



Upper Colorado River Endangered Fish Recovery Program

Dated: February 3, 2015

October 21, 2014, Revised Draft Management Committee Webinar Summary

Participants: See Attachment 1

CONVENE: 9:30 a.m.

Introductions, review/modify agenda and time allocations, and appoint a timekeeper.

1. Approve August 25, 2014, revised draft meeting summary – >Brent Uilenberg will send Angela corrections to typos in the nonnative fish discussion. The Committee approved the summary with those revisions.
2. Report on October 15 energy and endangered fish meeting – Tom Chart described the meeting with State oil & gas folks on Wed. 10/15 to begin discussing ways to minimize risks of oil and gas development on the endangered Colorado River fishes and their habitats. Tom said he thought the meeting went very well and he really appreciated everyone's participation. At the meeting, Tom Chart gave an overview of the Recovery Program and discussed the importance of water quality in main channel and floodplain endangered fish habitat. Tom explained how ESA compliance for water use in the upper Colorado River basin depends the Program making sufficient progress toward recovery and emphasized that a spill that reaches the main channel could set the Program back 10-15 years. Floodplain habitats are vitally important to the recovery of the endangered fish; energy development in and near the floodplain has occurred / is occurring, and spill incidents do occur.

The States outlined their permitting, review, inspection, and spill response processes. Colorado clearly had more capacity and review program as defined by statute, but all three States clearly have good review and inspection programs. Colorado has map layers to identify sensitive species areas, but since some oil and gas development occurs where there is no Federal nexus, there may be room for more definition in those layers to provide endangered Colorado River fish information. Wyoming noted development could increase in the Little Snake River basin. In Wyoming, wells must have a 350-foot setback from surface water. All the States noted that much effort currently is focused on potential impact to sage grouse. Utah said they've seen permit applications for development in the Duchesne floodplain; they've resisted at this point by imposing a suite of restrictions, but more applications may be expected. It was noted that private surface landowners often direct industry to the floodplain portions of their property where drilling won't impact their operations (e.g. pivot irrigation, etc.) as much. Of course, this raises risk to fish/habitat.

Steve Wolff said Tom Kropatsch was very appreciative of the meeting. Steve, Henry, and Michelle all thought Tom's presentation was very helpful. Henry noted the three States also were able to coordinate during the breaks and after the meeting. Michelle said Colorado will be following up and watching for development that could impact the river in the case of a spill, for example.

The group discussed ways we might improve coordination to minimize impacts of energy development in and near endangered fish habitat and identified these next steps:

- Determine who's got what "covered" (e.g., Federal lands/minerals with Federal nexus versus private lands with no Federal nexus). Talk with CPW about what they cover/might cover.
- Provide any GIS shape files USFWS or its partners have for the endangered fish (critical habitat and

spawning habitat and areas immediately downstream critical to rearing that likely overlaps with O&G leasing).

- Meet with BLM (State and local offices) (and Service ES folks, including San Juan) since BLM is responsible for so much of the O&G leasing in CO/UT/WY and each office approaches things a little differently.
- Investigate outreach opportunities (e.g., to industry).
- Coordinate with the San Juan Recovery Program in the future. Tom Chart said he spoke with Dave Campbell after the Oct 15 discussion and will coordinate on future communications / meetings.

Patrick McCarthy noted Bart Miller's concern about how much time it might take to get the GIS files up to speed and whether the States might implement some kind of a simple safeguard in the interim that wouldn't create a burden for the State oil and gas personnel. Patrick will give this some thought to see if they could make a suggestion. Tom Chart said he emphasized the need to focus on prevention and agreed it makes sense to identify the best ways to reduce risk. Steve Wolff emphasized the need to understand that BLM is a key player; Tom Chart agreed (and the ES offices will be an important link in this). With regard to whether or not there is a Federal nexus, it's important to understand the term "Federal minerals" wherein minerals are Federally-owned when the surface land is not. For example, 55% of surface lands are federally owned in Wyoming, but >80% of minerals in Wyoming are federally-owned.

Tom Chart described proposed development on the Ouray National Wildlife Refuge. The Refuge Manager and ES office have worked closely with the operators to remove wellpads from the floodplain and near the hatchery. The Service has to provide reasonable access to the minerals, but has been able to request a number of modifications and best management practices to reduce risk. These can serve as case studies for similar projects going forward. Seth said the review process has taken some time, but been well worth the effort.

3. Review of sufficient progress action items – Tom Chart said the 2014 memo was just signed and the items called out are shown in Attachment 2. The Service focused on:
 - Instream flows (options to meet flow recs, especially in dry years, develop flow recommendations for White River via White River Management Plan process),
 - Habitat development (improving fish screen operations, especially at GVIC, keep moving forward on Tusher Division/Green River Canal entrainment)
 - Nonnative fish (converting Stagecoach tagging to a removal effort and consistent public messaging about detrimental nonnative fishes)

