

**FY 2010 Annual Reporting Meeting & Direction to BAHG
Notes and Recommendations for follow-up
or FY 2012 Budget/Workplan Changes**

1. Sediment sampling reaches (Goal 8; Grams): GCMRC is seeking input on which reach would be the best to repeat first? Need input from TWG plus they have some ideas on which reaches would be helpful in showing those calculations.
2. Campable area: (Garrett) is there a way to compare data between campable area and actual sand area? We are tracking both the sand area/volume and campable area and to some extent encroachment, but we need to further understand how these questions are being approached.
3. Nina Kilham: long term changes in sediment. Could and/or should these be repeated, and be a part of the longer term campaign? Should they be repeated whenever we have a low steady flow of 8k to continue this long term data set. It is unclear how this project fits into the sediment program.
4. Amy Draut: aeolian sand effects are very linked to direction of wind flow. So what are the implications to management, based on whether a site gets "modern" deposits or is based from "relict" deposits?
5. Western Grand Canyon sediment: Kanab and Havasu inputs are now being monitored. There could be multiple HFEs in the future, not enough funds currently for Glen Canyon sediment flux. Should we continue what is currently in place or add attention to Glen Canyon or Western Grand Canyon as we don't monitor there, given more HFEs we may want to add these. Mead used to be at 240, but now down to 280 and beyond due to river dropping. Are there navigational issues below, important to Hualapai? Sam Spiller: changes in conditions in upper mead area may be creating higher turbidity conditions which might promote razorback suckers, and possibly have implications for nonnatives too. Are we adequately addressing these issues?
6. Korman (trout): trout early life stage survival. This year we will have higher flows which will result in higher elevation redd deposits. Those eggs could be more easily killed by low flows (higher redds are easier to dewater). Korman proposed taking advantage of this opportunity in 2011. Under the fall steady flow plan, survival rates should go up in the fall due to steady flows and softer transition flows. But, they saw no effect of increased survival rates. To use flows to affect age-0 trout while they are in low angle habitats then that should happen in the May/June time period, about 80% of the age-0 trout are in that habitat then. Korman hypothesized that it wouldn't take that many redds in the LCR reach to produce a lot of locally produced trout there. Higher release volumes this year might be good for trout by increasing the wetted perimeter plus steady flows. Opportunity in 2011: we could drop the river down on Sundays to destroy redds, this recommendation could be made as part of the hydrograph -- which months?
7. Baxter (food base): fish production downstream, comparable to Lees Ferry. HBC and RBT have a high degree of diet overlap. Fish assemblage is consuming all of the available black fly biomass downstream. But for midges, fishes may be underutilizing this biomass in some places. RM 30 evidence for strong competition, but competition at rm 60 might be relatively low for years 07 and 08, but no data for 09 and 10 when trout numbers have substantially increased. Question under increasing trout abundance: what is likelihood of competition under higher trout scenarios?
8. Korman (trout assessment model): is this adequately funded in 2011/12 under the modeling workplan element?
9. Kennedy (food base): FY10 scaled back. FY09 monthly (Lees Ferry and Diamond) and quarterly down river (LCR). In FY10 field work scaled back to complete write ups. FY11 monthly at Lees Ferry and Diamond creek, but the idea was to wait on river trips until the PEP was completed. Plan pep in FY12. After hunt for money, cut food base in 11 to

quarterly at just at Lees Ferry and Diamond creek. Then because of HFE GCRMC added monthly sampling at Lees Ferry and Diamond but still no river trips. The additional sampling was not approved for FY 11 but was for FY 12. Thus, it was a quarterly sampling vs. monthly sampling issue. Food base is restored to monthly sampling in FY 12 but still no river trips to LCR reach.

