

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
February 9-10, 2011

Agenda Item

WY 2012 Hydrograph Development

Action Requested

- ✓ Feedback is requested from AMWG members.

Presenter

Shane Capron, Technical Work Group Chair (Western Area Power Administration)

Previous Action Taken

- ✓ By AMWG: In **May 2010**, AMWG approved the “GCDAMP Biennial Budget Process,” which specifies that TWG will recommend an annual hydrograph to AMWG (Section 3.7) as part of the budget development process.
- ✓ By TWG: For WY11, TWG considered two proposed hydrographs, and recommended AMWG consider one of them, with that consideration to include a more detailed explanation of expected resource results, energy and capacity impacts, and operational concerns.

Relevant Science

Wright, S.A., and Grams, P.E. 2010. Evaluation of Water Year 2011 Glen Canyon Dam flow release scenarios on downstream sand storage along the Colorado River in Arizona: U.S. Geological Survey Open-File Report 2010-1133, 19 p.

Wright and Grams (2010) found that the steady year-round flows consistently ranked highest for sand retention and provide an upper bound for comparison. Steady daily flows and equal volumes had similar results that indicated more sand retention than MLFF. The equalized monthly volume scenario retained slightly more sand for 11 maf scenarios, while steady daily flows retained slightly more for 8.23 maf scenarios. Seasonally adjusted flows ranked high for 11 maf and low for 8.23 maf, because the maximum flow in this operating regime (18,000 cfs) is imposed for both volumes. The increased daily range consistently ranks just below MLFF for sand retention.

In general, they found that the total annual release volume had the strongest impact on sediment transport and retention. In comparing scenarios with identical annual volumes, the differences in sand accumulation result from the different distribution of monthly volumes and daily patterns.

This paper can be found at http://www.usbr.gov/uc/rm/amp/amwg/mtgs/11feb09/OPF_2010-1133.pdf.

Background Information

The hydrograph development process is described in the AMWG-approved “GCDAMP Biennial Budget Process.” In that process, which is intended to complement the budget development process, TWG is to consider a hydrograph proposal using the Reclamation 24-month study as the starting point, and then to consider other proposals. TWG is to make a recommendation to AMWG at its August meeting of each year.

In 2010, several possible hydrograph scenarios were analyzed by GCMRC (Wright and Grams 2010). TWG considered these analyses, as well as two hydrographs proposed by stakeholders, and recommended one to the AMWG for adoption.

The process was undertaken late in the year, and due to the compressed timeframe, the TWG may not have adequately considered all views within the AMP. TWG hopes to refine this process for WY 2012. TWG’s intent is to have a deliberate process that considers reasonable proposals, evaluates resource impacts and trade-offs, utilizes GCMRC expertise in a considerate timeline that fits into their field schedule, and that results in a well-reasoned and documented proposal to AMWG and the Secretary.

The TWG chair will present the following schedule at the AMWG meeting for feedback from AMWG members.

Schedule:

Body	Time	Action
TWG	January	Consider initial hydrograph proposals. TWG describe proposals they have received at the February AMWG meeting.
AMWG	February	Presentation of hydrograph proposals, consideration of development process and comments. Other proposals may be offered.
TWG	March	Refinement of proposals, discussion of resource benefits, costs, and effects.
	March - June	Resource analysis conducted, final proposals developed. Potential additional analyses by GCMRC and use of GCMRC expertise in assessing resource effects from proposals.
TWG	June	Recommendation to AMWG on WY 2012 hydrograph.
AMWG	August	Recommendation to Secretary on WY 2012 hydrograph.



