Biology Committee Meeting
December 10, 2004
Grand Junction, Colorado

Biology Committee: Tom Chart, Tom Nesler, Tom Pitts, Melissa Trammell, Gary Burton, Kevin Christopherson, Dave Speas, Kevin Gelwicks, John Hawkins and Bill Davis (via phone for part of the morning).

Other participants: Dave Irving, Kevin Bestgen, Bob Muth, George Smith, Pat Nelson, Angela Kantola, Chris Keleher, Trina Hedrick, Chuck McAda, Russell Findlay, Patrick Goddard, Matthew Andersen, Frank Pfeifer.

Assignments are indicated by ">" and at the end of the document.

Convene: 8:00 a.m.

1. Review agenda and previous conference call summary - The summary was approved as written unless Committee members find changes later.

2. Review reports list - Gunnison Phase II final draft won't be submitted to the Biology Committee until February 15 (>Dave Speas to confirm that date).

3. Summary and discussion of nonnative control workshop and FY05 workplan adjustments - Tom Nesler said he didn't think the workshop discussion indicated a need to add any extra trips. Other conclusions included: slow down when electrofishing and focus in concentration areas; increase efforts to remove small smallmouth bass; whether we need a second year northern pike population estimate in the upper Yampa reach; whether maintenance control of pike in the Green River can be picked up by other nonnative fish control work; consideration of seining to determine sources of pike production throughout Yampa; and possibly work to determine upstream sources of northern pike escapement in the Yampa. Dave Speas added that there also were comments regarding the need for smallmouth bass removal in reach 1 and Lodore in the Green River. Evaluation of native fish response in the Green and Colorado rivers also was discussed. Tom Nesler noted that the Biology Committee's intent for native fish was to start with the Yampa evaluation and expand beyond after we see how that goes. Kevin Christopherson said the Yampa work is acceptable for immediate needs, but in the long term we need to evaluate native fish response in Utah. Melissa said she'd like to see a native fish evaluation in the Green River just below the Yampa. Kevin Christopherson emphasized it's important to get baseline data.

   - The group discussed whether we should discontinue the population estimate in the upper Yampa reach (project #98c, $46K) or if doing so would compromise our ability to provide data required to justify expanding removal upstream if we later determine that is necessary. Bob Muth suggested the funds might be better spent on a public/landowner outreach effort in

that reach in FY 05. Kevin Christopherson suggested Colorado needs to identify the threshold of downstream movement above which expanding control upstream would be justified. He suggested the criteria should be discussed before the decision on the tagging study was made. The group agreed to this approach. Tom Nesler reiterated that if downstream movement of pike from that reach inhibits our ability to control fish in the downstream reaches, then expansion would be justified. Regardless, CDOW and/or the Program would still look into ways to control the sources of pike in that reach. Bob Muth recommended asking CDOW to outline their management strategy for that stretch of the Yampa River. Tom Nesler will take the lead on that. Melissa asked if CDOW will accept a downstream movement criteria recommendation from the Biology Committee and Tom said it will need to be defensible. Tom also emphasized that advance work with landowners and the public will be needed before control efforts could be expanded. Melissa recommended that Colorado's portion of the budget for that scope of work go to public relations with landowners and such, and that the Service's portion of the budget go toward a one-pass marking effort and put the rest of their effort to downstream control efforts. Frank Pfeifer recommended putting all of the funds in that scope of work toward increased removal effort in the Hayden-Craig reach, instead (and noted that there's no concern about electrofishing impacts to native fishes in that reach, either). Tom Nesler said he could agree with that, but would still like to do one more tagging pass to increase the number of marked fish. The group agreed to modify 98c to do one tagging pass in the Steamboat reach and the rest of the effort will be directed to removal in the Hayden-Craig reach. >Dave Irving and Tom Nesler will determine how this will be worked out and revise the scope of work.

- Bob Muth asked how we would use information on sources of northern pike in the Yampa River. Several members expressed a desire to determine if the fish could be controlled at the source so removal efforts would not need to be continued indefinitely.

- Tom Pitts suggested we need a strategy paper (10 pages maximum) for northern pike control on the Yampa River, noting it should address all the options and how those various options would affect eventual downlisting and delisting. Kevin Christopherson and Dave Speas endorsed this idea. Dave said he's started a scope of work along these lines. Bob Muth said he thinks the components for this paper are already available; >his office will prepare a draft strategy paper by the January meeting (and will be contacting PI's etc., for input). Meanwhile, >Tom Nesler will outline CDOW's management strategy for the Yampa, and include a description of which landowners currently allow access, would not allow access if we expand removal, etc. Tom Chart suggested that perhaps the landowners and/or public might be motivated if we can show them (from Pat's bioenergetics work) what the fishery could look like in that area.