Report on meeting between Noreen Walsh and Bob Broscheid – Tom Chart described the September 16 conference call. Colorado is concerned about must-kill from a law enforcement perspective; though they know Utah and Wyoming have implemented that approach. Tom thinks must-kill provides the clearest message that some of these species can't be tolerated. Although CPW is not ready to implement basinwide must-kill, they are willing to consider a pilot project and a suite of actions to achieve the necessary result. Director Broscheid asked CPW to establish a work group (CPW, Colorado water users, Program Director's office) led by Greg Gerlich. This Fish Management Strategy Work Group will have its first meeting November 4 (pilot project location and scope will be one of the things the Program would like to discuss). Noreen Walsh is willing to focus on the *outcome* of a successful nonnative fish management program. Melissa asked if CPW has identified what the metric of success would be for a pilot must-kill in Colorado. Tom Chart said he thinks Colorado is focused on a reduction in the nonnative fish populations and perhaps native fish response. When the task force meets, they will discuss this and consider alternative metrics. Henry suggested that public attitudes and awareness of illegal introductions are the better metric. Henry said Utah has had a number of internal meetings on illicit introductions, since they impact recreation for everyone. As a result, Utah decided that whatever they do, they will make it clear they will respond and

will be careful not to inadvertently reward illegal introductions. Must-kill says they won't tolerate illegal activities and will manage against them. Preventing even one illegal introduction can save thousands of dollars. Michelle said Colorado has tried to take a hard stance on illegal introductions, too; unfortunately, they still occur and Colorado is open to suggestions as to ways to communicate a strong message. Henry mentioned that Utah is trying to solve the big picture of illegal introductions, rather than just seeing a biological response in a particular must-kill area. The point is to teach the public what's illegal, and get them to understand what the State will do (e.g., rotenone a reservoir) where illegally-introduced fish do occur. Tom Pitts asked about enforcement and Henry said their law enforcement folks are trying to use the must-kill regulation as an educational tool. Tom Chart said that as Colorado considers a pilot project, we'll need to be careful not to confuse the public (e.g., must kill in location 'a', but no at location 'b'). Tom believes there's no clearer public message than when an angler opens up the fishing regulations and sees a must-kill regulation for certain species throughout a basin.

4. Recovery Plans update – Tom Chart said the Service is reviewing threat removal criteria in the draft Colorado pikeminnow plan. Seth Willey said the Service is reviewing the latest draft to make sure it meets statutory requirements. The objective and measurable criteria may need a little more work and Seth will be providing suggested language. Hopefully the plan will go out for Program review by the end of November. The Service is working to convene the humpback chub recovery team (with writing, science advisory, and implementation subgroups) for the humpback chub recovery plan. Terms of reference have been developed to help clarify roles and responsibilities of each subgroup. Preliminary invitations have been made, but Tribal representation is still needed for the implementation subgroup (Region 2 lead). Official letters of appointment will follow in November, then a kick-off meeting will be scheduled of all the subgroups to discuss the terms of reference, review basic statutory requirements, etc. Tom Pitts asked about the expected timeframe. Seth said the Service views most current recovery plans as exceedingly long and has been working to streamline the process, with the recovery plan itself being a very short document. A separate species status assessment will be the team's first task, then after that's drafted, the team will be focused on producing a streamlined recovery plan. The third component is an implementation document, which in the case of the Recovery Program, is the RIPRAP. Seth said plans have typically taken about 2.5 years, and given the number of stakeholders in the humpback chub plan, the streamlined process may still take ~2.5 years.

Tom Chart said with so much information coming in on razorback sucker, the Service is considering initiating a species status assessment which they anticipate contracting. The goal is to understand and assess whether a downlisting action is something the Service should consider. The Service is developing an inter-regional project plan and then will develop a scope of work for a species status assessment. Henry said Utah supports this and is willing to help with the costs, if needed.

5. What will recovery look like as it relates to flows, ongoing operation & maintenance, continued monitoring, and responding to nonnative fish concerns? – Henry said this topic comes up during the Washington briefing trips and we need to be careful to communicate both to Congress and among all the Program stakeholders well in advance what activities will need to be maintained and at what costs once recovery is achieved. >Tom Pitts said he'd like to work with Henry and Bridget Fahey to frame this discussion and bring it back to the Management Committee at a later date. Henry agreed, and suggested considering Brent Uilenberg for his knowledge of the ongoing costs of capital projects. Seth asked if this is primarily about the regulatory framework. Tom Pitts said it's about that and about post-delisting monitoring, but also about what will be needed to maintain facilities (e.g., Federal cost-sharing) and more.
6. White River Management Plan contracting update – Michelle Garrison said Colorado has begun working through the contracting process and will be issuing an RFP. Michelle would like Jana Mohrman to be on the selection committee and asked others who might want to be on the committee to let her know. The contractors that just completed work on the Yampa and White rivers may be interested, but the lead person

won't be available for six months. We will need to identify how much of the writing of the plan we'd like the contractor to do. Michelle and Jana will add appropriate detail to the scope of work in early November and an RFP will go out a month or two later. Jana and Tom Pitts both suggested that we'll likely want the contractor to do most of the writing and some public outreach, also. Tom Pitts noted one issue is future water demand and how energy development may or may not affect that; Michelle said she thinks we'll have to look at a couple of scenarios. Tom Pitts noted that Tribal water rights also will need to be addressed. Jana, Tom, and Angela agreed we need to determine the protocol for how to engage the Tribe early on and will work with the Service's Regional Office on this.

