

## Appendix E Synthesis of Comments and Responses

Comment	Response
The purpose and need statement should be written more clearly with stated objectives, including linkage to the Grand Canyon Protection Act.	This comment has been incorporated in the revised EA. The proposed action has not changed, but greater clarity and explanation of the purpose and need is included in response to these comments.
Scientific citations should be updated and effects narrative technically strengthened.	This comment has been incorporated in the revised EA. Sufficient analysis has been conducted to determine the effect of the proposed action.
The EA should include a range of alternatives.	This EA analyzes a single proposed action alternative that was developed from the recent history of GCDAMP discussions and during informal consultation with the FWS in October - November 2007. This informal consultation recognized new information regarding the status of the humpback chub, continued implementation of the 1996 Record of Decision, and identified experimental flows. In addition, Reclamation considered the likelihood of potential litigation. The proposed action does not preclude additional activities that could be proposed or developed through the GCDAMP as a recent <i>Federal Register</i> notice on the Long-term Experimental Plan describes.
Economic analysis should be included to clarify the true cost of the experiment, including the science monitoring and research costs.	This comment has been incorporated in the revised EA. The economic analysis for hydropower was developed by Argonne National Labs, for the recreation impacts through conversations between NPS and the river guides, and for the science plan through procurement discussions between GCMRC and scientific contractors. GCMRC has verified that there is no redundancy between these experimental plan science costs and the other monitoring and research costs of the Adaptive Management Program.
The economic impact on power users from the test should be clarified, including how increased costs would occur.	This comment has been incorporated in the revised EA.

<b>Comment</b>	<b>Response</b>
Additional high flow tests should be included in the proposed action.	The proposed action covers a high flow test in March 2008 and expects that sufficient scientific analysis will occur to answer the questions associated with this high flow test under unique highly enriched sediment conditions. The EA does not preclude additional future tests, but is clear that the test will be immediately followed by this essential analysis (as described on page 7 of the Biological Assessment). It would be premature at this time to propose additional high flow tests until the results of this test are incorporated into that of previous tests and made available for public review. This approach is the fundamental concept of adaptive management.
Post-high flow test flows should attempt to maximize the retention of new sand deposits.	This element is already embedded in the proposed action. Monitoring of sediment transport during 2003 to the present indicates that rapid erosion of newly built sandbar deposits occurs during high release periods. In 1996, the high flow test was followed by about 1 1/2 years of flows which reached or exceeded 20,000 cfs. In 2004, the high flow test was followed by 3 months of high fluctuations up to 20,000 cfs designed to suppress trout spawning. Both of these periods resulted in increased downstream sediment transport. In contrast, the proposed action does not include these high releases, which should limit sediment transport. In addition, the fall steady flows should also result in sediment conservation and provide potential benefits to the humpback chub.
The EA should explain how the proposed action addresses ESA concerns and how other non-flow conservation measures would be implemented.	The proposed action of the EA is identical to that of a recent consultation under ESA with the FWS. The FWS issued a biological opinion on February 27, 2008 which provides the best source of information on the expected effects of the proposed action. This biological opinion is included as an appendix to the EA. Reclamation will work collaboratively with other resource management agencies in implementing conservation measures of this and the 2007 Shortage biological opinions.

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The experimental plan should include desired future conditions or targets to allow evaluation of the success of the proposed action.	The GCDAMP is in the process of developing desired future conditions, starting initially with sediment and humpback chub. In addition, Reclamation believes it important to agree on the metrics used in assessing the status of resources and the success of the proposed action.
The experiment should be delayed until 2009 to allow more time for development of science efforts and environmental compliance.	The accumulation of sediment during 2006 and 2007 presents a unique opportunity to test sandbar building under the highly enriched sediment concentrations that currently exist. If delayed, sediment would continue to be transported downstream. While the magnitude of additional tributary inputs are uncertain in 2008, it is likely that the high flow test would be more effective in 2008 than in 2009.
Mitigation measures which address adverse effects to recreation interests and local businesses should be included in the document.	The EA inadvertently omitted these measures from this section, as the incomplete sentence on page 13 would indicate. These measures have been added.
The downramp rate for the high flow test should be reduced to produce more connected backwaters and more gradually sloping beaches rather than the steep cut banks that may result from a rapid downramp.	Reclamation has not included the requested change to the Proposed Action. Reclamation's proposed March 2008 hydrograph is consistent with GCMRC's proposed experiment which replicates the 2004 high flow test but under highly enriched sediment conditions. It is likely the proposed hydrograph shape will provide greater areas and volumes of sand to test the aeolian transport hypothesis associated with archeological site protection, and would increase the amount of aeolian transport in the spring of 2008.
The science plan should be included and linkages drawn to the proposed action.	This comment has been incorporated in the revised EA and the science plan has been added as an appendix.
The steady flow portion of the proposed action creates new threats to the humpback chub through warm water nonnative fish predation and should be documented.	Reclamation recognizes that increased habitat temperature or stability could result in both positive impacts to the chub and increased proliferation of warm water nonnative fish, and it has incorporated it's assessment of that risk into the steady flow aspect of the Proposed Action. Monitoring throughout the term of the Proposed Action will assess the effect of the Proposed Action. A warm water nonnative fish control program is being developed by GCMRC to counter the potential of adverse impacts to the humpback chub and would be implemented

through the GCDAMP.

