantola	U.S. Fish and Wildlife Service

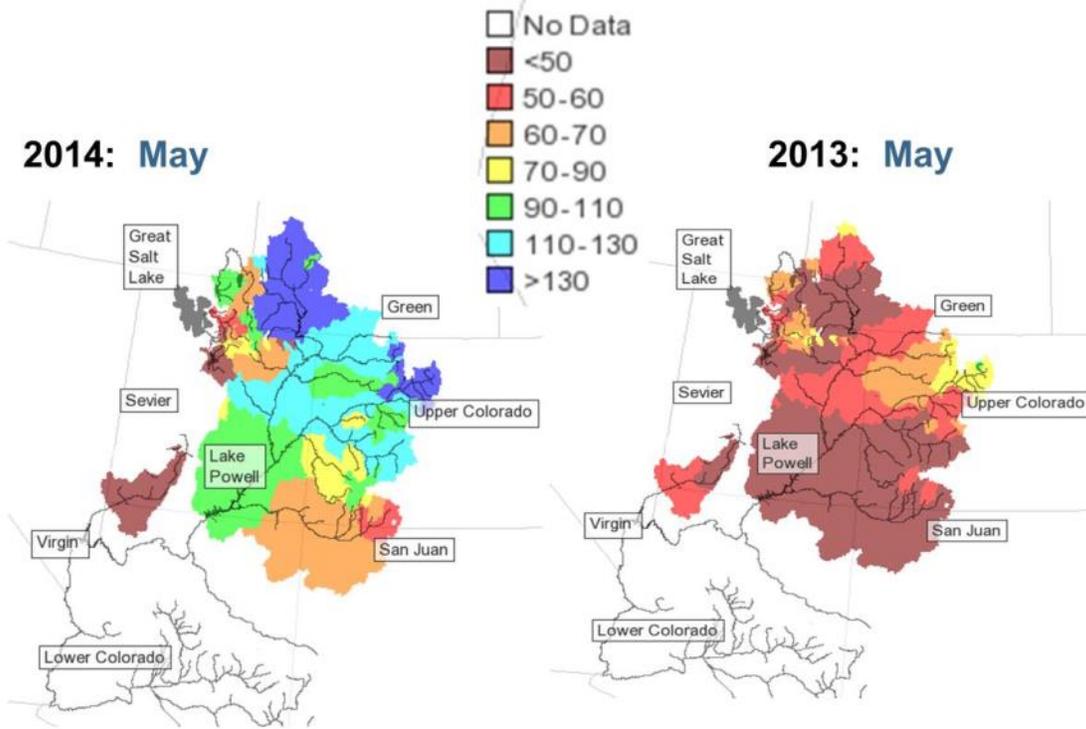
Others

Jana Mohrman	U.S. Fish and Wildlife Service
Jerry Wilhite	Western Area Power Administration
Mark Sturm	National Park Service
Carlie Ronca	Bureau of Reclamation
Dave Speas	Bureau of Reclamation
James VanShaar	Bureau of Reclamation
John Shields	Bureau of Reclamation

