

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

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Agenda Item

Development of 2013 Hydrograph

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Action Requested

✓ This is an information item.

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Presenter

Dave Trueman, Division Manager, Upper Colorado Region, Bureau of Reclamation

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Previous Action Taken

✓ By AMWG:

At the August 2011 AMWG meeting, the following motion was passed:

AMWG recommends to the Secretary of the Interior his approval of the DOI-DOE Proposed Hydrograph for Water Year 2012 as follows:

- Monthly Release Volumes will be adjusted each month based on the most current forecast of the annual release required by the 2007 Interim Guidelines.
- Monthly Release Volumes are anticipated to vary within the targets identified for each month as set forth below. This monthly operational flexibility will be used for existing power production operations under the Modified Low Fluctuating Flow (MLFF) alternative selected by the 1996 ROD and contained in the 1995 FEIS. The targeted operation will also be adjusted as necessary to accommodate a targeted release volume for the month of August 2012 based on the schedule below:
  - January: August 2012 Volume target set to greater of 800 kaf or 10% remaining annual release volume.
  - February: August 2012 Volume target set to greater of 800 kaf or 10% remaining annual release volume.
  - March: August 2012 Volume target set to greater of 800 kaf or 12% remaining annual release volume.
  - April: August 2012 Volume target set to greater of 800 kaf or 15% remaining annual release volume.
  - May: August 2012 Volume target set to greater of 800 kaf or 20% remaining annual release volume.
  - June: August 2012 Volume target set to greater of 800 kaf or 25% remaining annual release volume.
  - July: August 2012 Volume target set to greater of 800 kaf or 40% remaining annual release volume.
  - August: Release volume established as 100% of remaining annual release volume (release could be less than 800 kaf in some cases).
- In some Equalization release scenarios, the release volume required in August could be as high as the full capacity of the power plant.

## Development of 2013 Hydrograph, continued

- Steady flows will occur in September 2012 (and October 2012) per the 2008 HFE Environmental Assessment (EA).
- Monthly release volumes will be modified each month in consultation with Western Area Power Administration.
- The remaining annual release volume will be computed as the projected WY2012 annual release volume pursuant to the Interim Guidelines less volume already released in WY2012 less the September 2012 projected Steady Flow Experiment release volume.
- Additionally, the Bureau of Reclamation will continue to apply best professional judgment in conducting actual operations and in response to changing conditions throughout the water year. Such efforts will continue to be undertaken in coordination with the DOI/DOE agencies to consider changing conditions and adjust projected operations in a manner consistent with the objectives of these parameters as stated above and pursuant to the Law of the River.

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### Relevant Science

N/A

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### Background Information

The presentation will include a brief review of the 2012 hydrograph development and an overview of the upcoming 2013 hydrograph development process.

In cooperation with the other federal agencies, Reclamation is beginning its development of Interior's recommendation for the 2013 Hydrograph. This recommendation will be based upon the scenarios analyzed for the 2012 Hydrograph and any new ideas that may become known through our discussions. Reclamation will review the analyses with the TWG and Interior will provide a recommendation for the AMWG's consideration later this year.

# 2013 Hydrograph Development

# 2012 Hydrograph Review

- Started with 2011 Hydrograph  
(+/-100 kaf w/16,000 & 22,000 cfs limits)
- Considered operating experiences from 2011
- Looked to improve cost/benefit/flexibility
- Stay within existing environmental compliance for MLFF and subsequent EA's

