

**Biology Committee Meeting**  
**January 15-16, 2004**  
**Moab, Utah**

Biology Committee: Frank Pfeifer, Tom Nesler, Tom Pitts, John Hawkins, Melissa Trammell, Tom Chart, Gary Burton, Mike Hudson, Bill Davis, and Kevin Gelwicks.

Other participants: John Wullschleger, Chuck McAda, Dave Speas, Bob Muth, Rich Valdez, Tom Czapla, John Hayse, Tim Modde, Doug Osmundson, Chris Kitcheyan, Kevin Bestgen, Pat Nelson, Angela Kantola, Tyler Abbott, Ray Tenney, Dave Rees, Julie Jackson, and Ron Brunson.

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

**Thursday, January 15**

1. Review agenda and assign a timekeeper; review previous meeting summaries/action items - The summary was approved as written. With regard to the previous meeting assignment to review catfish data, Chuck McAda said Kevin Christopherson hadn't discussed this with him further, but he didn't believe the data contain useful information; the Committee agreed.
2. Reports list - The Committee reviewed and made necessary revisions to the reports due list.
3. Effects of stage fluctuations on young Colorado pikeminnow (Modde & Kitcheyan) - Gary Burton said the link inferred in the text of the report (although not in the conclusions and recommendations) between fluctuating flows and ice breakup is weak, especially considering the Hayse, et. al. 2000 report (which refutes that link). Bill Davis agreed, citing examples of where potential effects which should have been stated as hypotheses are overstated. Rich Valdez said the apparent discrepancies between his work and Hayse are due to different conditions and that severity of the winter appears to have an effect on ice jams and formation of frazzle ice. John Hayse said his work occurred in just as severe a winter, and they found no effect from flow fluctuations (800-3,000 cfs). Bill Davis asked what portion of the Colorado pikeminnow would be expected to be in the sampling area (as opposed to having moved downstream) when sampling was begun. Chris said ice was dismantled in backwaters down in the Ouray area, but not in the reaches they observed above Ouray. Chris also observed ice breakup in 2003 when flows were increased. Much depends on environmental conditions, for example, ice thickness at the time of increased flows. John Hawkins clarified that stage fluctuations were observed at the study sites due to ice jams, but that the link to Flaming Gorge flow fluctuations is speculation. Rich said he observed that ice jams always seemed to form below Bonanza bridge, near Ouray Refuge and at the Ouray Bridge. Subsequent phenomena of backwater flushing may be missed if observations aren't continuous. Bill asked about the bioenergetics model, noting that the link should be between increased fish activity and any environmental change (not just human-induced change). >Gary et. al will submit written comments by January 31. Frank will turn the

report around as soon as possible, but will have to check with Chris' supervisor, since he has moved on to a new job. >Frank will then provide a date when the report will go back to the Biology Committee. Tom Pitts asked for clarification about the word "suggest" in the first recommendation (page 22).

4. Flaming Gorge flows - Tom Chart said WAPA has identified a need to increase power generation at Flaming Gorge to offset losses at Glen Canyon due to research flows (similar to last year). WAPA has requested fluctuations through remainder of January (will reevaluate the need for further fluctuations after that). Reclamation, WAPA, and the Service agreed to a 800-2,000 cfs (15,000 af cap) fluctuation (resulting in up to a 1/10 meter stage change at Jensen). Tom encouraged Program participants to attend the flow work group meetings. >Tom will post the notice of the next meeting to the listserver.