4. Escapement Criteria – Pat Nelson questioned whether we have data needed to provide a biologically-based criteria at this point, saying it seems it should be based on the level of nonnative fish that can coexist with self-sustaining, recovered populations of native fish (and what level of nonnative fish control would be required to maintain that level of nonnative fish). Kevin Christopherson said he thinks we have to make an educated guess. Kevin suggested the

threshold would be if downstream movement exceeds 50% of the exploitation rate in the downstream reach in a given year. Tom Nesler outlined the approaches to criteria that have been suggested so far: a) if more than 10% (or some other number) of the northern pike population (or of tagged northern pike) in the upstream reach moves downstream into the reach of concern; b) if pike moving into the reach of concern from upstream are 50% or more (or some other number) of the depletion rate for that year in the lower reach; c) if the numbers of fish moving into the target area exceeds target density of controlled species in that target area; and Melissa added d) pike densities should not exceed Colorado pikeminnow densities (existing or desired); and e) if numbers of pike moving into the target reach exceed the average number of pike removed from that reach in one pass. Bob Muth said the bottom line is whether the movement inhibits our ability to effectively manage northern pike and see a positive response from native fishes, so we need to define what it means to effectively manage northern pike. Melissa noted that Gordon Mueller says you have to remove 90% of the predator species to have an impact on the prey species (we need to find out the basis in the literature for this claim; apparently is based on his work in Cibola High Levee ponds); >Melissa will check on this). If this criteria is adaptive (which it probably must be), Bob Muth suggested that we define effectiveness as removing 50% of the northern pike and then see if that results in a native fish response. Melissa asked if we've agreed to density-based criteria as opposed to percentage-based criteria. Melissa said that in critical habitat, as a rough estimate, there are approximately 2.3 pikeminnow per mile in critical habitat based on an average of 300 pikeminnow in 130 miles of critical habitat, and in the 74-mile treatment reach there were 13 pike per mile prior to removal; and suggested that we want to decrease pike so they are equal or less than pikeminnow density. The group agreed to this approach. Kevin Bestgen noted that the pikeminnow population estimate was not made for the entire critical habitat reach and the estimate can only be applied to the ~74 miles the estimate covers. Kevin Christopherson proposed the following interim criteria: if we can't achieve 2.3 pike/mile in 3 passes per year within X years, then that would trigger expanding mechanical control upstream or source control upstream. (Kevin noted that one reason he sees this as interim is that 2.3 suggests that only competition is important, and predation is not.) John Hawkins said in 5+ passes this year they were only able to reduce the density to 4 pike/mile, so he recommended against constraining it to 3 passes. Kevin countered that we don't want to set a criteria that leaves the door open for an unlimited number of passes. Tom Nesler suggested at least 3 passes and Melissa suggested the number of passes covered by the current scope of work. The group agreed to the following interim criteria for northern pike: if we can't achieve and maintain a pike density that is equal to or less than the current density estimate of pikeminnow with current levels of removal by the end of the 2005 field season, then that would trigger expanding mechanical control upstream and/or implementing source control upstream in 2006. (Bob Muth noted that the bottom-line measurement of effectiveness is native fish response.) Dave Speas suggested that we may not need to continue the upstream tagging program. The group agreed that the current density estimate of pikeminnow would be based on the population estimate analysis for 2000-2003. Kevin Bestgen noted that the current Yampa River pikeminnow density is low and this estimate has one of the broadest confidence intervals of any of our pikeminnow population estimates.