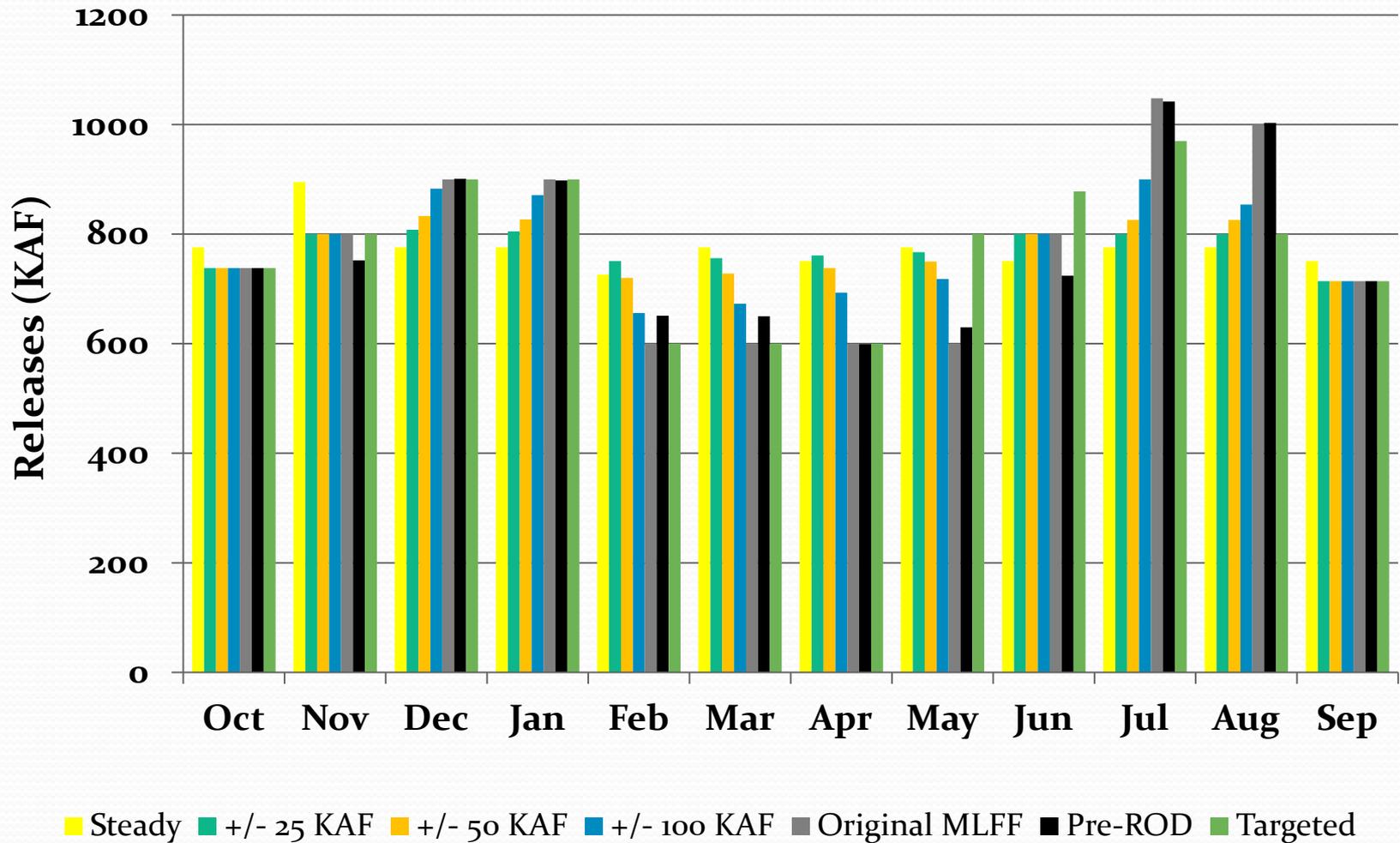


# Methods

- USGS Model for sand
- Western's GTMAX hourly model for costs to the Basin Fund
- Compare against original MLFF
- Objective – Retain sand inputs high in the system in anticipation of a potential HFE

