Attachment 5b

PROGRESS REVIEW - IMPLEMENTATION OF THE GLEN CANYON DAM OPERATIONS BIOLOGICAL OPINION

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TWC 11-5-97

. - Adaptive Management Program (AMP)

Prior to the Secretary of the Interior signing the Record of Decision (ROD) on the Glen Canyon Dam Environmental Impact Statement, Reclamation organized the transition work group to emulate the proposed Adaptive Management Work Group (AMWG) and insure cooperative management efforts continued. This group met regularly while a Federal Advisory Committee was being established. Numerous drafts of the AMWG Charter were circulated for comment, and the final version transmitted to the Washington D.C. Office on July 15, 1996. The Record of Decision was signed on October 9, 1996, formally sanctioning the preferred alternative, including the AMP and the Grand Canyon Research and Monitoring Center. Steve Magnussen has been appointed as the Secretary's designee, Committee members have been designated for the 25 participants, and the first Adaptive Management Work Group meeting was held on September 10 and 11, 1997. A copy of the RPA is attached for reference.

This element of the biological opinion has been completed.

1.A - A Program of Experimental Flows

The RPA recommends that a program of experimental flows be carried out, including high steady flows in the spring, and low steady flows in summer. A beach/habitat building flow of 45,000 cfs, including appropriate up and down ramps, was conducted in March, 1996. Prior to conducting this flow, National Environmental Policy Act compliance, in the form of an environmental assessment (Reclamation, February, 1996); and, Endangered Species Act consultation through preparation of a biological assessment (BOR, November 1995) and a biological opinion (FWS, November, 1995) were required because the ROD had not been signed. A full research program to evaluate this experimental flow accompanied the release. These compliance and research activities required substantial staff time and effort. The final reports analyzing the effects of the habitat/beach building flow, including peer review, were completed December 31, 1996. Final analysis and integration of the data will require approximately one additional year and should be available in late 1997. A symposium was held April 2-3, 1997 by the Grand Canyon Monitoring and Research Center to report preliminary results of the test flow.

High spring flows - completed

The BO also recommended: "... testing of low steady flows in summer and fall during low water years. Information form final GCES endangered fish reports, researchers who conducted those studies and other knowledgeable individuals are to be used to develop hypotheses and studies to accompany those flows. Design of the experimental flows and associated studies will begin as soon as possible and be targeted for completion by October 1996". The BO also recommended experimental flows to begin in April, 1997, or alternatively, if sufficient progress was not being made in implementation of the RPA, they would begin April of 1998.

Reclamation accepted the Service's recommended RPA in an April 6, 1995 response to the BO. This letter of response indicated how Reclamation would implement the RPA. In this response, Reclamation articulated that: 1) implementation of experimental flow are to be coordinated through the AMP; 2) the flow experiments will include scientifically based peer reviewed criteria to measure and evaluate their impacts on downstream resources; the research would be managed and administered through the research center; and that appropriate staff and funding levels needed to be identified. This memorandum was distributed to all cooperating agencies and interested parties.

This element of the RPA cannot be considered delinquent considering that the time of implementation is April, 1998, and considerable progress toward achieving it has occurred.

In progress toward completion of this portion of this element of the RPA, the Grand Canyon Monitoring and Research Center (GCMRC) has been established. Dr. David Garrett, as director of the research center, and the program managers on his staff, have conducted multiple meetings and formulated both a Long Term Research and Monitoring Plan (GCMRC, 1996) and an Annual Plan (GCMRC, 1996) in cooperation with the transition work group members. These plans are designed to evaluate the effects of the various flows regimes as called for in the biological opinion.

Conceptual design of the flows was discussed at a meeting on October 29, 1997. Notes will undergo review from the participants, and when the concept is better developed, it will be sent to the TWG, along with a recommended process for completion. The draft product from that process will be transmitted to the AMWG for review, and specific parameters/criteria for the flow finalized. Substantial input from the AMWG will be important to completing this element of the biological opinion, however, the final criteria must meet the needs and intent of the opinion, and be approved by the Service. These flows will not be implemented in 1998 as called for in the opinion, because the opinion also required it to be an 8.23 million acre foot water year. As additional scientific information is developed through the GCMRC, the study plans and flow criteria will be updated as needed. As the forecast of inflow in the future indicates the probability of an 8.23 MAF year, the low steady summer flows will be implemented. The opinion allows for implementation of the preferred alternative (ROD) in high and medium water years and this has been done. The group recognized that restricting the low flows to 8.23 million acre foot years may need to be relaxed.