Smallmouth bass criteria - Melissa suggested the criteria for smallmouth bass in the Yampa River be to achieve and maintain early 1990's levels of smallmouth bass, and if we can't do that, we would expand smallmouth bass mechanical control beyond the 5 and 12-mile treatment areas into all of critical habitat and the Craig-Hayden reach. Pat suggested the goal for smallmouth bass in the Colorado River is 0/mile; Kevin said Utah's goal is to demonstrate we can have an effect at the current level of control (one large treatment reach). With regard to Elkhead, Pat said we have to decide whether to translocate fish there over the next 2 years. Melissa asked if Colorado would agree not to translocate fish to Elkhead during the next 2 years when anglers won't be able to fish for them, anyway and Tom Nesler said no. So, fish will be transferred to Elkhead during construction. The group returned to discussion of target density for smallmouth bass in the Yampa River. Tom Nesler asked if 50% of current density would be an appropriate target. John Hawkins said in their 8+ pass effort in the 12-mile treatment reach, they reduced an estimated 110 fish (>200 mm) per mile to 34 fish per mile. Kevin Bestgen said they did not detect a native fish response subsequent to control efforts this year, but the group recognized there is likely a lag time. Bob Muth said that if Gordon Mueller's recommendation for 90% nonnative reduction has a good basis, perhaps that should be our target. Patrick pointed out that this criteria can't be achieved in the large Green River reach at current levels of effort (and Kevin Christopherson added that higher target densities of smallmouth on the Green River may still result in the desired native fish response in the Green River because there's a small-bodied fish population there that can buffer the smallmouth bass predation). Bob Muth recalled that Kevin Christopherson suggested we may want to consider other methods of control for smallmouth bass in the Green River (Bob encouraged beginning some pilot projects along those lines now). Tom Nesler emphasized the importance of control in the Green River where young endangered fish occur. Melissa asked if we might want to set the criteria of achieving a target density and/or achieving a native fish response. Kevin Bestgen pointed out the importance of controlling the small bass. John Hawkins said he thinks we've agreed to a more intensive effort at removing the small fish and also using different tags and noted the difficulty of estimating the abundance of small bass. Melissa asked if we might set the criteria for small bass that is a relative proportion to adult smallmouth. Bob Muth suggested we should wait to use the results of the bioenergetics work Pat Martinez is doing to set the target density for adult smallmouth bass. The group agreed to an outline criteria for adult smallmouth of achieving or maintaining a target density of adult smallmouth bass (possible ways of determining that target density include: based on results of Pat Martinez's bioenergetics work in Colorado for the Yampa; and on the Green River, as determined by the density at which we maintain the current native fish community); if this is not achieved by the end of the 2006 field season, then that would trigger exploring other control methods, expanded treatment, discontinuing relocation of fish in Elkhead, etc.). Bob Muth said we need to establish the criteria within the next year to meet requirements of the Yampa PBO. Kevin Christopherson said demonstrating a response from the native fish community is the second step for Utah; right now we're still at the stage of determining a detrimental effect on the nonnative fishes (but we do need to begin the native fish work in order to establish a baseline from which to judge a response). The criteria for small bass would be based on the results of the work on small bass in the Yampa 12-mile treatment reach. Melissa summarized that we've developed a draft

outline for smallmouth bass criteria, and we need to set a deadline of one year within which to finalize that criteria.

5. Summary and discussion of Nonnative Control Workshop and FY05 workplan adjustments (agenda item #3), continued.

   a. Nonnative Removal SOWs - >The Program Director's office will work with PI's and make recommendations for modifications (starting with a bulleted list of major changes to each SOW provided to the Biology Committee and the PI's within 2 weeks, then the PI's will provide revised scopes of work no later than January 10). Pat noted that one proposal will be $13K for two lightweight rafts with lightweight generators in Vernal that will hopefully allow work in the Yampa River at flows as low as 300 cfs. Tom Nesler asked for a discussion about whether we want to continue to try to control northern pike in the Green River or if those resources should go into other work.
   b. Starvation Reservoir Escapement SOW - Deferred (Pat will provide recommendations with aforementioned bulleted list).
   c. Larval Drift SOW - Deferred (Pat will provide recommendations with aforementioned bulleted list).
   d. Duchesne nonnative SOW - Deferred (Pat will provide recommendations with aforementioned bulleted list).

6. Confirm date for next meeting and review agenda items: Next BC meeting scheduled for Jan 21, following Annual Researcher's Meeting (likely will require a full day). Tom Nesler said the researchers meeting will be at the Holiday Inn and a call for papers will come out very soon.

Adjourn: 12:15 p.m.

ASSIGNMENTS

Dave Speas will confirm that the Gunnison Phase II final draft will be submitted to the Biology Committee by February 15.

Dave Irving and Tom Nesler will modify 98c to do one tagging pass for pike in the Steamboat reach and direct the rest of the effort to pike removal in the Hayden-Craig reach.

The Program Director's office will prepare a draft strategy paper for Yampa River northern pike control by the January Biology Committee meeting (and will be contacting PI's etc., for input).

Meanwhile, Tom Nesler will outline CDOW's management strategy for the Yampa, and include a description of which landowners currently allow access, would not allow access if we expand removal, etc.

Melissa Trammell will find out the basis in the literature for Gordon Mueller's claim that you have to

remove 90% of the predator species to have an impact on the prey species.

The Program Director's office will work with PI's and make recommendations for modifications (starting with a bulleted list of major changes to each SOW provided to the Biology Committee and the PI's within 2 weeks, then the PI's will provide revised scopes of work no later than January 10). The bulleted list of changes will include recommendations for the Starvation Reservoir escapement, and Duchesne River nonnative fish control SOW's, as well as the larval drift SOW.