

**Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
February 25-26, 2015**

Agenda Item

Technical Work Group Report

Action Requested

✓ Information item only.

Presenters

- Vineetha Kartha, Technical Work Group Chair
- Shane Capron, Technical Work Group Vice-Chair
- Leslie James, Socioeconomic Ad Hoc Group Chair

Previous Action Taken

See below.

Relevant Science

N/A

Background Information

The 2015 Annual Reporting (AR) meeting was held on January 20-21, 2015. The AR meeting outlines progress, accomplishments, and information gained on projects included in the Grand Canyon Monitoring and Research Center's (GCMRC) Work Plan for the Glen Canyon Dam Adaptive Management Program (GCDAMP). The 2015 AR meeting followed a new approach this year of being formalized as Technical Work Group (TWG) meeting in order to enhance TWG member participation. The AR meeting provides a comprehensive review of approaches relative to adaptive management practices, a knowledge assessment of resources, identifies risk of treatment or potential benefit, and ascertains policy constraints. By nature, AR meetings are an integral part of the adaptive management cycle, allowing time to consider progress and determine if course changes need to be considered. It is important to have stakeholder attendance and input during these meetings.

Overall TWG Perspective

The AR meeting included presentations and discussion of many topics, including updates of sand mass balance, correlation between channel geomorphology and sandbar building, updates on native and nonnative fish populations, introduction to a model for re-vegetation, humpback chub (HBC) translocations, Bright Angel Creek trout removal, update on native and nonnative fish interaction studies, invasive species updates, aquatic foodbase assessments, and tribal monitoring. Results of the AR meeting will be further discussed by the TWG at its April meeting. Key topics for discussion include the status of Lees Ferry fishery, status of trout population downstream of Lees Ferry,

expansion of HBC translocations, channel geomorphology, the need for monitoring, and the potential for aquatic foodbase improvement.

Cultural Perspective

Cultural presentations at the AR meeting included conditions and processes affecting sand resources at archaeological sites in the Colorado River corridor, cultural site monitoring in Glen and Grand Canyons, Hualapai traditional cultural knowledge, tourism impact on Zuni cultural resources in Grand Canyon, riparian vegetation studies update, and Southern Paiute vegetation and cultural resource monitoring program. Presentations highlighted the impacts of erosion to cultural sites in Glen Canyon, linkage between sandbars and deposition in the Grand Canyon, and continuing concerns regarding visitor impacts to cultural sites in the Grand Canyon. For additional information on tribal monitoring, please refer to the tribal monitoring reports on the GCDAMP Wiki site, at www.gcdamp.com.

An initial list of questions for the TWG to consider from the AR meeting include:

- What High Flow Experiment (HFE) flow regime, in relation to the natural supply of fine sediment from the Paria and Little Colorado Rivers, results in the largest distribution of sediment along the channel banks and in eddies?
- Can the mainstem Colorado River, under current dam operations, support self-sustaining populations of humpback chub?
- Do we have a population of humpback chub in the Grand Canyon that has met the downlisting standard under the ESA for this recovery unit?
- What are the implications of trout reproduction in the downstream reaches of Marble and Grand Canyons?
- What are the implications of continued declines in trout condition and numbers in Lees Ferry?
- Do Spring and Fall HFEs have different effects on foodbase in the Lees Ferry reach? Why?

Socioeconomic Ad Hoc Group (SEAHG)

At its February 2012 meeting, AMWG passed the following motion by consensus: “The AMWG requests the Secretary’s Designee to transmit the revised SEAHG report to the Secretary and advise him that the AMWG supports implementation of socioeconomic impact assessment studies to further our understanding of adaptive management decisions within the GCDAMP. The AMWG requests that the Secretary advise the AMWG regarding those elements of the proposed socioeconomic implementation plan that will be developed within the LTEMP development process.” The AMWG further directed the TWG to identify information needs and research priorities not addressed through the LTEMP process so that GCMRC can refine and develop a work plan. The recommendation included Table 1 that contained the information needs and associated program elements developed by the SEAHG, and Table 2 that contained the implementation plan outlining years and description of activity.

In an August 2012 letter to the TWG Chair, the Glen Canyon Dam Long Term Experimental and Management Plan (LTEMP) Environmental Impact Statement (EIS) team responded to a directional memo dated April 30, 2012 from the Secretary of Interior to reply to SEAHG regarding its proposed list of socioeconomic studies (Table 2) from its February 2012 recommendation to the Secretary. The letter clarified activities that were being undertaken as a part of the LTEMP EIS and those that remained to be pursued by the AMWG or GCMRC.

Technical Work Group Report, continued

Through 2013 and 2014, four aspects of economic analysis have moved forward through the LTEMP EIS process, including a regional economic impact analysis under Argonne National Laboratories (ANL); an economic analysis that looks at the net value of recreation under Dr. David Harpman, Bureau of Reclamation; an economic analysis of hydropower analysis under ANL; and a non-use value survey under Bruce Peacock, National Park Service. A socioeconomic program that includes recreation, tribal, and decision analysis led by Lucas Bair, GCMRC, has been included in the FY 2015-17 Triennial Work Plan (TWP).

At its October 2014 meeting, the TWG reinitiated the SEAHG and recognized Leslie James as the new Chair. The SEAHG is currently evaluating and updating the current activities and status of Tables 1 and 2.

A photograph of a lion and a tiger cub resting together in a savanna landscape. The lion is lying down, and the tiger cub is sitting next to it, resting its head on the lion's neck. The background shows a vast, hazy savanna with rolling hills and sparse vegetation under a cloudy sky.

Annual Reporting Meeting **powerful** tool

Meeting formalized under TWG agenda

enhances member participation

recognizes AR as an integral part of the budget & AMP cycle

1 MIN GUIDE: 2015 AR MEETING

TROUT
POPULATION:
Concerns!!



Riparian Vegetation
New Model



Humpback Chub Translocations
Going well

Aquatic Foodbase
Concerns!!



Channel Geomorphology
Questions

Impacts of erosion to cultural
sites in Glen Canyon



Visitor Impacts to Sites
in Grand Canyon

Linkage between sandbars and
deposition in Grand Canyon



Initial Questions for TWG to Consider

Sediment Distribution

What High Flow Experiment flow regime, in relation to the natural supply of fine sediment from the Paria and Little Colorado Rivers, results in the largest distribution of sediment along the channel banks and eddies?

Humpback Chub

Under the mainstem Colorado River, under Current Dam Operations, support self-sustaining populations of humpback chub?

Lees Ferry Fishery

What are the implications of continued declines in trout condition and numbers in Lees Ferry?

Cultural Sites

What are the implications for Type C sites going forward?

Foodbase

Do Fall & Spring HFEs have different effects on foodbase in the Lees Ferry Reach?