7. Capital projects update (Brent Uilenberg)

- OMID canal automation regulating reservoir construction contract couldn't be done in 2014; bids will be re-solicited with a target award date of spring 2015.
- Tusher Wash fish barrier final design is pending confirmation that the similar weir wall at Hogback on the San Juan is effective. A test will be conducted the first week in November. Although river temperatures will be cool during this test (perhaps affecting fish movement), it will provide some initial insights.
- Stewart Lake operation to integrate with LTSP requires filling through the outlet channel gate (originally intended to be a one-way outlet), so the gate needs to be modified to make this work better before spring.
- Breaches we recommended in restored gravel pit ponds near Rifle have resulted in the creation of nonnative fish habitat and so they now need to be sealed. The anticipated repair would be \$60-\$70K, but likely there are others sites that we will have to address in the future (need to review consultation history on the many gravel pit ponds in this area). Brent said LaFarge Pond is across from Rifle's municipal water intake and it may take a while before everyone is comfortable with how to proceed. Since this is a nonnative fish concern, Tom Pitts recommended adding it as an item to discuss with CPW. Brent said mobilizing the equipment to seal the breaches is a significant part of overall project cost, so if we can address them all at once there would be some cost savings.
- Reclamation met with a staffer from Congressman Tipton's office regarding a renewed Vermillion Ranch landowner complaint about erosion and spring flows released from Flaming Gorge.
- Discussing with the River District what kind of a facility might prevent fish escapement from Elkhead and Ridgway. Spillway nets at Ridgway and Elkhead are probably the most sensible structural solutions. Ray Tenney provided a very rough cost estimate of ~\$700K at Elkhead (which already has anchors in place). Likely total potential cost range of \$1.4 - \$2M for installation and then ongoing maintenance and net replacement costs.
- Improving GVIC fish screen effectiveness; \$300-\$500K rough estimate.

Total additional costs: In August, Brent reported avail capital project ceiling of \$15.8M; with the items identified above, the available cap ceiling would drop to ~\$13.7M. This assumes weir wall concept will work at Tusher (+≥ \$2M if not). This does not include solving the significant sediment deposition at Grand Valley Fish Project as cost/solution not yet known.

8. Program Director's office staffing

- a) Information and Education Coordinator vacancy – Angela Kantola said she's working through the process and hopes the Service will advertise this position before the end of the calendar year.
- b) Seek approval to fill a full-time database manager position – Tom Chart described the process to work with contractor (Colorado Natural Heritage Program) to create a truly powerful relational database out of our existing data files. Dave Speas anticipates three years of development/testing/completion with the option of a couple of years to fully transition to management of the database by the Program. This

time is needed to provide adequate review by the users (field biologists with limited time). Melissa Trammell asked when the position will be needed; Kevin McAbee said that both the Program and the contractor will benefit from overlap. . He suggested that the Program have a database manager hired at least by the second year of the project. Given the amount of time needed to hire someone, we need to start on this now. Dave Speas noted that person might also be involved in some of the analytical support. Two parts: someone actively working with data and providing it to others, and then the technical/mechanical capacity to maintain it (this second part might be in-house or remain with the Natural Heritage Program). Tom Pitts supported getting someone on board as soon as possible, noting they could help coordinate reviews and more. Tom Chart said he thinks we'll need a full-time position to handle Upper Basin data. Tom discussed this staffing issue with Dave Campbell as the new database will house information collect by both Programs. Dave is thinking about what they'll need in the San Juan Basin. Tom Pitts suggested looking at what's working in the Columbia Basin and what job descriptions they've used. Tom Pitts asked about funding for this and the other positions; Tom Chart said it's a mix of power revenues and Service funds in the Program.

- c) Review consequences of the Instream Flow Coordinator vacancy – Tom Chart recalled that we started the process to fill the Instream Flow position a couple of years ago. Because of the hiring freeze and extremely tight budgets, the PDO was asked to share that position with two Ecological Service field offices. During the Instream Flow Coordinator hiring process Pat Martinez, our Nonnative Fish Coordinator, retired. The vacancy announcement was converted to a 100% Program position (Kevin McAbee was hired). Although hired as Instream Flow Coordinator, Kevin has had to focus completely on nonnative fish issues. Tom, Jana, and other program participants have tried to cover the instream flow vacancy, but this short-staffing has had implications for the White River Management Plan, Green River flow recommendations evaluation, peak flow, and more. We've farmed some of this work out, and we clearly pay for them one way or another. At this point, Tom said he just wants to raise this issue so we remain aware that we're trying to coordinate these activities on a more ad hoc basis.

Henry asked about anticipated costs for all three positions; Tom Chart and Angela Kantola estimated somewhere ~\$125-\$150K/position. We hope to fill I&E in early calendar 2015. The Program Director's office will discuss the database manager with the Biology Committee and then move forward on this position in 2015 with the intent of bringing someone on by FY16. Michelle Garrison said Colorado supports these efforts and the priority the PDO has placed on filling all of these vacancies.

9. Preparing to talk to Congress about extending Program legislation, extending capital projects ceiling, drought planning Basin Fund contingency.

