

## **Glen Canyon Dam release issues recommended for further study**

Recommendations by the TWG to the AMWG

drafted by T. Moody 11/24/97

revised by R. Winfree 12/16/97

At its September 1997 meeting, the Adaptive Management Work Group (AMWG) tasked the Technical Work Group (TWG) with defining a process and criteria for alternative operations at Glen Canyon Dam in response to inflows during the forecast season. During discussion on these topics, two other additional release issues were identified; flows greater than 45,000 cfs during Beach Habitat Building Flows (BHBF) and broader fluctuations within power plant capacity.

### **Beach Habitat Building Flows greater than 45,000 cfs**

Short duration flows greater than 45,000 cfs have informally been proposed by sediment researchers as beneficial to downstream resources. Many of the researchers who presented papers at the Glen Canyon Dam Beach/Habitat Building Flow Symposium (April 8-10, 1997) commented on the potential benefits of shorter, higher flows. However, flows of this magnitude would necessitate use of the dam's spillways and there is substantial opinion within the TWG that such flows would be outside current operating criteria as described in the Glen Canyon Dam Environmental Impact Statement (GCDEIS) and the Secretary's Record of Decision (ROD). The uncertainties of benefits and costs to downstream resources and hydropower, and institutional questions need to be thoroughly defined and examined.

### **Broader fluctuations within powerplant capacity**

If the proposed criteria and process for spills in response to high reservoir levels and runoff forecasts are adopted by the AMWG and implemented, these operations may result in more frequent BHBF and Habitat Maintenance Flows and additional dynamics that benefit downstream resources. If additional dynamics are added to the system, it is the feeling of some members of the TWG that it may allow broader use of flow fluctuations without impacting downstream resources. We suggest that a careful review of the current limits to fluctuations within the operating criteria (<25,000 cfs) should be undertaken. Additionally, the use of fluctuations at higher powerplant discharges (>25,000 cfs) may reduce the erosional impacts of these high flows on sediment resources, while the ability to load follow at these flows may benefit the hydropower resource.

### **Proposed TWG Recommendation to AMWG:**

These are important issues that deserve more thorough and open discussion and evaluation. We recognize that they lie outside the tasks given the TWG by the AMWG. Therefore, we recommend that the AMWG formally task the members of the TWG, in conjunction with the Grand Canyon Monitoring and Research Center, to explore the technical and institutional questions and evaluate costs and benefits to all resources, as well as necessary compliance issues with the Endangered Species Act, National Environmental Policy Act, National Historic Preservation Act, and any other relevant acts. The TWG and GCMRC would make a preliminary assessment report to the AMWG at its late summer meeting.

## Draft

In investigating criteria and a process for bypass releases from Glen Canyon Dam in response to spring inflow forecasts, the TWG identified two additional issues worthy of further investigation. The first is the potential for broader limits on fluctuations both on a daily basis and above the ROD release cap of 25,000 cfs. This has potential benefits to ~~the~~ sediment ~~resources~~ and hydropower resources. The second is the potential to increase bypass flows to discharges greater than 45,000 cfs.

Both of these issues goes beyond the secretary's ROD. Therefore, the TWG recommends that the AmWG formally task the TWG, in concert with the GCMRC, with investigating the scientific and institutional ramifications of greater fluctuations and bypass releases above 45,000 cfs. ~~The~~ TWG recommendations will be presented to the AmWG at its next meeting.

T. Moody, 11/3/17