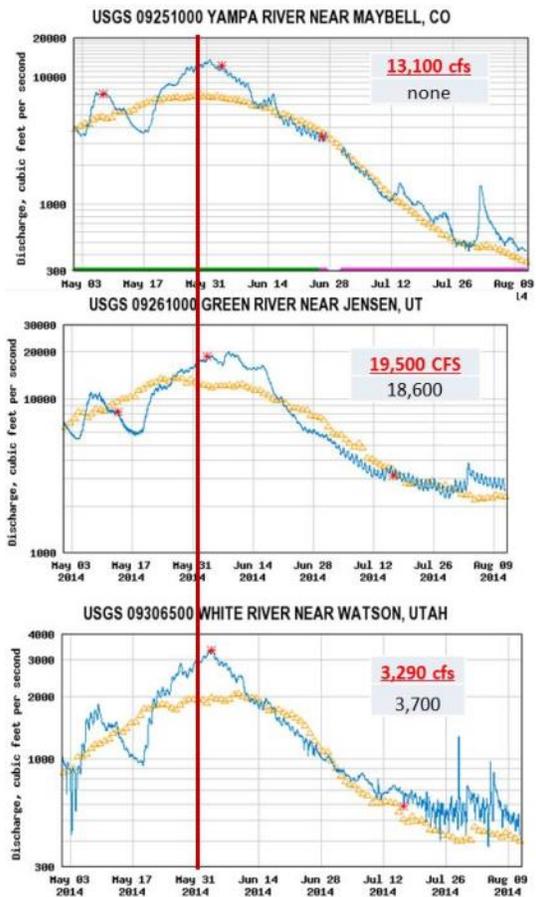
Attachment 2: Meeting Assignments

1. **Tom Pitts** will work with **Clayton Palmer and Brent Uilenberg** and provide a list of additional Program contributions to be added to the Program's budget pie chart that appears in each year's briefing book. *In process.* For the 2012 & 2013 *Program Highlights*, we used the \$37.4M annualized estimate. **Western** contracted with Argonne to model and report actual Flaming Gorge power replacement costs going back to 2001. Subsequently, **Western** will provide annual power replacement cost for the previous year each January for inclusion in the *Program Highlights* pie charts. Those pie charts will include a footnote explaining the calculation and assumptions. **Program participants** will identify other significant costs that have not previously reported (e.g., the Granby component of 10,825 which is estimated at \$16M, \$1.25M contributed by Colorado for GVWM and \$1.5M for OMID, CRWCD contributed property for OMID, etc.) (*done*). **Tom Chart** will ask **Dave Campbell** to work with the SJCC to determine their additional costs not currently reported (e.g., Southern Ute expenditures on population model). Also, **Patrick McCarthy** will provide information on TNC's capital contributions in the San Juan Program. *A Cost Subcommittee met several times via conference call to review the proposal for and results of the power replacement costs analysis. 1/29/14: Water user and Colorado additional costs added and documented in Kantola's Briefing Book Pie Chart Data spreadsheet. Power revenue replacement costs "placeholder" from previous years retained until Argonne report finalized and approved (currently in revision). 3/20: Tom Pitts said that a few adjustments on water user contributions will need to be made, but we seem to have the totals and process for updating pretty much squared away.* **Tom Pitts** will work with the water users to develop an annual report on O&M and contract costs on the 10,825 water.
2. **Angela Kantola** will send out a revised version of the annual depletion charge budget adjustment update (Attachment 3) in October when Reclamation's FY15 contribution is known. *Pending in October.*
3. **Kevin McAbee** and **Colorado Parks & Wildlife** will draft an action plan for smallmouth bass control in Ridgway, including all the options and contingencies. *6/13/14: Kevin said CPW, Reclamation, and others are in the early stages of reviewing screening options. Regulations are more of a statewide conversation. As we get more clarification on options, we will get back to a specific action plan.*
4. The **States** will check to see if they could meet for the oil and gas meeting on Friday, October 3.
5. **Angela Kantola** still needs to draft a proposed annual schedule of Management and Implementation committee meetings. Angela will draft this as one face-to-face meeting of the IC and two of the MC (August and ~February, one in Denver and one in Salt Lake).