Hydropower funding expires in 2019, so the Program will need to seek reauthorization through 2023. The other issue is the need to extend the capital projects ceiling. In 2015, Tom Pitts proposes just giving Congress a heads up, and then providing a serious proposal in 2016. Henry Maddux asked if the 2015 Congressional schedule is out yet; Tom Pitts said probably not until early January, but Tom thinks we'll try to schedule the briefing trip in April again this year, if possible.

With regard to drought contingency planning, Tom noted the Management Committee thought they might need to raise this issue with Congress (potential impact of drought on power revenues). Ted Kowalski provided a briefing on the drought contingency planning at the Implementation Committee. They are focused on prevention (maintaining water levels) and so Ted did not believe we need to raise this issue with Congress (though the Program should review the contingency plan). Steve said that if there's a signed contingency plan by the spring trip, there may be something to mention. Henry agreed, noting we don't want to raise something that generates more questions that we can't answer. Patrick said he's considered everyone's reasoning on this and agrees this is not something we need to raise.

10. How will screens to preclude nonnative fish escapement from reservoirs fit with the Program's nonnative fish management strategy and who should be responsible for construction costs and ongoing operation – Henry noted we've alluded to structural solutions for addressing nonnative escapement. As we discuss those, the question of who pays for them will be raised. Henry noted these facilities also would benefit sportfishing; therefore, Utah has discussed including their sportfish programs and their available funds. In addition to construction costs (e.g., ~\$700K at Elkhead, likely more at Ridgway), Brent noted the 5-7 year replacement cycle on nets (based on experience at Highline Reservoir), and also annual O&M costs. Krissy said structural solutions also have been discussed at Starvation and Red Fleet reservoirs. Tom Chart mentioned Catamount and Stagecoach and noted there are perhaps others, as well. Tom Chart said he sees screening reservoir spillways as a last resort. We need to be sure we've first exhausted all other options (e.g., rotenone, regulations, and in-reservoir mechanical removal). We have to remember that screens inevitably will fail at some point. The Program has informally agreed to cover 50% of chemical costs of rotenone projects (Section 7 funds to date). Tom Chart doubts a similar formula would apply to reservoir screens and suggested that these be evaluated case-by-case. There will need to be consideration of how the nonnative population became established, available cost-share, ongoing costs, and more. Krissy said treating Red Fleet has been proposed; UDWR supports it, and is having discussions with anglers and the PDO about fish species that might be stocked. If sterile walleye were stocked, escaped fish would still pose a risk, so they'd like to both treat Red Fleet and install a downstream screen (a much cheaper alternative than those evaluated for Starvation Reservoir, for example), with initial construction estimates of ~\$100K. Melissa asked how about the possibility to stock Colorado pikeminnow in Red Fleet might be affected by a downstream screen, since, depending on the type; a screen could cause some mortality of pikeminnow that escape the reservoir). Krissy said they are discussing this with USFWS. It would require an ESA Section 10(j) or 10(a)1(a) process. USFWS doesn't have available staff, so UDWR is considering contracting with Mark Capone (former FWS). Dave Speas asked about the type of structural solution being considered for Elkhead. Brent said several options have been considered, but a net is the most viable, even given the anticipated damage from Elkhead Creek debris. Melissa Trammell asked if rotenone was still being considered at Elkhead and when these discussions were taking place. Tom Chart said chemical reclamation is still being discussed as part of the solution. >Tom Chart suggested that the PDO should draft an issue paper on reservoir screening cost share; Henry agreed. Tom Pitts and Henry and Tom Chart thought this might take the form of a decision tree.

Tom Chart suggested we may need to schedule a joint Biology and Management Committee webinar between now and February to discuss a draft Screening Issue Paper considering pending nonnative control actions at Elkhead. The PDO will Doodle a time after the committees have had ample time for review and comment.

11. Review previous meeting assignments – See Attachment 1.
12. Schedule next meeting, webinar, or conference call – A conference call or webinar is typically scheduled for early to mid-February; the Committee set this for February 3, 9:00 a.m. – 12:00 p.m. An in-person meeting (SLC) is typically held in late March or early April to approve RIPRAP revisions/assessment and FY16-17 program guidance; the Committee scheduled this for 9:30 a.m. – 4:30 p.m. on March 24. Michelle Garrison will see if Harry Crockett can substitute for her). Henry Maddux will arrange a meeting room at UDNR (which has a nearby light rail stop from the airport).

ADJOURN: 12:40 p.m.

Attachment 1: Participants

Colorado River Management Committee Webinar, October 21, 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
Seth Willey for Bridget Fahey	U.S. Fish and Wildlife Service
Melissa Trammell	National Park Service
Patrick McCarthy	The Nature Conservancy
Jerry Wilhite for Clayton Palmer	Western Area Power Administration
Not represented	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:

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

Others

Beverly Heffernan	Bureau of Reclamation
Dave Speas	Bureau of Reclamation
Robert King	State of Utah
Andrew Gilmore	Bureau of Reclamation
Jana Mohrman	U.S. Fish and Wildlife Service
Krissy Wilson	Utah Division of Wildlife Resources, Biology Committee vice-chair

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 in October when Reclamation's FY15 contribution is known. *Pending in late 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. **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).
5. **Brent Uilenberg** will send **Angela Kantola** corrections to typos in the nonnative fish discussion in the August 25, 2014, revised draft meeting summary and Angela will post a final summary to the listserv.
6. **Tom Pitts** will work with **Henry Maddux, Bridget Fahey, and Brent Uilenberg** to frame this discussion about what will recovery look like as it relates to flows, ongoing operation & maintenance, continued monitoring, and responding to nonnative fish concerns. They will then bring it back to the Management Committee at a later date.
7. **Michelle Garrison and Jana Mohrman** will add appropriate detail to the White River Management Plan scope of work for the in early November and Colorado will issue an RFP will go out a month or two later. **Jana and Angela Kantola** will work with the Service's Regional Office to determine how to engage the Ute Tribe in this process early on.
8. The **Program Director's office** will begin drafting an issue paper/decision tree on reservoir screening to preclude nonnative fish escapement.