10. Ralston (vegetation program): pit fall samplers worked for arthropods in pilot study, core monitoring plan for vegetation in development, in FY11 Barb will visit sites to determine 80 sites for use. What is the overlap between the NPS vegetation program and what we are developing for core monitoring, is this redundant?
11. Pine (nearshore ecology project, NSE):
 - a. Should we continue with current project in FY 11 (last year of field work) given that they detected no signal of the steady flows? Should the project be changed to reflect changes in research needs for nonnative fish or should the steady flow be altered to have more of an effect?
 - b. Key question on movement between LCR and mainstem, how does survival of juveniles affect the adult population? Do juveniles move between the mainstem and LCR in order to maximize growth rates and survival potential?
 - c. High survival rates in the NSE study reaches implies low predation on size classes and in location, how do trout affect juvenile humpback chub in smaller sizes and between movement from LCR to NSE study area?
 - d. Steady flows were confounded by storms in 2010; what does this mean to results?
 - e. How can NSE methods for juvenile survival rates be used for other experiments, should juvenile survival in mainstem and LCR be monitored as part of our ongoing fish program (Core)?
 - f. What integration should occur between the food base work and NSE, changes in workplan or more money or time for synthesis?
12. VanHaverbeke (HBC translocations): removals in 2010 consisted of about 10% in age-0 fish, and 14% age-1 fish that were taken for translocations, this is above the 5% goal. Need to have a science/management plan developed with goals, what are the objectives of the Chute Falls translocation program? We should consider a mini-pep and then development of a science plan. Need to integrate NPS native fish plan, work with the NPS.
13. VanHaverbeke (LCR HBC monitoring): small 2009 cohort. Fall estimates seem limited, but spring seems to keep increasing. Should we continue juvenile estimates using VIE marking? How will VIE marking be integrated into the workplan and for what reasons, objectives? One benefit is to Tag juveniles that may migrate out to mainstem to be picked up by the NSE study. Need a workplan that describes these activities, how will the data be used?
14. AGFD (Lees Ferry): will nonnative removals be continued in backwaters. How does the RTESS data fit in to the workplan? Unsure of what sampling is continuing, redds, RTESS, 3 trips? Just need some clarification on what is planned for 11 and 12.
15. AGFD (downstream monitoring): high numbers of trout in LCR reach similar to 2000-2002. Only 1 successful trip in 2010 due to turbidity downstream of LCR, if only 1 then might miss quality data for that year. In 11 we have one mainstem planned and one aggregation trip. Only 300k in 12 for nonnative fish removal efforts, but might need to cut back to 1 mainstem trip for FY12 -- if we do removals in 12 then you get abundance information in the LCR reach, maybe you can get by with one trip instead of 2 trips in FY 12.
16. Persons (aggregation sampling): need to see results from 2010 aggregation sampling. Bill will follow up with that report and provide an update on results to BAHG.
17. Nonnative trigger (1200 trout in LCR reach): how will this be calculated when our mainstem trip provides CPUE data? This would need to be converted to a population estimate, Korman thinks this may be possible with the trip by trip population estimates from the 2003-

2006 work. But, if it does work at all, it will have high uncertainty. If so, what does this mean for management?

18. Flood timing (Korman): May 15 for flood might not produce a lot of trout in that year, might get a big cohort the next year, but in the flood year would have high mortality for emerging trout (age-0 may be susceptible to the flood). Unclear if the flood affected pre-flood emerged trout survival rates.

The following were added on March 9, 2011:

19. Dongoske (HFE): high flow might reduce habitat availability for HBC in NSE reach thereby reducing survival rates, this is from the GCRMC report, Walters ecosystem.
20. Korman: tagging study for downstream drift could be added to the PBR removal program under the nonnative EA. About 15,000 tags would be needed to tag about 25% of the trout population at Lees Ferry. Presumably they would drift down and be captured in the PBR reach and estimates of emigration from Lees Ferry could be calculated.
21. Balsom: relationship between water temperature and growth rates of humpback chub may be important.
22. Norm: questions movement of small trout downstream, we may be able to catch those.
23. Davis: are we complying with water quality standards in Grand Canyon?
24. Consider the implications of the recommendations from the socioeconomics ad hoc group in consideration of changes to the FY 2012 workplan.
 - a. In Table 3 we have nonuse values workshop for 2012, but unfunded and not in current 12 workplan.