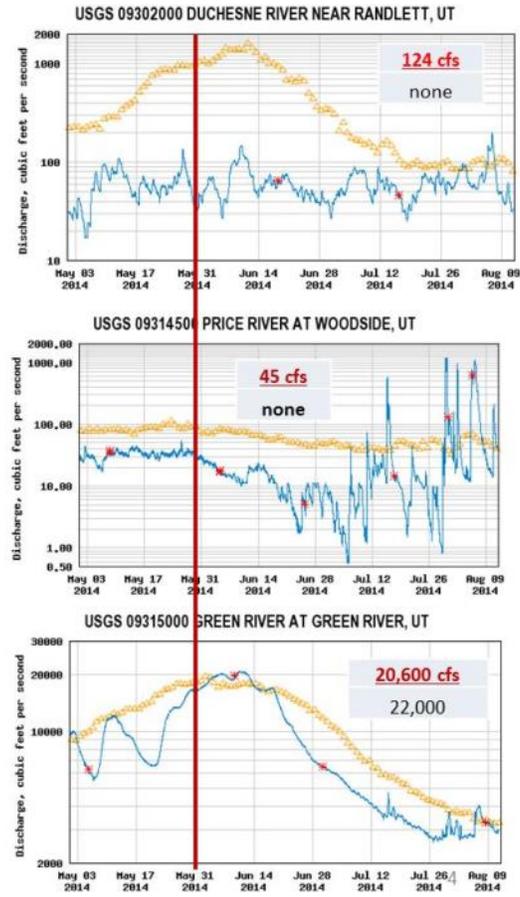
Attachment 3: Hydrology



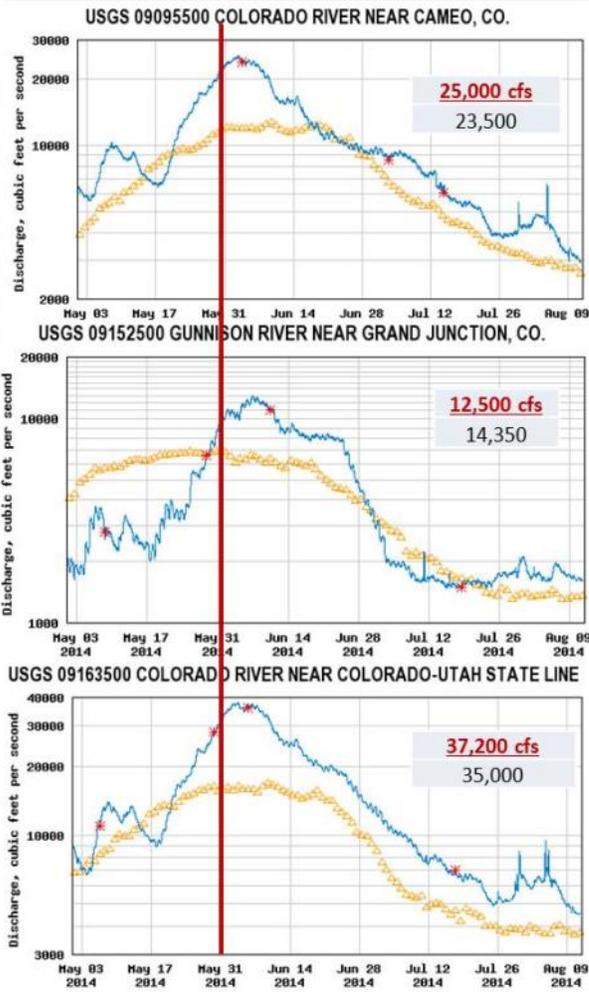
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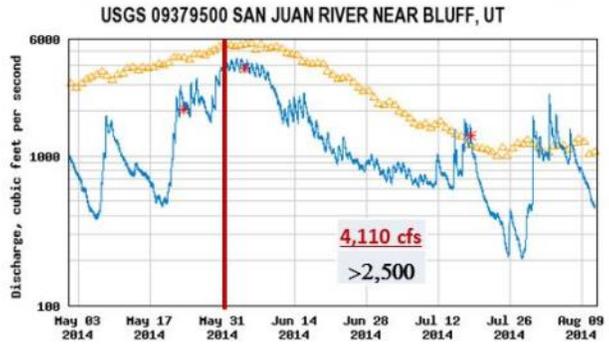
The Green River