Attachment 2: Status of Action Items from the 2014 Sufficient Progress Letter

Concern	Criteria Affected	Recommended Action Items
General – Upper Basin-wide		
<p>Despite the Recovery Program’s extensive removal efforts, nonnative and aquatic invasive species continue to threaten survival and recovery of the endangered fishes in the upper Colorado River basin. Preliminary results from the most recent rotation (2011-2013) of Colorado pikeminnow population estimates indicate adults and sub-adults are in decline throughout the entire Green River sub-basin. Catch of sub-adults and adults in the Colorado River in 2013 were also near lowest observed in the history of this project. Decline of Colorado pikeminnow in the Yampa River has been linked to the persistence of nonnative predators; large-bodied predatory species of concern also appear to be expanding in other segments of critical habitat; and illegal introductions of nonnative species continues to expand. In 2012, the Colorado Pikeminnow Recovery Team was convened to review new information as it pertains to Recovery Plan revisions. The team’s preliminary assessment indicated that persistent low numbers of adult Colorado pikeminnow in the Yampa River may be caused by unacceptable densities of nonnative predators and that more effective management of nonnative fishes must occur before a change in status. The Service concurred and has deferred consideration of downlisting for this species for the time being.</p>	<p>1– Increases threat of extinction; 2 – Declining status of fish populations.</p>	<p>The Recovery Program needs to fully implement the comprehensive <i>Upper Colorado River Basin Nonnative and Invasive Aquatic Species Prevention and Control Strategy</i> and continue work with the States to implement the specific, tangible actions added to the RIPRAP in 2013 (Table 2.a), which in the aggregate have a high likelihood of stopping the expansion of invasive species and of reducing existing concentrations. Adequate progress has been made to control nonnative predator escapement from Elkhead and Starvation Reservoirs. CPW secured funding through CWCB’s Species Conservation Fund to reduce northern pike spawning habitat at Walton Creek. The Service agrees that the impacts of non-native fish on recovery of the listed species must be controlled. If Colorado is unwilling to pursue must-kill regulations throughout the Upper Basin in Colorado, we urge the state to pursue a comprehensive suite of alternative actions, in concert with Program partners, to achieve the necessary biological outcome.</p>
<p>Completion of a revised integrated stocking plan is behind schedule.</p>	<p>Hampers ability to 2 – Improve status of fish populations through stocking.</p>	<p>Revised draft sent for Biology Committee review July 31, 2014.</p>
<p>Downward trends in some humpback chub populations (particularly Yampa Canyon and in Desolation Canyon of the Green River) have been attributed to increased nonnative fish abundance and habitat changes associated with dry weather and low river flows. Declines in adult humpback chub catch rates for sites in the upper 45 miles of Desolation Canyon correlate strongly to the appearance and persistence of a smallmouth bass population. Declines in the proportion of first year adults (200–220 mm TL) in 2006–2007 support the idea that smallmouth bass predation may be suppressing the smaller <i>Gila</i>.</p>	<p>2 – Declining status of fish populations.</p>	<p>The Recovery Program has committed to reducing nonnative impacts to the humpback chub population in Yampa Canyon since 2001. In 2004, the Recovery Program transitioned Project 110 from a nonnative catfish control effort in Yampa Canyon to smallmouth bass removal. That effort is ongoing and is complemented by similar efforts upstream (Projects 125, 98a, and 98b) and downstream (project 123a). In Desolation Canyon, smallmouth bass (and other nonnative species) are removed during Colorado pikeminnow population estimates (Project 128) and during specific nonnative control trips conducted under Project 123b. Complete recommendations for and implement humpback chub broodstock development.</p>
<p>In 2008, the largest humpback chub population in the</p>	<p>2 – Declining status of fish</p>	<p>The Program needs to determine how to investigate age-0</p>