This element of the biological opinion is ongoing.

1.B - Selective Withdrawal Program for Lake Powell

Reclamation selected Mr. Dave Truman to manage the effort of investigating the feasibility of and implementing the selective withdrawal program. Funding has been programmed to continue working toward a decision regarding selective withdrawal. Initial scoping identified the need for certain studies. Studies of the macro invertebrates below the dam have been conducted and the final report was completed in May, 1997. Studies on Chlodophora and gammerous have been completed. A model which will be used to evaluate the effectiveness of a selective level withdrawal has been developed and calibrated by Reclamation's Denver office. The study will be completed in 1997. The cost construct a traditional selective withdrawal device was estimated to be approximately $150 million. Give the uncertainties of the effects of such a device on native-nonnative interactions, parasite populations, and other potential effects on native fish, and the need to justify this large expense to congress when seeking appropriations, a work group was convened to develop any alternative means of delivering warmer water to the river. An experimental design for modifying the penstock intakes has been developed with an estimated cost of $15 million. Preparation of an environmental assessment is scheduled to begin in fiscal year 1998.

This element is Ongoing. Actions to complete this item have been accelerated, and it is several years ahead of the schedule originally presented to the transition work group.

1.C - Determine responses of native fish to various temperature regimes and river flows (future research program)

The contracts for certain fish studies which were on going upon completion of the EIS were renewed to preserve a long term data base, avoiding gaps in the data. A large amount of research was conducted during the experimental flow as well. Future research and long term monitoring will be conducted through the GCMRC which has recently released letters of intent to successful proposers for research to begin this fiscal year. As mentioned earlier, the GCMRC staff has developed long term and annual research and monitoring plans. Funds have been budgeted to complete the work.

This element is ongoing

2 - Protect humpback chub population and habitat in LCR by being instrumental in developing of a management plan.

Reclamation contracted with the Navajo Nation to prepare the plan. The Navajo Nation contracted with SWCA consulting firm to produce the document. A preliminary draft was prepared and Reclamation and the Navajo Nation met to discuss modifications. In the process of phasing out GCES and transferring the work to GCMRC the contract expired before the document was completed. A modification to have a draft plan will be complete by the end of November, 1997. It is anticipated the draft will be completed in shortly thereafter. The draft will be circulated to the Service and any other interested party for comment and finalized upon incorporation of the comments. The final LCR Management Plan will then be transmitted to the Service and other parties with the jurisdiction and authority to implement it. Reclamation is willing to participate in the process in accordance with responsibilities under Section 7(a)(1) of the Endangered Species Act.

This element is ongoing.

3 - Sponsor razorback sucker workshop

Reclamation sponsored a workshop on the endangered razorback sucker on January 11 and 12, 1996. Representatives of State and Federal agencies from the seven Basin states, the environmental community, and water and power interests attended. Recognized native fish experts outlined the ecology, genetics, and threats to the razorback in the Colorado River system. The status of the razorback sucker population and a photographic tour of habitat in Glen and Grand Canyons was then presented. With this background, the workshop participants then engaged in an active discussion, attempting to answer the questions 'Should we manage for razorback sucker in this reach of the Colorado River; Can we manage them here; and, What specific actions should be taken in the next three to five years?' Although many differing opinions were express, overall the group believed razorback sucker could, and should be managed in Glen and Grand Canyons, and improved communication/dissemination of data, continued research, and investigating the control of non-native fish were the three major actions identified as needed. The results of the workshop were sent participants, including the Service, on February 12, 1996.

The Service will now recommend a course of action and develop a Memorandum of Understanding to further the process.

Completed

4. Establish a second spawning population of humpback chub

Limited activities have taken place on this element. Some evaluation of the tributaries to determine suitability have been undertaken by the Service through Reclamation funding. Havasue Creek was identified as the location with the greatest likelihood of success. The Supai tribe has indicated they are not amenable to having endangered fish in this area. Further discussion will take place in the future. Considering the preferred location of a second spawning population of humpback chub is in the mainstem Colorado River, and that establishment is largely dependent upon warmer water temperatures, limited staff time and funding resources have been concentrated on the selective withdrawal structure.

Preliminary work has been initiated