



**M3 RESEARCH**

L. David & Pamela Garrett, Principals  
53500 Falcon Rd  
Olathe, CO 81425  
970-323-9511 (Ph)  
970-323-9512 (Fax)  
E-Mail: [m3research@aol.com](mailto:m3research@aol.com)

**ATTACHMENT 3**

To: Dr. Jeff Lovich, Chief GCMRC  
Dr. Denny Fenn, USGS Center Leader  
AMWG Leadership  
From: GCD AMP Science Advisors/Executive Secretary  
Date: October 31, 2003  
Subject: Observation and Recommendations Relating to GCMRC Symposia

The Science Advisors want to express our appreciation for the GCMRC dedication and commitment to understanding the physical and biological processes in the Colorado River below Glen Canyon Dam. We came away from the Colorado River Science Symposium with a much greater appreciation of the breadth of scientific issues GCMRC is addressing, and challenges that still lie ahead. Clearly there has been tremendous progress in understanding physical processes, especially the effects of flow variability on sediment movement and storage. Significant advances have also been made in fish studies with additional needs specified. The GCMRC information technology capability also deserves high praise.

There was not a specific charge to develop recommendations based on our observations during the symposia. However, informal discussions with the GCMRC leadership team revealed an openness to receive any comments we considered important and timely. As such, we make the following recommendations for consideration by the GCMRC team.

1. GCMRC needs to go through a strategic planning exercise in the very near future, and document the effort in a GCMRC Strategic Plan. If possible, we would like to be able to review a balanced strategic plan that addresses physical, chemical, biological, cultural and other science and monitoring issues before submission of the Fy 05 budget. As we noted to the GCMRC leadership team in our meeting, the document should address all key program efforts, i.e., core monitoring, integration, research flows etc. and in general how they will be accomplished. The effort is critical, and we offer our support and the



support of Dr. Garrett to assist in completing the draft plan for review by January or February.

2. Integration of physical chemical, biological, ecological, cultural and other science and monitoring areas is critical to success. Our review of staffing reveals a pressing need for a senior-level systems ecologist to work alongside Dr. Melis and other GCMRC scientists to enact effective integration. We strongly recommend hiring such a scientist in Fy 04, especially considering the move of the senior ecologist to Tucson.
3. Critical scientific questions need to be asked regarding the aquatic food base and its relationship to Canyon fishes. We noted this issue in an earlier report, and will pursue it in greater depth in our next review. Our current position is that we would convene a panel of riverine food web experts with our Advisors this spring to evaluate past efforts and recommend future research activities.
4. An objective, robust monitoring program needs to be established and maintained for the native fish program and the processes that influence fish solutions. It will need to detect changes caused by climate (drought), parasites, water quality, food availability, TCD, etc. The effort needs to be rigorous, and must be able to use historical data, as well as data developed under new protocols.
5. We do not feel critical scientific issues are being addressed specifically related to cultural resources at risk from dam activities. Under Dr. Schwartz's leadership, we articulated a potential approach in an earlier report. We felt the approach offered a cost effective basis for mitigating dam related impacts on cultural resources. We will address this issue in more detail in review of the Strategic Plan.
6. The GCMRC is best served by a integrated set of internal and external science and monitoring investigations. As such, a regular schedule of requests for proposals (RFPs) that adhere to the goals of the strategic plan is important. Proposals should be peer reviewed, and results from external and internal research and monitoring efforts should be presented in the literature in a timely manner.

Since we were not asked for a formal review or review report, we would like this memorandum to be considered as informal input to GCMRC. Most suggestions have been mentioned before, and will be addressed in depth in the strategic plan review.