5. Ecological and physical processes during spring runoff and summer baseflows in the Colorado River ("15-Mile Reach bug report") (Tenney, Miller & Mussetter) - Although the report was funded outside the Program, Tom Pitts said the water users and the River District would like it to go through the official Committee report review process. Unfortunately, most Committee members haven't yet reviewed the report. Bill Davis noted that the report doesn't clearly state whether peak flows are limiting overall carrying capacity. Frank asked about the purpose of reviewing the report after 3 years if data are being collected for 2 more years. Ray said the very low and very high flows in the later years made it prudent to continue collecting data. Doug Osmundson asked Dave Rees about the basis for some of the report's conclusions about the effects of peak flows. Frank again asked the *need* to review this report now when the work is still ongoing. Tom Pitts said the funders would like to know if this work is going in the right direction and would like the Committee's review of the methodology, etc. Frank he believes the work is generally on the right track (but shouldn't be clouded by making conclusions prematurely). Tom Nesler agreed, noting that the study period currently covered in the report didn't provide conditions to show whether or not peak flows have a greater or lesser effect than late summer storm events, etc. on the benthic community. Doug asked why there was no attempt to relate bug standing crops to mud class. Dave agreed that would have been good to do. Doug asked if there is a direct correlation between turbidity and bug abundance. Melissa said she'd like to see the next two years of data added in to the report. Dave said that they do know that in the three years of their study (1999-2001), peak flow had little effect on standing bug crop, and that the standing bug crop went down with each storm event. Doug said he thought 1999 did not show that. Doug suggested the geomorphology panel should review the report; the Committee agreed (after the additional two years of data are incorporated). Ray Tenney said the work has been submitted for journal publication. The Committee agreed they would review the report after the additional two years of data are incorporated (peer review will need to be conducted again). After the two years of data have been analyzed this spring (but before the report is ready for review), the Committee would like the authors to give them a presentation on their findings. Tom Pitts said the water users will let the Committee know in February how they plan to proceed with the report. >Committee members who wish to provide comments on the current version of the report will submit those by the end of January. >Ray Tenney will provide the Committee with a proposal on what will happen with this report.

6. Lower Basin Issues

- a. Lower basin humpback chub workshop - Tom Chart outlined the independent review panels' findings and recommended that the Committee should discuss and consider them. Tom Czapla said the workshop focused on comparing methodology between the Upper and Lower basin population monitoring. Bill Davis added that the workshop was precipitated by a need for an accurate population estimate (the estimate of 1,100 humpback chub in Grand Canyon was judged to be in error). Tom Czapla and Tom Chart agreed that the panel review doesn't suggest anything we haven't already considered. Tom Chart said he does think we should discuss if there's more data we can be collecting; if trend is a key issue, what are the implications of sampling three years on and two years off; etc. Bob Muth noted that the panel member's backgrounds are in commercial fisheries, and asked whether this might affect their understanding of monitoring rare fishes. Kevin Bestgen said he thought several of the reviewers have adequate background to provide valuable insight on rare fish monitoring. Tom Chart summarized that there is concern about precision of humpback chub estimates and he wonders with what sort of certainty the Service will be able to make a call on that. Doug Osmundson noted that there may be a large portion of the population we aren't sampling and can't sample, thus should we be focusing on population estimates we'll never really get or use catch per effort monitoring, instead? Tom Czapla said that the chub workshop summary suggests convening an upper/lower basin workshop, one purpose of which would be to "help develop criteria for delisting and downlisting," however, those criteria are already identified in the recovery goals. Rich said the current estimates in Grand Canyon don't sample the whole population and don't provide a reliable estimate. The trend data in the lower basin is complicated by the fact that we don't have a good age-length relationship for humpback chub. Tom Nesler suggested we need to have our own process check to consider the data we already have and will be collecting and how that will meet the recovery goal criteria. Bob Muth said the plan is to discuss this in a workshop this spring or summer once we have at least one estimate for each humpback chub and each Colorado pikeminnow population. The Committee agreed we need to have this workshop before we have a joint workshop with the lower basin. >Bob Muth will provide a recommendation on when to hold this workshop and how it should be structured at the February meeting.
- b. Status of Service/Arizona letter. Bob Muth said a letter was drafted from the Service and Arizona to the chair of the AMWG calling for a multiple pass mark recapture population estimate in the mainstem and LCR in 2004, but Arizona now says they won't sign the letter until there is some resolution on the outcome of the humpback chub workshop. Bob said he believes this letter could just come from the Service.
7. Annual report review process - Bob Muth said his office has been reviewing the annual reports, many of which are somewhat deficient in content and format. Bob distributed a table showing revisions that need to be made to the habitat restoration,

nonnative fish management, propagation, and monitoring/research reports. Bob said his office hopes to finish reviewing the reports and get them finalized in February. Bob emphasized the need for the annual reports to be rigorous.