# Bounding the Options

## Monthly Release Volumes for 9.3 maf year With November 2011 HFE



# Finalists

## 2011 Hydrograph

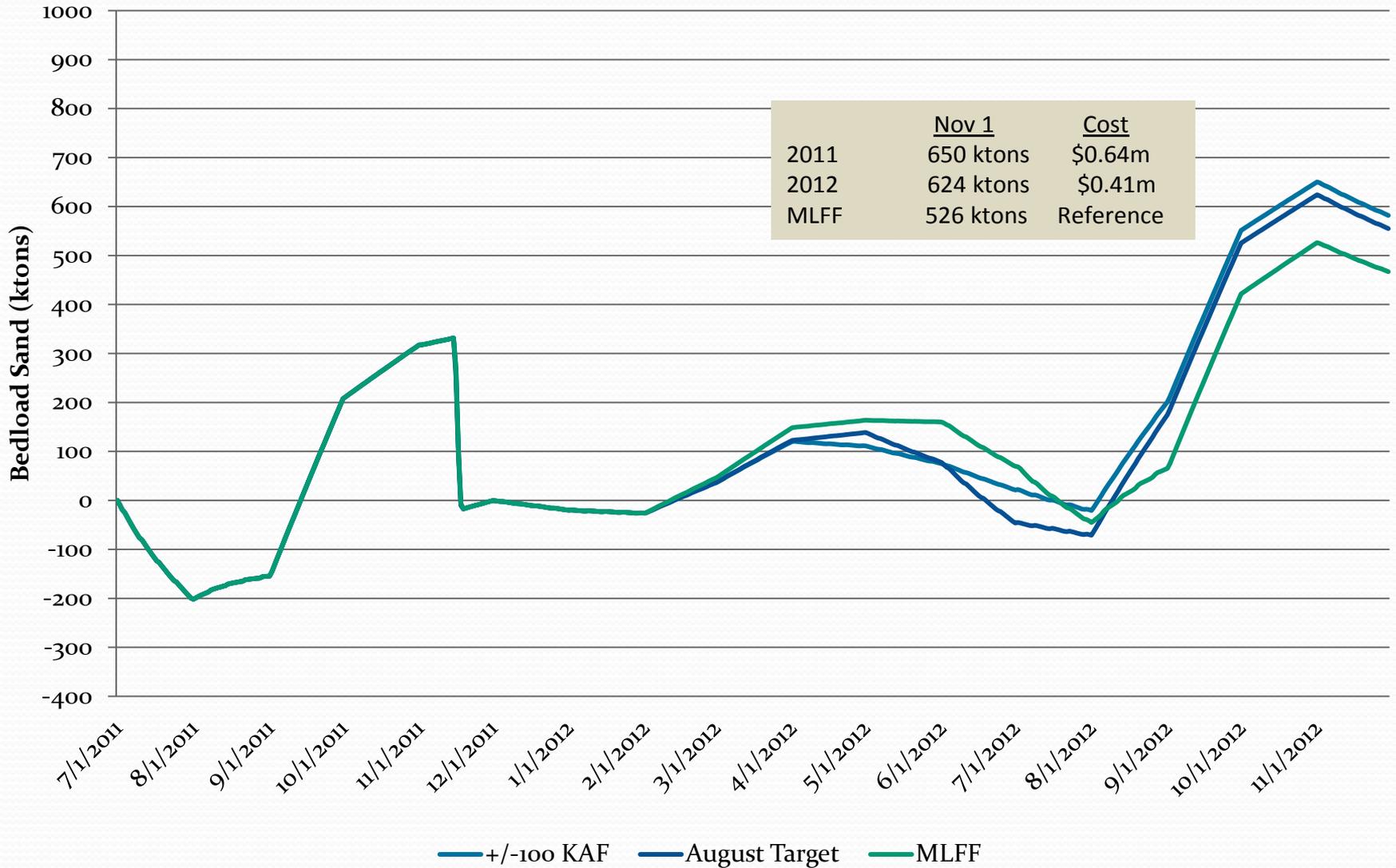
- Monthly volume may vary +/- 100 kaf from average of remaining balance
- 16,000 cfs limit up to 11.0 maf annual release
- 22,000 cfs limit above 11.0 maf annual release
- No limits if needed for equalization
- ROD limits apply