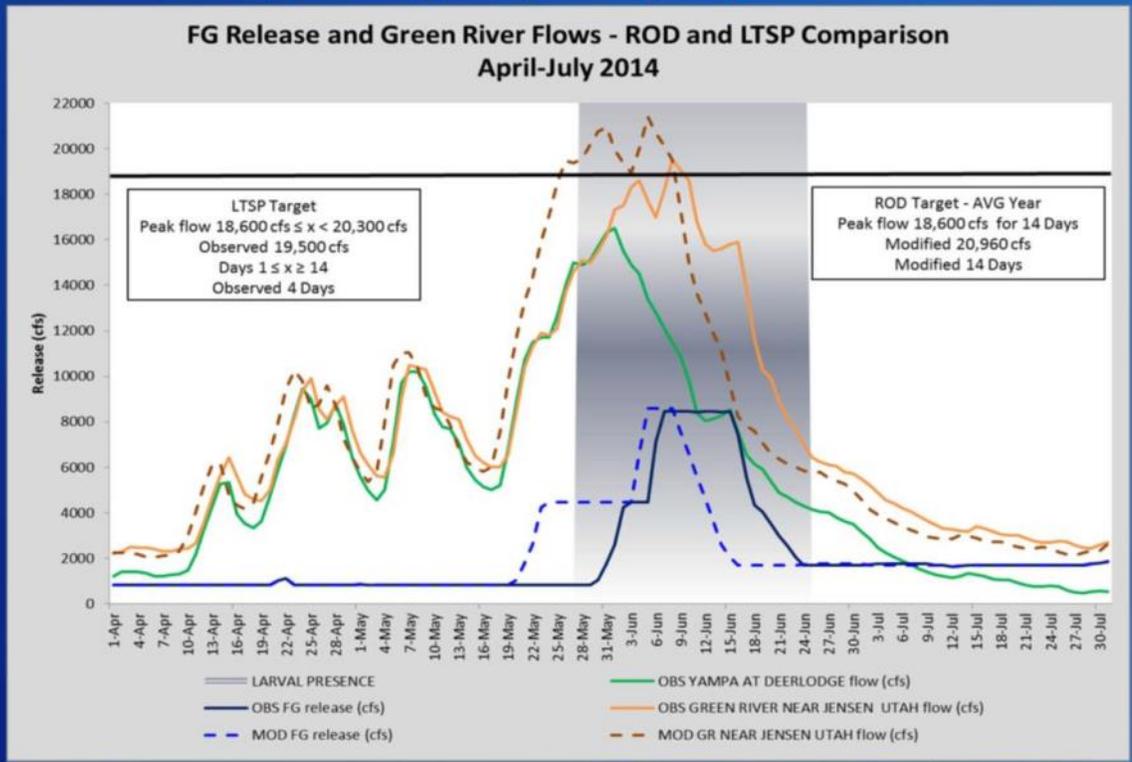
The Colorado River



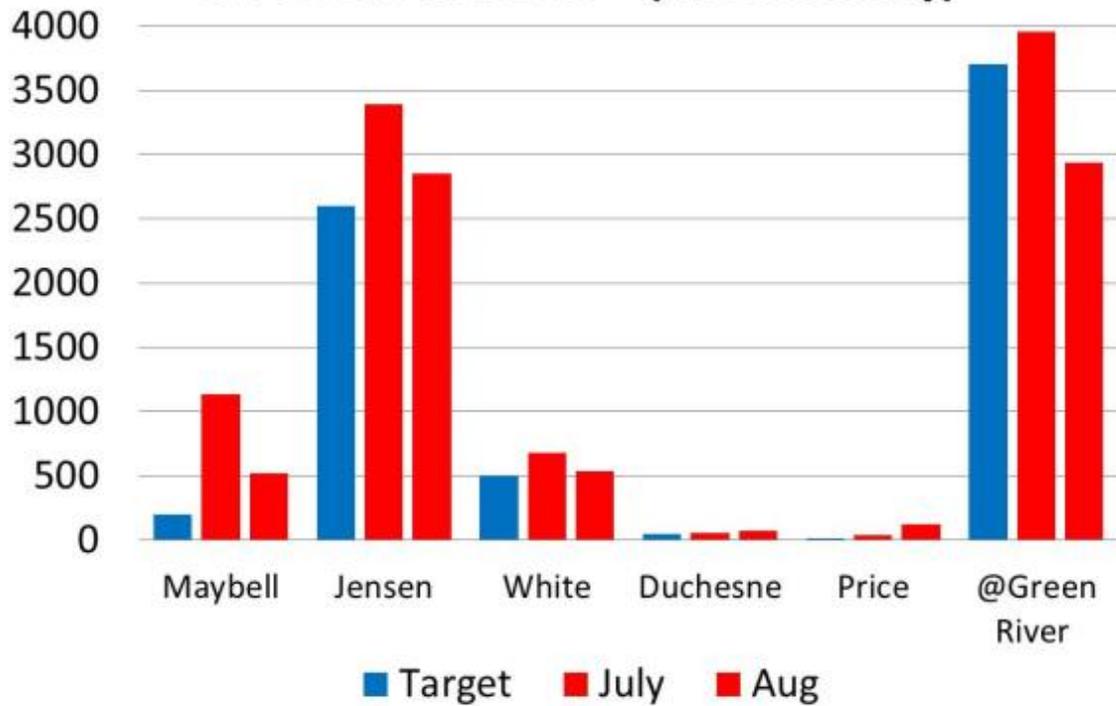
The San Juan River



Flaming Gorge Spring Operations

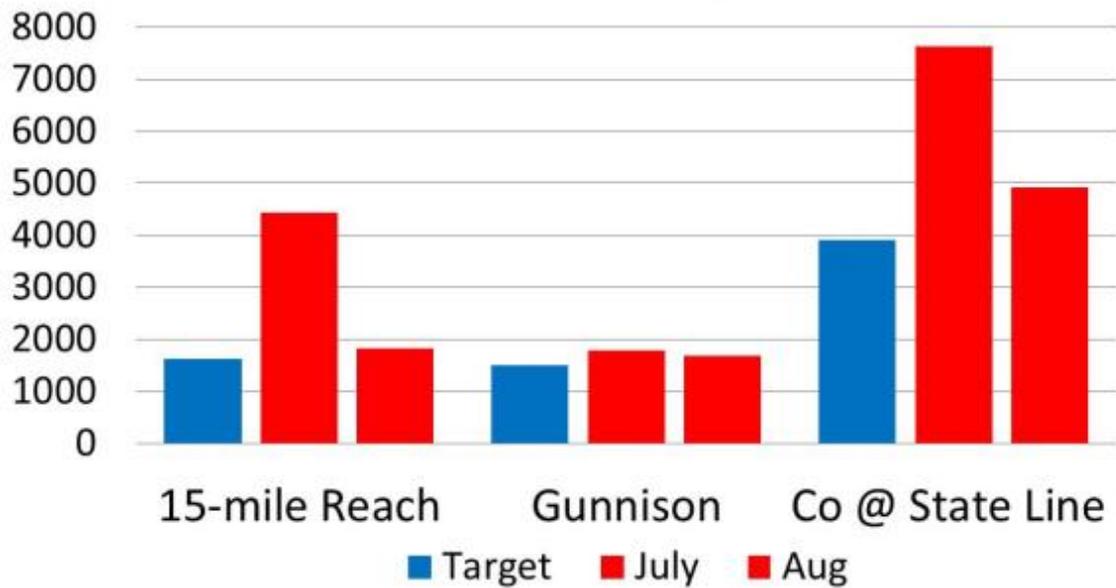


Green River (AVG Monthly)



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Colorado River (AVG Monthly)



9

Attachment 4

Tusher Wash Diversion PIT Antennas

Issue:

As part of the NRCS's rebuild of the Tusher Diversion just upstream of Green River, Utah, a number of conservation measures were agreed to between the NRCS and the FWS. Among those are an upstream fish passage (similar in design to the Price-Stubb passage), downstream fish passage 'notches' in the diversion (to focus water into a depth that is passable by endangered fish), and a sediment return on the East Side Canal Operations. In addition to those diversion components, the NRCS agreed to place PIT tag detecting antennas on each component, in order to track fish in the parts of the diversion that will most likely detect fish movement. Because the diversion location is immediately downstream of the Desolation/Gray Canyon reach of the Green River and upstream of the lower Green River reach, we expect to detect a large number of fish bypassing the diversion. In fact, the diversion antennas will likely detect:

- 1 Colorado pikeminnow and razorback sucker migrating to spawning locations in Deso/Gray;
- 2 Fish stocked into the river at Green River State Park, which is immediately downstream of the diversion. Currently this includes razorback sucker and bonytail¹.
- 3 Wild-produced, juvenile fish reared in lower Green River habitats as they emigrate to home ranges upstream². Emigration from this reach is important to the overall population of the Green River³.