Concern	Criteria Affected	Recommended Action Items
<p>UCRB, the Black Rocks/Westwater core population for the first time dropped below the population size downlist criterion (MVP = 2,100 adults). In 2011, some recovery was seen with an adult population estimate of 2,157 in Westwater Canyon; however, UDWR reported a decline to 1,507 adults in 2012. The most recent Black Rocks adult population estimates in 2007–2008 were 345 and 287, respectively. During the fall of 2011, 78 individual adult humpback chub were caught in Black Rocks, and 112 in 2012, similar to the numbers caught in 2007 and 2008. CSU recently conducted a robust population analysis using Program MARK to generate population and survival estimates and capture probabilities for adult humpback chub captured for Westwater Canyon and Black Rocks combined from 1998 – 2012. These core population estimates were 1846 and 1718 for 2011 and 2012, respectively. CSU's analysis more clearly indicated that declines in the Westwater and Black Rock humpback chub populations are due to lapses in recruitment (i.e. adult survival rates have remained stable). PI's agree that reinitiating an age-0 monitoring component is advisable.</p>	<p>populations.</p>	<p>and age-1 humpback chub mortality (especially in Black Rocks/Westwater and Desolation canyons) as recommended in the Research Framework). The difficulty in working with these size classes is they can't be identified to species. The Program will develop a scope of work to investigate age-0 and age-1 humpback chub mortality. 200 age-0 <i>Gila</i> will be brought into captivity from Black Rocks/Westwater when conditions allow to develop a humpback chub broodstock.</p>
<p>Despite accomplishments that have reduced selenium concentrations throughout the Upper Basin, uncertainty remains as to the exposure thresholds that cause specific effects in the endangered Colorado River Fish. In addition, other forms of contamination (e.g. petrochemicals, heavy metals such as mercury, endocrine disruptors) could be impeding recovery.</p>	<p>2 – Declining status of fish populations.</p>	<p>The Recovery Program will support research and coordinate with the San Juan Program to determine dose response information related specifically to the endangered Colorado River fish as well as necessary remediation. Also, the Service will consult with EPA on proposed revised fish tissue-based criteria for selenium with respect to impacts on the endangered fish.. The San Juan River Recovery Implementation Program is conducting a population viability analysis for Colorado pikeminnow to determine how impaired reproduction, (linked to elevated levels of heavy metal s or selenium) would affect population dynamics.</p>
Green River		
<p>In 2013, 104 days were below 1,500 cfs and 47 days were below 1,300 cfs minimum summer baseflow targets at Green River, Utah.</p>	<p>Hampers ability to 1 – Improve habitat through augmented flows</p>	
<p>Delays in development of Reclamation's revised Green River hydrology model caused Utah to revise the Green River Flow Protection schedule</p>	<p>Delays 1 – Legal protection of flows needed for recovery.</p>	<p>Complete modeling work and maintain revised schedule to implement flow protection in FY 16-17.</p>
<p>Backwater synthesis report describing relationship of backwater development to sediment availability and peak</p>	<p>Delays ability to 1 – Improve habitat through augmented flows</p>	<p>Complete draft final report (anticipated summer, 2014) and launch evaluation of Green River flow</p>

Concern	Criteria Affected	Recommended Action Items
flows in Reach 2 and integrating biological and physical data on backwaters is behind schedule.		recommendations (scope of work for evaluating the recommendations in review; scope for conducting experiment to disadvantage smallmouth bass anticipated later in summer 2014).
Old Charley Wash, an important 'dry year' sampling site identified in the Larval Trigger Study Plan is currently unavailable as USFWS has been unable to renew lease with Northern Ute Tribe.	Hampers ability to 1 – Improve habitat through augmented flows	Service will continue government-to-government consultation with Northern Ute Tribe and request that the lease be renewed.
Tusher Wash diversion continues to entrain endangered fishes. PIT antennas installed in the Green River canal in March 2013 and operated throughout the irrigation season indicated entrainment of approximately 500 razorback sucker and 100 Colorado pikeminnow along with one humpback chub).	1 – Increases the threat of extinction.	The Program is planning a fish exclusion system for the canal. NRCS's rebuild of the diversion structure is scheduled to begin in fall 2014, pending completion of an EIS by NRCS. NRCS has agreed to incorporate fish passage into this structure; USBR is pursuing a fish exclusion system through a separate process.
Walleye captures have increased in upper and lower Green River; gizzard shad have been found in lower Green River backwaters since 2007 and have increased markedly over the past few years in lower Colorado River backwaters. Gizzard shad have the potential to significantly affect food web ecology in backwaters and the mainstem. An illegal population of walleye in Red Fleet Reservoir is also a problematic source of this species entering the Green River.	1 – Increases threat of extinction.	Red Fleet Reservoir has been recommended for reclamation (rotenone). (A microchemical analysis of otoliths from both the reservoir and the river detected emigration of walleye from Red Fleet Reservoir.) UDWR adjusted work to add spring and fall passes for walleye and gizzard shad removal in lower Green River in years when Colorado pikeminnow population estimates are not conducted.
Yampa River		
CWCB still needs to provide the accounting of past depletions for the Yampa River due in 2010; a back-casted baseline of current depletions; and a recommendation and justification addressing projected future depletions and whether or not additional instream flow filings or other flow protections mechanisms should be considered.	Hampers ability to 3 – Determine adequacy of flows.	CWCB is scheduled to complete accounting of past depletions using the StateCU model (Due date from YPBO - 1 st report July 1, 2010; 2 nd report July 1, 2015). The depletion accounting report will include a discussion of the need for flow protection (which would require a peak flow recommendation). A contract for the irrigated acreage assessment was awarded in February 2013. Another contract still needs to be awarded to update the dataset. The models will be updated through 2010 or 2011. Colorado has given high priority to the Yampa and Colorado river basins portion of this work. .
Persistent decline of Colorado pikeminnow in the Yampa River is linked to the persistence of nonnative predators.	1 – Increases threat of extinction; 2 – Declining status of fish populations.	<i>See recommended action item identified for General Concern #1.</i>
Efforts to reduce densities of smallmouth bass in Little Yampa Canyon and other reaches of the Yampa River appear to be hampered by the immigration of smallmouth bass adults and recruits from adjacent reaches, particularly upstream sources that sustain propagule pressure and the proliferative/invasive capacity of this species. Escapement of	Hampers ability to 1 – Reduce threat of extinction by decreasing numbers of nonnative fish.	CSU completed the programmatic synthesis of smallmouth bass removal efforts , providing a comprehensive evaluation of the Program's removal efforts. The expanded Yampa River "surge" effort to target smallmouth bass was continued in 2013 and 2014. CPW has committed to re-setting the Elkhead Reservoir