## 2012 Targeted Method

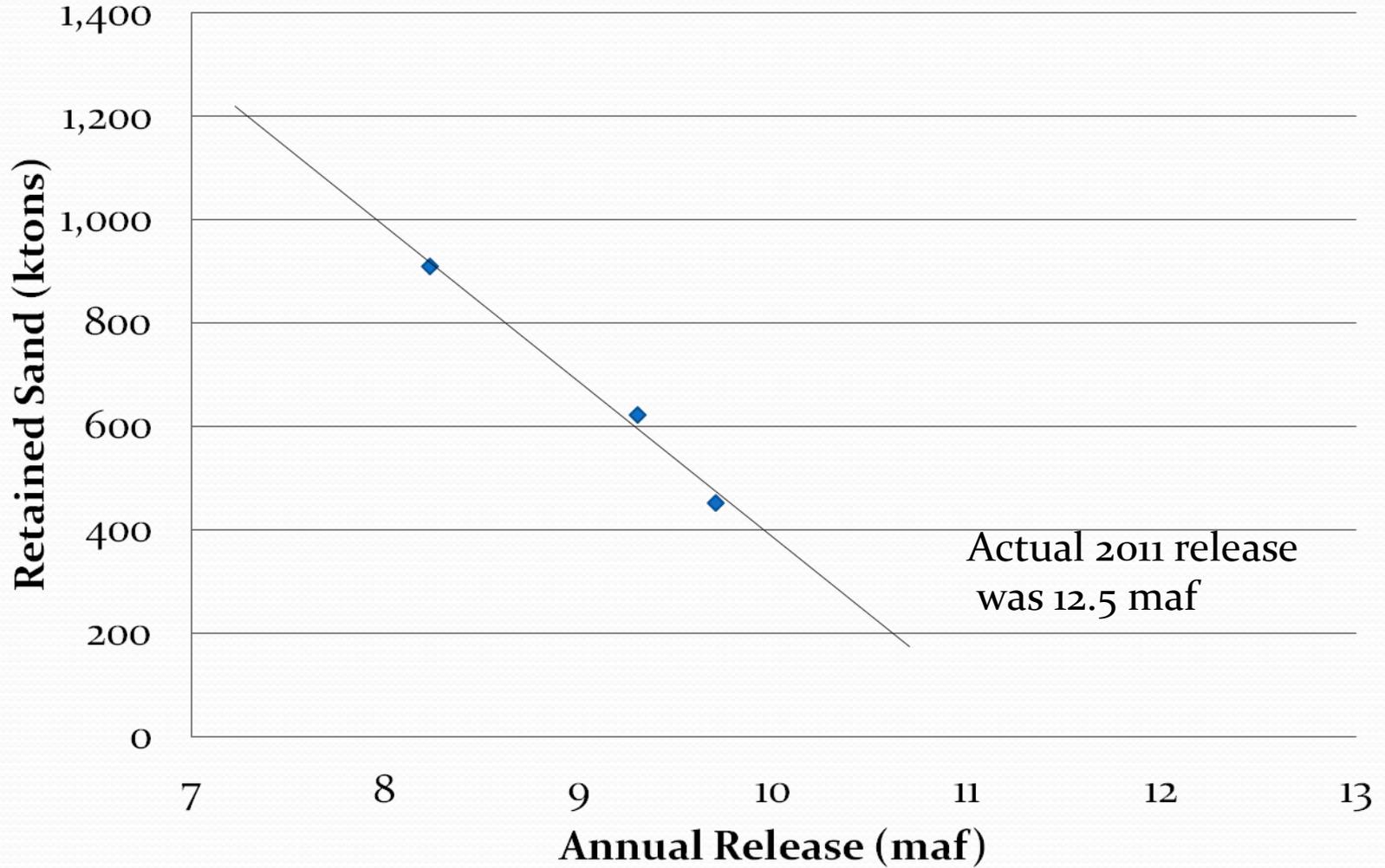
- August releases are limited using percentage method to conserve sediment inputs
- Sept/Oct low-steady releases also conserve sediment
- No limits on other months
- No limits if needed for equalization
- ROD limits apply

# Upper Marble Canyon (RM30)

## 9.3 maf



## Projected Sand Retained (November)





# 2013 Hydrograph Development

- Consider past analyses
- Consider new suggestions
- Look to improve cost/benefit/flexibility
- Stay within existing environmental compliance