- 4 Fish transitioning from the Colorado River basin to the Green River basin and vice versa; and
- 5 Humpback chub movement between the Desolation and Cataract Canyon populations.

Specifics:

NRCS has agreed to pay for 75% of all costs associated with installing these antennas. They are limited to the 75% figure because of the requirements of the Emergency Watershed Protection (EWP) funding source. Typically, the remaining 25% of any costs for the project should be paid for by the project sponsor – here the local water users via the Utah Department of Agriculture and Food. However, it is the FWS's and the PDO's opinion that this cost should not be required of the water users, as this is outside of the scope of the diversion rebuild and the conservation measures they are already paying.

Request:

NRCS recently received a final estimate from BioMark for the cost of manufacturing, installing, and maintaining a complete system of antennas for the diversion. Total cost is estimated at \$212,852 (attached). At that cost, the Recovery Program share would be \$53,213. This is a fraction of the cost of other permanent antennas (White River, etc.).

¹ Exact stocking locations in the lower Green River may change via the revised Integrated Stocking Plan, but stocking will continue in the lower Green River reach.² Not all juvenile fish will be tagged. Only young fish encountered in lower Green River projects will have tags.³ The importance of lower Green River populations is evident because increased abundance of adult Colorado pikeminnow in the White River and middle Green River through 2008 almost certainly derived from upstream movement (high transition rates) of large numbers of juvenile and recruit-sized Colorado pikeminnow that originated in downstream reaches of the Green River in 2006 and 2007 (Bestgen et al. 2010).