Concern	Criteria Affected	Recommended Action Items
adult smallmouth bass from Elkhead Reservoir remains problematic. Population estimates for adult bass in Little Yampa Canyon in 2013 were 5 times that of 2012. Subadult density in this reach was also very high.		sportfishery in fall 2015 (with public involvement beginning in fall 2014).
Efforts to reduce densities of northern pike in the Yampa River appear to be hampered by immigration from the buffer zone and upstream sources (Catamount, Elkhead, and the upper river).	Hampers ability to 1 – Reduce threat of extinction by decreasing numbers of nonnative fish	Pike removal is being expanded up to Steamboat Springs in 2014. CSU is conducting a programmatic synthesis of northern pike removal efforts (2011-2012) to evaluate current removal efforts in the context of northern pike life history throughout the Yampa River drainage (draft final report due to Recovery Program 6/1/14). <i>See recommended action item identified for General Concern #1.</i> CPW should convert the Stagecoach Reservoir northern pike marking study into a removal effort in 2015.
The Recovery Program and Colorado Parks and Wildlife need to develop a drainage-wide action plan and timeline to address Yampa River northern pike management	Hampers ability to 1 – Reduce threat of extinction by decreasing numbers of northern pike.	CPW has continued work at Catamount Reservoir to reduce northern pike. CPW has plans to eradicate the illegally established population of northern pike in Chapman Reservoir, as well (see also discussion for Yampa III.B.1.d.(1)(b)). Ice fishing tournament at Stagecoach in February 2014 required must-kill for northern pike and walleye caught by tournament participants. CPW has secured funding for habitat improvement at Walton Creek. The PDO and CPW met on March 25, 2014 and determined that the PDO's concerns with the Yampa Aquatic Management Plan raised in May 2013, which were largely focused on future management of northern pike in Stagecoach Reservoir, were subsequently addressed through finalization of the Basinwide Strategy (see action item #1) and development of the NNF addendum to last year's Sufficient Progress memo (see item #2). The PDO and CPW agreed that revision of the Aquatic Management Plan is not necessary / worthwhile, because the more recently approved Basinwide Strategy and Sufficient Progress addendum accurately reflect current management approaches. <i>See recommended action item identified for General Concern #1.</i>
Duchesne River		
Extent of contribution of smallmouth bass or walleye produced in the Duchesne River below Starvation and entering Green River remains unknown. Ute Tribe apparently not currently conducting nonnative fish removal.	1 – Increases threat of extinction.	Program will rely on findings of project # C18/19 to determine how to proceed. UDWR installed a temporary screen in the spillway channel at Starvation Res in 2014 and is pursuing a more permanent solution. <i>See recommended action item identified for General Concern #1.</i>

Concern	Criteria Affected	Recommended Action Items
White River		
Schedule in the approved scope of work for developing the White River Management Plan appear to be slipping	Hampers ability to 1 – Improve habitat through protected/augmented flows; and 3 – Inadequacy of flows.	CWCB is working on contracting and the Program Director’s office will continue to track progress over the next year. Previously established due dates were: model completion fall 2014; plan completion winter 2015; and PBO summer 2015. The Water Acquisition Committee will examine these dates for revision on September 8, 2014.
Smallmouth abundance has increased in the White River,. Sampling in 2012 indicated that bass densities are highest in the uppermost section below Taylor Draw Dam and tapered off to relatively low densities approximately 20 miles downstream. Sampling in 2013 shows that fish spawned in 2012 were captured further downstream into Utah, resulting in a large increase in fish captured in that reach during 2013. There was no evidence of depletion in any of the reaches sampled more than once and spawning adult bass and evidence of recruitment were more concentrated in the uppermost sections (above Douglass Creek). Efforts to reduce the abundance of smallmouth bass through electrofishing were as high as possible in 2013.	1 – Increases threat of extinction.	Efforts to reduce the abundance of smallmouth bass were intensified in 2013 and again in 2014 with increased effort by both USFWS and CPW in the Taylor Draw to state line reach in 2014. Angling (conducted by agency personnel or an incentivized public event) could prove useful in this river (however, public access is very limited, so utility is uncertain). CPW should pursue basinwide ‘must kill’ regulations for SMB and other worst of the worst nonnative predators. The Recovery Program continues to support and encourage the multi-agency effort to designate White River as native fish conservation area. <i>See recommended action item identified for General Concern #1</i>
Colorado River		
The Recovery Program still struggles to meet flow recommendations in drought years. The Service emphasizes the importance of meeting the flow recommendation.	Hampers ability to 1 – Improve habitat through augmented flows; and 3 – Inadequacy of flows.	The Program is working to improve the overall strategy for flow augmentation in the 15-Mile Reach to be considered each spring and adjusted as the year progresses, addressing all possible sources of water, priorities, antecedent conditions, projected flows and supplies, including OMID, Grand Valley Project, CFOPS, etc. FWS and Reclamation are exploring opportunities (and would include Colorado and the River District in these discussions) to continue delivering Ruedi water (or a portion thereof) to replace the release of 10,825 acre-feet of Ruedi Reservoir water that concluded in 2012. In addition, the OMID Canal Automation Project is expected to provide about 17,000 af of water in most years. The check structures in the OMID project are complete and will result in partial water savings beginning in the 2014 (current) irrigation season. The project will be fully implemented in 2016.
In April 2013 (not a baseflow month), flows at Palisade dropped below 810 cfs for 29 days creating an 'April Hole' . Possible contributing factors included: 1) cold weather shutoff of mid-elevation runoff; 2) irrigation season starts; 3)	Hampers ability to 1 – Improve habitat through augmented flows	Grand Valley Water Users cut back their irrigation diversions during the 'April Hole' by >800 cfs. CWCB has reviewed hydrology and characterizes 'April Holes' of the magnitude seen in 2013 as very rare. In the future,