8. Review revised/placeholder scopes of work - Bob Muth said his goal is to get a good scientific review of these new and revised scopes of work and end up with the annual budget about \$200K in the black.

### Nonnative Fish Management

- a. Colorado River smallmouth bass (replaces old #126) - Chuck McAda said they'll clarify text that says "nonnative fishes" to make it clear that they're not dealing with channel catfish. The scope also will specify exactly what species will be provided to Pat Martinez for the isotope study (>Tom Nesler will inform Chuck and the Biology Committee of this). The electrofishing unit purchase is for back-up, which will be noted in the scope of work.
- b. Green River northern pike (#109) - The workshop recommendation was to continue this work, as is, so the scope hasn't been revised. Ron Brunson said they may expand their sampling area. Tom Nesler pointed out that the only measure of effectiveness for this work is declining catch rate. Mike Hudson said he'd rather add an analysis of depletion once the data are collected than do a mark-recapture; the Committee agreed. The scope of work should reflect any expansion of northern pike removal (in time and/or area) discussed in the Green River smallmouth bass removal scope of work.
- c. Green River smallmouth bass (replaces old #123) - Mike said one way of streamlining this work would be to use electrofishing on only two passes to identify concentration areas, then focus on those concentration areas with all gear types. Frank suggested there may not be specific concentration areas. Smallmouth bass will be tagged with floy tags on the first pass. Need labor rates. Equipment costs > \$1K need to be justified. If equipment costs won't be incurred in FY 2005, then remove those costs. The FY 04 total needs to be corrected.
- d. Yampa Canyon catfish and bass (#110) - Title will be revised to include channel catfish. Statement "smallmouth bass... is now considered common or abundant throughout much of the upper Colorado River basin" will be changed to Yampa River and will be cited. Frank said CDOW is still considering whether they want catfish to be translocated into Kenney Reservoir (which would require follow-up monitoring at CDOW's expense). Under goals and objectives, the clause about humpback chub response will be deleted. References to "removal reaches" need to be cleaned up. Tom asked the PI's to add a sentence that smallmouth will be provided to Pat Martinez for isotope analysis. Clarify that work is done April-June because that's when flows allow. Needs labor rates. Explain \$2,500 equipment costs.