Tusher Wash

Budget Summary



705 S. 8th St.
 Boise, ID 83702
 PHONE: (208) 275-0011
 FAX: (208) 275-0031

SUMMARY	Subtotal	Grand Total	Cumulative Total
Phase 1: Site Visit/Pre-Planning	\$3,171	\$3,171	\$3,171
Phase 2: Const. and System Test	\$141,775	\$141,775	\$144,946
Phase 3: Installation	\$11,385	\$11,385	\$156,331
Phase 4: O&M	\$1,532	\$1,532	\$157,862
TOTAL	\$157,862		

SUMMARY (all Phases)

Labor	Hours	Rate	Subtotal
(1) Project Manager	50	\$147.00	\$7,350
(2) Chief Scientist	0	\$125.00	\$0
(3) Senior Scientist	0	\$113.00	\$0
(4) Scientist (Biology)	0	\$81.00	\$0
(5) Fisheries Specialist	220	\$88.00	\$19,360
(6) Technician (Biology)	0	\$48.00	\$0
(7) Typist/Clerical	0	\$48.00	\$0
(8) Electronic Technician	280	\$101.00	\$28,280
(9) Senior Electronic Eng.	0	\$174.00	\$0
Labor Total	550		\$54,990
Nonlabor			
Travel			\$11,427
Equipment			\$146,435
Nonlabor Total			\$157,862
Total			\$212,852

* QUOTE GOOD FOR 90 DAYS

** IF PROJECT START DATE EXCEEDS 180 DAYS FROM BID DATE, PRICE ESCALATION MAY BE REQUIRED.

***NO RETURNS OR REFUNDS CAN BE ISSUED ON PROJECT RELATED PURCHASES AND SPECIAL ORDERS

****BIOMARK'S STANDARD WARRANTY APPLIES

Attachment 5 Stewart Lake Gate Repair

Issue:

Stewart Lake has been a principal Larval Trigger Study Plan (LTSP) target wetland for three years because it connects at lower flows than many wetlands. In 2012, UDWR successfully entrained larvae using the LTSP and successfully excluded large-bodied nonnative predators, but water conditions precluded successful rearing of larval suckers. In 2013, UDWR successfully entrained larvae, successfully excluded large-bodied nonnative predators, and successfully reared razorback sucker over the summer. UDWR released 592 juvenile, wild-spawned razorback sucker into the river in 2013 (Project FR165 Annual Report), representing a major step towards species recovery. In 2014, UDWR again successfully entrained larvae using the LTSP and successfully excluded large-bodied nonnative predators. However, high flow conditions caused difficulty in operating the outlet gate structure at Stewart Lake. Safety issues were demonstrated and eventually some components of the gate were broken.

Specifics:

In 2014, flows were much higher than either 2012 or 2013. Under the LTSP, wetland managers wait for larval fish to appear before entraining water (to ensure the entraining water carries larval fish). The Stewart Lake outlet gate is hinged to swing towards River because it was designed as an outlet gate. However, we now use it to entrain larval fish (as more of an inlet gate) because we know that razorback sucker stage at the outlet channel in high numbers. As the water level rises in wet years (2014) and we wait for larval fish to emerge, the head against the gate gets very strong. Opening the gate against the head (almost seven feet of water) was very difficult this year. Some potentially unsafe situations were required to get the gate open. Also, some components of the gate were broken. The gate will work for the remainder of 2014, but will not work for 2015 or beyond because of the broken components and the safety issues.

Request:

To complete this repair, Recovery Program dollars are being requested because the operations that caused the problem were Recovery Program specific. The Recovery Program needs to repair/rebuild the gate for to allow it to open in all water years. Key components for a successful repair are:

- Safe operations for workers
 - Open both into and out of the lake for effective inflow and outflow
- Creates flow conditions suitable to larval fish. That is, velocities must be slow enough for larval fish survival
- Incorporating a fish exclusion component to prevent large bodied nonnatives to enter the lake
 - UDWR currently does this downstream of the gate, but some guide bars, or something similar would be very helpful for this component

Ongoing Coordination:

Stakeholders convened a conference call on August 7th to discuss the issue. Provo BOR is taking the construction lead. Both UDWR and Provo BOR have researched the history of the gate (built in 1999) and are looking for as built drawing, etc. Provo BOR will visit the site after water has been released from the lake (meeting scheduled for September 29th). A second conference call is scheduled for October 9th to discuss the specifics of the on-site visit and steps forward.