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Shoshone call 'relaxation'; 4) low storage in upstream reservoirs resulting in conservative management of reservoir releases.		water users and the Service will address the potential for this situation to recur as part of the normal HUP calls regarding water management for the 15 Mile Reach and determine what measures if any should be taken based on current conditions. This should avoid a repeat of the extreme low flows in the spring. The Service and water users will formalize specific recommendations prior to the 2015 irrigation season to deal with the situation should it recur in the future and implement those recommendations as needed to avoid or mitigate April low flows.
CWCB still needs to provide the depletion accounting report that was due July 1, 2010.	Hampers ability to 3 – Determine adequacy of flows.	See first item under Yampa River.
CFOPs report (evaluation of options for providing and protecting additional peak flows to the 15-Mile Reach) overdue.	Hampers ability to 1 – Improve habitat through augmented flows; and 3 – Improve flows.	CFOPS Phase III (a due date of Sept 30, 2010 was identified in the 2010 RIPRAP) draft report distributed April 2; final report anticipated by September 1, 2014.
Screen operators attempt to operate screens as much as possible, but in low-flow years when screen operations are reduced per operations agreements. In 2013 alone, 17,865 native fish were salvaged from the GVIC and GVP canals after the irrigation season.	Hampers ability to 1 – restore habitat through fish passage and screens.	HUP call participants will continue to discuss screen operation with the goal of more frequent operation at the GVIC canal (recognized as the oldest and most problematic design). The Program will continue to evaluate ways to improve screening operations and methods, and the Program will continue to fund salvage operations of fish remaining in the canals at the end of the irrigation season.
Walleye captures in the Colorado River went from being 'rare' during 2003-2009 to 'common' in 2010, and then increased dramatically by 2013. Distribution within the lower reach in 2010 appeared to be restricted below RM 80; however, by 2013, captures extended upstream to RM 112, indicating an upstream range expansion. Unlike smallmouth and largemouth bass, whose primary distribution is in the upper reach, walleye directly overlap in habitat with small size classes of both Colorado pikeminnow and razorback sucker.	1 – Increases threat of extinction.	In 2013, because of increased numbers of non-native piscivores collected during spring Colorado pikeminnow sampling, two additional passes were added from Cisco to Dewey Bridge and one pass was added from Dewey Bridge to Potash. The Service also is adding 2014 fall passes to remove walleye in lower Colorado reaches (Cisco to Potash) and UDWR is adding removal passes for the Lower Green.
Highline Lake spillway barrier net was to be replaced in 2013 (replacement net received in 2011, but could not be installed due to lake conditions; major dredging at Highline occurred in the fall of 2013 and net installation deferred to early 2014 [prior to refilling the Lake]). 2013 outlet testing resulted in uncontrolled releases.	Hampers ability to 1 – Reduce threat of extinction by preventing escapement of nonnative fishes.	CPW has installed replacement net and purchased tube nets to be used to prevent fish escapement in future annual outlet testing.
Gunnison River		
The high density northern pike source population in Crawford Reservoir remains of extreme concern due to its invasive potential in the Gunnison River.	1 – Increases threat of extinction.	CPW began mechanical removal of northern pike from Crawford in 2014 removing an estimated 74% of the adult population in the reservoir.

Concern	Criteria Affected	Recommended Action Items
<p>Illegal introduction of smallmouth bass in Ridgway Reservoir was confirmed in 2013. Sampling demonstrated multiple size classes, but low densities of adult fish, indicating the population may be expanding from initial introduction. Densities of smallmouth bass near the spillway were high, indicating a high risk of escarpment from reservoir spilling.</p>	<p>1 – Increases threat of extinction.</p>	<p>Program Partners are working on a response. Tri-County is operating the reservoir to prevent spilling in 2014, which appears to be feasible. CPW is considering regulations, screening, chemical reclamation, and harvest incentives.</p>
<p>Dolores River (none)</p>		