- e. Middle Yampa (critical habitat) pike (98a). Tom Nesler asked about targeting high-density areas. John said the first and second pass would cover the whole river and subsequent passes would sample high density areas several times in one trip. Thus “passes” after the first two should be referred to as “trips” not “passes.” John Hawkins said the trips do overlap somewhat in terms of people and equipment, but he set a target of 70-75% removal, which will require about 6 passes, and the costs are based on 6 10-day trips between April and mid-July. The Committee discussed and diagramed the logistics of the sampling scheme for this project and the bass removal project at some length, hoping to find some potential cost savings. None were found given the effort Hawkins’ believes is necessary to achieve adequate depletion (which also is important to tie into the native fish response study). John will carefully review the two scopes to see if any streamlining can be done. Researcher vs. technician labor rates need to be clarified. Clarify “Colorado pikeminnow and roundtail chub will also be captured and PIT tagged to monitor predation pressure by northern pike” (roundtails won’t be pit tagged). Justify boat purchase. Needs labor rates.
- f. Middle Yampa (critical habitat) bass (125). John said bass capture probabilities are much lower and 50% removal would require about 10 passes. Scope of work will increase by \$2,500 if Hawkins is expected to floy-tag the fish they translocate (>Nesler will check on this and whether the Division can bear this cost). Last sentence under “Concentration Area sampling (Lily Park) should refer to bass, not pike. Change page numbering to delete reference to catfish. Needs labor rates.
- g. Craig to Carpenter Ranch Bridge pike (98B) - Tom Nesler said he doesn’t believe this study will collect data needed to meet objective 2, “reduce production of young northern pike by removing spawning adults.” Frank agreed. Task 2 will be changed to read “transport all northern pike to ponds...” Committee members asked about putting pike into ponds that connect to the river. If we’re going to do this, we need to let the public know why (that pike seek low-velocity habitat at that time and thus aren’t expected to return to the river). The fish caught early in the season might be moved to Rio Blanco, instead (>Tom Nesler will look into CDOW moving the fish). Needs labor rates. Break out budget for FY 05.
- h. Yampa above Carpenter Ranch Bridge pike tagging (98C) - Northern pike will be both pit and floy tagged, but smallmouth bass will be floy tagged. Add labor rates. >Tom Nesler will prepare a draft proposal for a downstream pike movement criteria/threshold at which the Program would consider expanding pike removal upstream (hopefully by the next Biology Committee meeting).
- i. Evaluating techniques to improve capture efficiency of catfish (NEW) - Frank Pfeifer said he doesn’t believe the Program has enough funds for this in 2004. Tom Nesler suggested an efficiency study would be more appropriate on the Colorado or Green river where we are having difficulty catching catfish.
- j. Yampa River native fish response (NEW) - The Committee asked Kevin Bestgen if the design of this study is still appropriate. Kevin said the study area will need

to be doubled since the control/treatment reach doubled, so FY 05 or 06 costs may need to be increased (for work to be conducted in the fall of 2004 and 2005) (some carry-over funds may be available to cover FY 05).

- k. Utah native fish response (NEW) - Mike Hudson said that monitoring in San Rafael could be deleted (which would save ~\$25K), but at the very least, we need to monitor in the middle Green. We also need to measure response of adult and juvenile native fish in the lower reaches. Tom Nesler asked how that can be tied to nonnative fish removal without a treatment/control approach and considering all the things going on in the Green River to improve the native fish populations. Mike agreed this work could be deferred.
- l. Duchesne River nonnative fish removal (#124) - Removal of all nonnative fishes from Myton downstream and translocating them into Elder's Pond (\$28.8K). Tim Modde said the Duchesne has the highest concentration of smallmouth bass.

The Committee discussed the merits of requiring detailed annual reports versus requiring annual *and* final reports for nonnative fish management projects. The Committee agreed to detailed annual reports that include previous years' data with an umbrella compilation every three years (this will be added to the RIPRAP). Scopes of work will say that annual, detailed reports will be submitted according to guidelines provided by the Program Director's office. All scopes of work also should specify that each project will look for tags (floy and pit tags) from other studies.

The Committee discussed priorities within the nonnative fish management scopes of work. Frank said he thinks the Yampa work is all first priority. He suggested that Colorado River smallmouth bass are higher priority than Green River smallmouth bass because smallmouth are just now becoming a problem in the Colorado. Tom Chart agreed. Mike Hudson agreed, but noted that smallmouth bass are just now becoming a problem in some areas of the Green. Gary countered that we're just now seeing razorback recruitment, which makes nonnative fish control on the Green very important. Dave Speas agreed. Frank said he would streamline the Green River smallmouth bass removal before deleting Duchesne River nonnative fish removal (concentration area). Melissa said she would rate these two about the same.

**Friday, January 16**

Geomorphology - George Smith introduced the scopes of work. In light of the peer review comments, Frank questioned whether we should fund any of the scopes of work submitted from Argonne, Reclamation, or TetraTech. Tom Pitts agreed and recommended convening the geomorphology panel (with perhaps a few additions) to help us develop the best approaches. Tom recommended we develop a scope of work for that which would include paying for the panel's time and completion of a final report (funded from Section 7 funds). Melissa agreed, but suggested deferring the sediment monitoring so it would coincide with the other geomorphology work. John Hayse agreed, saying the sediment data will need to be collected concurrently, but noted there is also value in starting the monitoring now. Tom Pitts and George recommended starting the sediment monitoring this year. The Committee agreed to Tom Pitts proposal to convene the geomorphology panel; >George Smith will develop a scope of work. Tim Modde noted that floodplains were the highest rated habitat by the geomorphology study, but recommendations for geomorphology investigations were deferred until the floodplain management plans are completed. Tim said he believes we need to get information about development and maintenance of floodplain habitats.

