

**Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
February 22-23, 2012**

Agenda Item

Grand Canyon Monitoring and Research Center (GCMRC) Updates

Action Requested

✓ This is an information item.

Presenter

Jack Schmidt, Chief, Grand Canyon Monitoring and Research Center, USGS

Previous Action Taken

N/A

Relevant Science

✓ See below.

Background Information

2011-2012 Knowledge Assessment Workshops

Workshops were held in late October and late January. These workshops focused on providing synthetic overviews of current understanding in aquatic ecology, including fisheries, and in sediment transport and geomorphology. In both cases, workshops were structured to include summaries of relevant scientific background, summaries of work conducted during the past 5 years, and summaries of key uncertainties remaining in the subject areas. The workshops included summaries of the specific information requests that have been made in the past by stakeholders, and specifically by the Tribes. Talks and other information presented during these workshops are being posted at the GCMRC website. The data and findings presented in these workshops are being used in development of the new work plans of the GCMRC.

Sediment and Water Quality Update

Tributary sediment inputs have been minimal since recession of the 2008 HFE – during the period between spring 2008 and January 1, 2012. During this period, more sand was evacuated from Marble Canyon than was delivered from the Paria River and minor tributaries. Between 1.8 and 4.0 million metric tons (mmt) were eroded from Marble and eastern Grand Canyons during this period. More sand was eroded from upper Marble Canyon (1.4 ± 0.4 mmt) than from lower Marble Canyon (0.3 ± 0.4 mmt). Erosion in eastern Grand Canyon, the 26 river miles between the Little Colorado River and the gaging station near Bright Angel Creek, was 1.2 ± 1.0 mmt. Some of the sand that has been eroded in these river segments has been deposited in the central and western Grand Canyon, and the rest of this sand has been transported to Lake Mead. The rate at which sand was eroded from Marble and eastern Grand Canyons increased in summer 2011 when high volume releases from Lake Powell reservoir began.

The unprecedented combination of high upper Colorado River basin runoff, low storage levels in Lake Powell, and high Glen Canyon Dam release volumes have also affected downstream water temperature. Mid-July release temperature was about 12° C and increasing. These were the warmest releases by one degree or more than have occurred since 2005, when the release temperature was about 14° C. Predictions for water temperature of releases in 2012 indicate a return to cooler temperatures, although release temperatures are likely to remain elevated relative to periods when Lake Powell has been full.

Priorities for Next Cycle of Research and Monitoring

Monitoring and research priorities for the new funding cycle of FY 2013/2014 will be presented. These priorities reflect GCMRC's recommendations for how to resolve significant science-based management uncertainties, the need to monitor key resource components, and the commitments made to support agency needs related to the Non-native Fish Control and High Flow Protocol Environmental Assessments, the recent Biological Opinion regarding humpback chub, and other related agency actions.