WY 2012 Hydrograph Development TWG Chair Report

By Shane Capron
Chair, Technical Work Group

GCDAMP BIENNIAL BUDGET PROCESS

Approved by AMWG on May 6, 2010

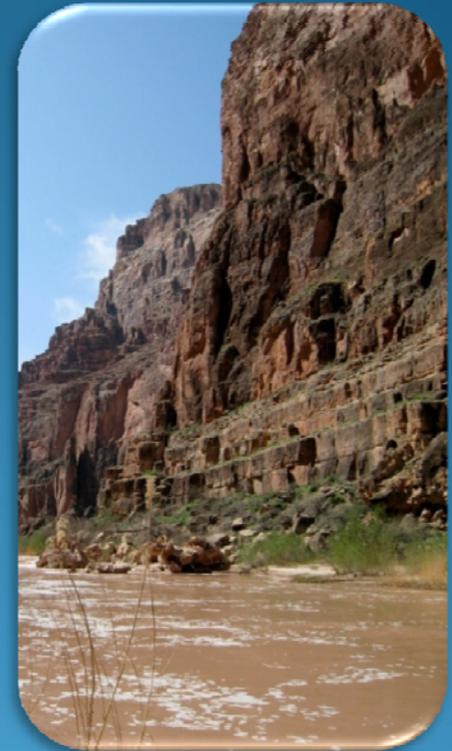
Section 3.7 Hydrograph Development

The hydrograph of releases from Glen Canyon Dam emerges from a 24-month modeling study accomplished by Reclamation. Modeling outputs reflect anticipated inflows and reservoir storage to project annual and monthly dam releases. Daily fluctuations are predicated on agreements in the 1996 Record of Decision and the 2008 FONSI on dam operations. The TWG will be provided with Reclamation's 24-month findings, recognizing that these projections change with each month, to advise them of the most probable future release scenarios. **TWG members will provide a recommendation for the hydrograph within the BWPH to AMWG at their draft and final BWPH meetings.**



The Objective

- Develop a WY 2012 Hydrograph recommendation for AMWG to consider
- Have opportunity for all reasonable proposals to be considered in a timely manner
- Have a standard set of resources to address for impacts
- Use GCMRC staff wisely/timely



BACKGROUND

- In 2010, Wright and Grams (2010) was developed to analyze the impacts on sediment of a number of hydrograph scenarios (Open-File Report 2010–1133)
- This involved continued tweaking and re-arranging of the list as topics became combined or altered through discussion
- In 2010, the DOI/DOE proposal came into the process late, TWG had already begun considering a range of hydrograph proposals
- Unclear what the process was, what analyses were needed, and what level of review and approval

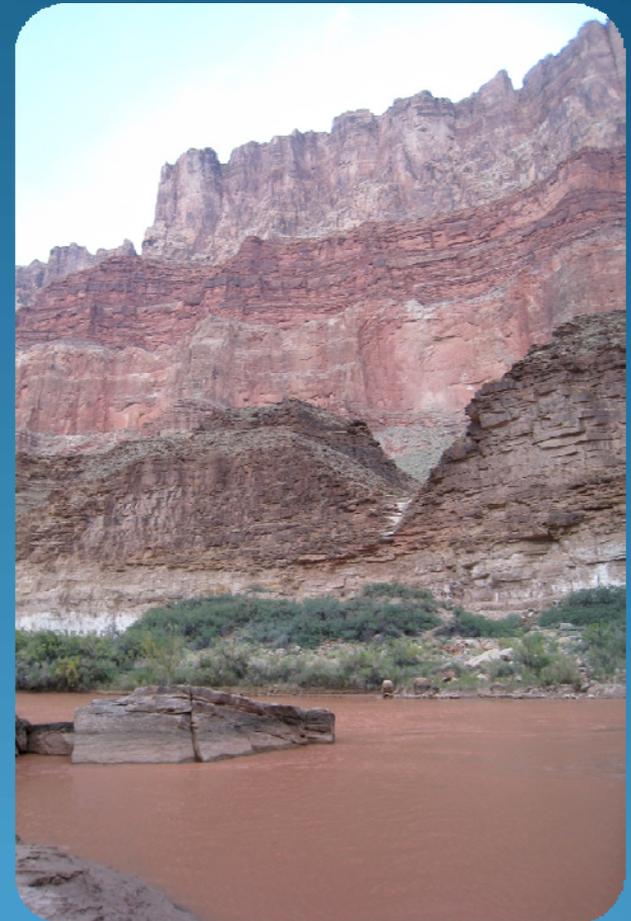
PROPOSED SCHEDULE

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PROPOSALS

- DOI/DOE
- Grand Canyon Trust
- TWG, science



NEXT STEPS

1. Refine proposals for March TWG meeting.
2. Define resources which should be assessed in the analysis (e.g., sediment, fish, power, etc.)
3. Any other proposals from AMWG?