- m. Argonne - Not discussed in detail.
- n. Bureau of Reclamation - Not discussed in detail.
- o. TetraTech - Not discussed in detail.
- p. USGS sediment monitoring - (Full scope of work not yet developed; see Program Guidance from Gerry Roehm dated 10/21/03). This work would provide continuous readings (daily samples) of suspended samples at 6 sites throughout the basin from April through about October. This proposal includes a \$95K annual match from USGS. Bob Muth said he's not sure we need the gage near the town of Green River. George said about 3 years of data would be required to calibrate a model (and the first year of data may not be perfect while technical challenges are worked out). John Hayse noted that this work will provide suspended sediment information, but not data on bedload movement (important to the Gunnison flow recommendations). George said USGS does have a correlation for this and Tom Pitts suggested we might add some sampling to test that correlation. George added that bedload data are less expensive to collect. Dave Speas questioned putting this amount of funding into high-resolution geomorphology data when the relationship to biological factors isn't entirely clear. Melissa said she believes the gages on the Yampa and Green rivers could be deferred.

Floodplain - Rich Valdez said 16 major floodplain areas are available for management, 12 of which have good potential to be managed for the benefit of the endangered fish. Rich reviewed the Green River floodplain management plan recommendations (not necessarily in priority order). The Committee discussed those and **highlighted** tasks for 2004:

- 1) Suspend further property assessment and acquisition on the Green River.
- 2) Implement restoration & management of Thunder Ranch. Frank said there's a small selenium seep that Reclamation is scheduled to pipe to the river before spring runoff occurs and they're also scheduled to put notches in the levee (capital funds). Frank said he thinks we need to look at larval entrainment at Thunder Ranch. Pat said there's not yet a scope of work for monitoring larval entrainment and survival at Thunder Ranch. Pat said we also need to monitor the physical response of Thunder Ranch, and he thinks TetraTech may still have capital funds to conduct this work (they're supposed to let Pat know). Pat said at some point we'll want to evaluate survival at Thunder Ranch. Melissa suggested we might want to shift some of our survival work to Thunder Ranch. The Committee agreed to look at fall survival at Thunder Ranch (fall seining to determine species composition). The group discussed the merits of putting larvae right in front of Thunder Ranch versus near the spawning bar. Frank said he feels confident Ouray NFH can produce at least a 500,000 larvae. Frank said he thinks we also need to do some light-trapping at Thunder Ranch (modify existing scope of work 22f).
- 3) Coordinate management of Stewart Lake with the agencies managing it. Frank said that if Stewart Lake fills, we would need to monitor larval entrainment (probably not until FY 05). Light-trapping might be done in FY 04, however (modify existing scope of work 22f).
- 4) Coordinate floodplain management and restoration with Ouray NWR. (Program participants will be participating in an upcoming workshop on Ouray.)
- 5) Continue to manage and evaluate restored floodplains. Rich said we can either focus our monitoring on two or three sites or try to monitor each site. Rich said he thinks entrainment is the most important thing to monitor. Survival is more expensive to determine.
- 6) Continue using hatchery raised razorback and bonytail to evaluate floodplains and augment populations. Ongoing.
- 7) Assimilate and synthesize information on fish growth and survival in floodplains. Several reports will cover this. Pat said if we don't continue the FY 03 studies, he would envision the PI's writing up the work done so far. If the work is continued, the PI's would need to analyze the data collected to date. Rich said this report needs to contain very specific recommendations for future survival studies, if any are needed.
- 8) Evaluate geomorphological and hydrological characteristics of acquired/restored sites. (E.g., TetraTech's work.) Pat said FY 04 needs will depend on flows. If flows are high, we'll want to monitor any changes in configuration at the flow-through sites. If flows are high throughout the basin, the first priority would be



Thunder Ranch, followed by Above Brennan and Bonanza Bridge where we've breached the levees on the upstream end, Escalante SWA on the Gunnison River, Butch Craig on the Gunnison River, and the Audubon site on the Colorado River (if construction completed before spring runoff). (If additional funds were needed, Pat believes this would fall under capital funds.)