<b>Comment</b>	<b>Response</b>
Replacing fluctuating flows with steady flows would negatively impact aquatic food base and drift, reducing food availability.	This is a valid hypothesis, as is the hypothesis that steady flows would conversely increase aquatic productivity. The science plan will make intensive measurements of algal/invertebrate biomass, invertebrate and fish feeding habits, and invertebrate and fish growth indicators in order to answer this question.
The Adaptive Management Work Group has not recommended either part of the proposed action.	This is a true statement; there has not been a formal recommendation for either part of the proposed action, however the Adaptive Management Work Group has been extensively consulted on the high flow aspect of the Proposed Action. In addition, the steady flow aspect of the proposed action builds on prior discussions within the Adaptive Management Work Group and the AMP. The Department believes that these actions will result in both positive impacts to downstream resources and increased scientific understanding.
The discussion about determining September and October monthly release volumes should be clarified.	Agree. This comment has been incorporated in the revised EA.
The Basin Fund should be reimbursed for the costs of conducting the proposed action.	The proposed approach to this experiment is consistent with the high flow test in both 1996 and 2004. In neither case was the Basin Fund reimbursed for the cost of replacement power required as a result of the experiment.
Sediment augmentation should be explored as a means of attaining sediment conservation.	Agree. In 2007, the Adaptive Management Program funded a preliminary evaluation of sediment augmentation, including potential options and their costs. In determining whether sediment augmentation is required, the proposed action represents an important research effort in determining the long-term sustainability of the sediment resource.

The EA should recognize the potential for extended drought to reduce Glen Canyon Dam water levels to below the penstock intakes.	Agree. Based upon the indexed sequential method currently utilized, Reclamation has estimated that the current annual probability of the reservoir elevation dropping below the powerplant penstock intake levels during any one of the next five years is less than 1%. This information has been incorporated into the EA.
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<b>Comment</b>	<b>Response</b>
The proposed action should pay greater attention to archeological sites and their preservation.	Agree. The proposed action is fundamentally concerned with rebuilding sandbars and beaches key to the preservation of archeological resources, including the scheduling of a high flow test prior to the spring windy season (which is hypothesized to protect sites subject to gully erosion through aeolian transport of sediment) and the monitoring of archeological sites to determine the effects of the proposed action.
This high flow test must be the last instance of this type of experiment. Future high flows must conform to the constraints of the 1996 ROD (undertaken only to avoid a "spill").	Disagree. This proposed experiment neither mandates nor precludes future experimentation. Rather, this proposed experiment was developed consistent with the principles of adaptive management to require full analysis of the effects of the experiment and integration of such results into future decision making. See discussion at page 7 of the BA and section 2.2 of the EA.
Explanation and justification of the September - October period of steady flows should be included in the EA.	Agree. This comment has been incorporated in the revised EA. Additional explanation has been added from the recently issued Biological Opinion and incorporates the triggering concepts from the 2008 Biological Opinion April 2007 science workshop associated with the Long-Term Experimental Plan.
A science plan should be prepared that addresses the steady flow component of the proposed action.	We agree and have discussed this with GCMRC. Reclamation is committed to start more formal work on the steady flow science plan beginning in April 2008. In addition, the scientific research and appropriated funding of this research associated with the May - September monitoring trips has been strengthened to assess backwater characteristics and use by native and nonnative fish. The existing science plan will also monitor the effects of flows following the high flow test on sediment transport.

<p>The Long-term Experimental Plan process should be reassessed to develop a program of experimental actions designed to meet the intent of Grand Canyon Protection Act.</p>	<p>Agree. The Department has committed to that course of action (see 73 Fed. Reg. 8062 (Feb. 12, 2008))</p>
<p>Reclamation has not complied with procedural elements of NEPA (comment periods, public notice, range of alternatives, etc.).</p>	<p>Disagree. The EA details the numerous steps that Reclamation has taken to comply with all procedural and substantive aspects of NEPA. Reclamation has met and exceeded the legal requirements that are applicable to environmental assessments, including the requirements for providing opportunities for public review and comment.</p>

<b>Comment</b>	<b>Response</b>
<p>The Proposed Action impermissibly limits the options that may be considered in the Long-Term Experimental Plan.</p>	<p>We disagree. Reclamation can only proceed with the proposed action if it determines that it will not cause significant impacts, and, as discussed in Section 2.2 of the EA, the proposed action does not limit future experimentation with either high flow tests or steady flows. The nature and scope of the alternatives to be analyzed in the Long-Term Experimental Plan process had not been finalized, and the Department has specifically committed to proceed with a re-assessment of the Long-Term Experimental Plan process following the completion of the analysis of this proposed action. See 73 Fed. Reg. 8062 (Feb. 12, 2008).</p>
<p>No criteria for evaluation or thresholds of significance are identified.</p>	<p>Comment noted. Reclamation is aware that some agencies rely on voluntary, informal policy statements to determine the significance of proposed actions in the NEPA process. Reclamation does not feel that this approach is appropriate for this NEPA process. Instead, Reclamation will use its standard practice of determining the significance of the proposed action based on the appropriate legal and factual criteria that are specific to the action.</p>
<p>Concern about legal authority for future power plant bypass flows.</p>	<p>Comment noted. Consistent with past practice, any decisions regarding future bypass flows will be made in accordance with the Law of the River.</p>

<p>The lack of Seasonally-Adjusted Steady Flows releases violates the 1995 Biological Opinion.</p>	<p>Reclamation does not agree with this assertion. Moreover, this comment does not apply to the Proposed Action because the Fish and Wildlife Service has issued a Final Biological Opinion on the Proposed Action that “replaces the 1995 Final Biological Opinion on the Operation of Glen Canyon Dam (U.S. Fish and Wildlife Service 1995, consultation number 2-21-93-F-167).” The Fish and Wildlife Service further noted in its Final Biological Opinion that “[a]t the end of the five-year period of the proposed action, it is expected that Reclamation will reconsult with FWS.”</p>
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