- 9) Use existing programs to monitor response by razorback and bonytail (as opposed to a specific monitoring program at this point).

Tom Chart said he thinks the entrainment work is important, including Thunder Ranch. Tom said he'd also like to track actual larval entrainment, not just do a bead study. Rich described two aspects of entrainment: degree of entrainment at a particular site (which can be monitored locally); and measurement of downstream drift (this aspect would be very expensive to investigate, and Rich didn't recommend it). Bob Muth said we haven't looked at the spawning bar recently and recommended we check on reproducing adults there this year. Frank said the Service and Utah should be able to do that without an additional scope of work. Bob Muth asked Rich how much more survival and growth data are needed and Rich replied that he's unclear what aspects still need to be determined, which is why he recommended synthesizing this information.

- q. BT/RZ - Looks at survival at L10, Old Charley Wash Johnson Bottom, Above Brennan and Bonanza. Tim recommended dropping Above Brennan and Bonanza and adding Thunder Ranch. Frank cautioned about the number of larvae this would require. Pat said he thinks Thunder Ranch is the priority. Rich said the fundamental question is whether we're getting 1% survival overall (throughout the reach, as opposed to individual site evaluation), which is what is necessary to sustain the population. Since not enough larvae will be available to do the other sites, the cost of this project should be reduced by at least \$40,000.
- r. RZ/BT - Treatment/control approach to determine survival in the presence of nonnative fish. Melissa said she'd still like to see some site-specific evaluation, if possible. Ron Brunson noted that we have a reset situation now and it would be good to continue this work. Requires only 18,000 larval fish.
- s. RZ recruitment - The age-1 fish would be from Baeser Bend. Frank said the 50,000 larvae won't be available. Ron recommended deferring the remote sensor (\$40K), but go ahead and monitor the age-1 and age-2 fish. Frank said he thought we already knew that age-1 and age-2 fish don't leave. Ron said he doesn't think we should just drop the Stirrup and walk away. Frank agreed to setting some trap nets, but that's a pretty minimal effort. This scope needs to be revised and will be cut by at least \$40K.
- t. RZ entrainment - Revise to evaluate Thunder Ranch, instead.

#### Instream flow identification/protection

- u. Continuation of fish community studies in Lodore and Whirlpool canyons (Bestgen) - This work is evaluating the Flaming Gorge flow and temperature

recommendations. Low-flow summers and the drought have increased temperatures in Lodore to near pre-dam levels and fish community changes have been seen as a result (increase of distribution and abundance of red shiners – 30 miles in 3 months, increase in smallmouth bass, more humpback chub in Whirlpool Canyon, and a dramatic increases in adult pikeminnow in Lodore upstream of the Yampa). In light of FY 03 equipment difficulties and the dramatic changes in the fish community, a 1-year extension of this study is being recommended. Data would be provided quickly so that if there's a need to conduct monitoring in FY 05, the Committee could consider that about this time next year. Bill Davis asked about the implications for the Flaming Gorge EIS process. Tom said the preliminary information has been incorporated in the EIS. Tom re-emphasized the need for a Program presence at the Flaming Gorge flow work group meeting.

- v. Cataract Canyon humpback chub population estimate - Mike Hudson said they had better than expected catch rates. Thirty-two total humpback chub were captured, with 44 humpback capture events, yielding a population estimate of 150 (not very precise, though). Also, 16 bonytail were captured, with a total of 20 capture events, yielding a population estimate of 66 (again, with wide confidence intervals). Given these results, Mike said they would like to continue in FY 04, but instead of sampling four reaches through the entire canyon, they would like to make three passes and focus on main concentration areas and develop sectional density estimates within those areas and relate those to an abundance estimate for the whole canyon. This should increase precision of the population estimate. Rich agreed that should work and should provide the estimate needed for recovery goals. Mike said the cost should decrease, but he doesn't yet know by how much.

The Committee scheduled a conference call from 2:00 - 4:00 p.m. on Thursday, January 29<sup>th</sup> to finalize the placeholder scopes of work. >Angela will post the "raw" meeting summary to the Biology Committee tonight (in advance of review by Bob Muth and Melissa Trammell). >PI's will post revised scopes of work to the listserver by January 23 (a scope of work for the USGS sediment monitoring also is needed). Bob Muth strongly encouraged PI's to coordinate their nonnative fish management scopes of work as best as they can. >Angela also will post a list of the budget changes made to the placeholder scopes of work so far and how much more funding still needs to be cut.

9. Next meeting - Conference call from 2:00 - 4:00 p.m. on Thursday, January 29<sup>th</sup> to finalize the placeholder scopes of work. >The Program Director's office will set up the call. Agenda items for the next meeting (February 10-11 in Grand Junction, starting at 12:30 p.m. on Tuesday, February 10 and now not adjourning until 5:00 p.m. on Wednesday, February 11) will include:

- a. Report reviews: Birchell & Christopherson - evaluation of survival and growth of razorback sucker stocked into middle Green River depressions; Modde - development of White River flow recommendations; and possibly Kitcheyan's report. Ray Tenney will bring a proposal on what will happen with the 15-mile reach bug report.

- b. Review of Program Director's recommended RIPRAP revisions and assessment and any modifications to FY 05 work plan.
- c. Elkhead screen design option and Colorado's Elkhead lake management plan.
- d. Recommendation for population estimate/monitoring workshop.
- e. Criteria for upper Yampa nonnative fish management.

## ASSIGNMENTS

1. Gary Burton and others interested will submit written comments on Chris Kitcheyan's report by January 31. Frank will turn the report around as soon as possible, but will have to check with Chris' supervisor, since he has moved on to a new job. Frank will provide a date when the report will go back to the Biology Committee.
2. Tom Chart encouraged Program participants to attend the Flaming Gorge flow work group meetings. Tom will post the notice of the next meeting to the listserver.
3. Ray Tenney will provide the Committee with a proposal on what will happen with the 15-Mile Reach "bug report." Committee members who wish to provide comments on the current version of the report will submit those by the end of January.
4. At the February meeting, Bob Muth will provide a recommendation on when to hold an upper basin workshop on population estimates and how it should be structured.
5. Tom Nesler will let Chuck and the Biology Committee know what species CDOW wants provided to Pat Martinez for the isotope study (as part of the Colorado River smallmouth bass work).
6. Tom Nesler will determine if the Division can bear the cost of floy-tags for fish to be translocated under the Middle Yampa (critical habitat) bass (#125) study.
7. Tom Nesler will look into CDOW moving northern pike caught early in the season between Craig and Carpenter Ranch bridge (#98b) to Rio Blanco.
8. Tom Nesler will prepare a draft proposal for a downstream pike movement criteria/threshold at which the Program would consider expanding pike removal upstream (hopefully by the next Biology Committee meeting).
9. George Smith will develop a scope of work to convene the geomorphology panel (and perhaps a few additions) to help us develop the best approaches to our geomorphology needs. The scope will include paying for the panel's time and completion of a final report (funded from Section 7 funds).
10. Angela Kantola will post the "raw" meeting summary to the Biology Committee tonight. She also will post a list of the budget changes made to the placeholder scopes of work so far and how much more funding still needs to be cut.
11. PI's will post revised scopes of work to the listserver by January 23 (a scope of work for the USGS sediment monitoring also is needed).
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