

**Glen Canyon Dam Adaptive Management Work Group**  
**Agenda Item Information**  
**May 22-23, 2008**

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Agenda Item

Basin Hydrology and Operations

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Action Requested

√ Information item only; we will answer questions but no action is requested.

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Presenters

Tom Ryan, Program Manager, Upper Colorado Region, Bureau of Reclamation

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Previous Action Taken

√ N/A

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Relevant Science

√ N/A

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Background Information

The presentation is intended to provide pertinent information to AMWG members on the hydrology of the Upper Colorado River Basin and projected reservoir operations at Lake Powell/Glen Canyon Dam. Such information is provided to assist the AMWG in developing recommendations to the Secretary on the operation of Glen Canyon Dam, particularly when such recommendations are near-term in nature.

The presentation will cover current reservoir storage conditions in the Upper Colorado River Basin and drought status. The presentation will also cover the implementation of the *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead* and equalization releases from Lake Powell in water year 2008.

# RECLAMATION

*Managing Water in the West*

## **Basin Hydrology – 2008 Glen Canyon Dam Operations**

### **Adaptive Management Work Group**

**Phoenix, Arizona**

**May 22, 2008**

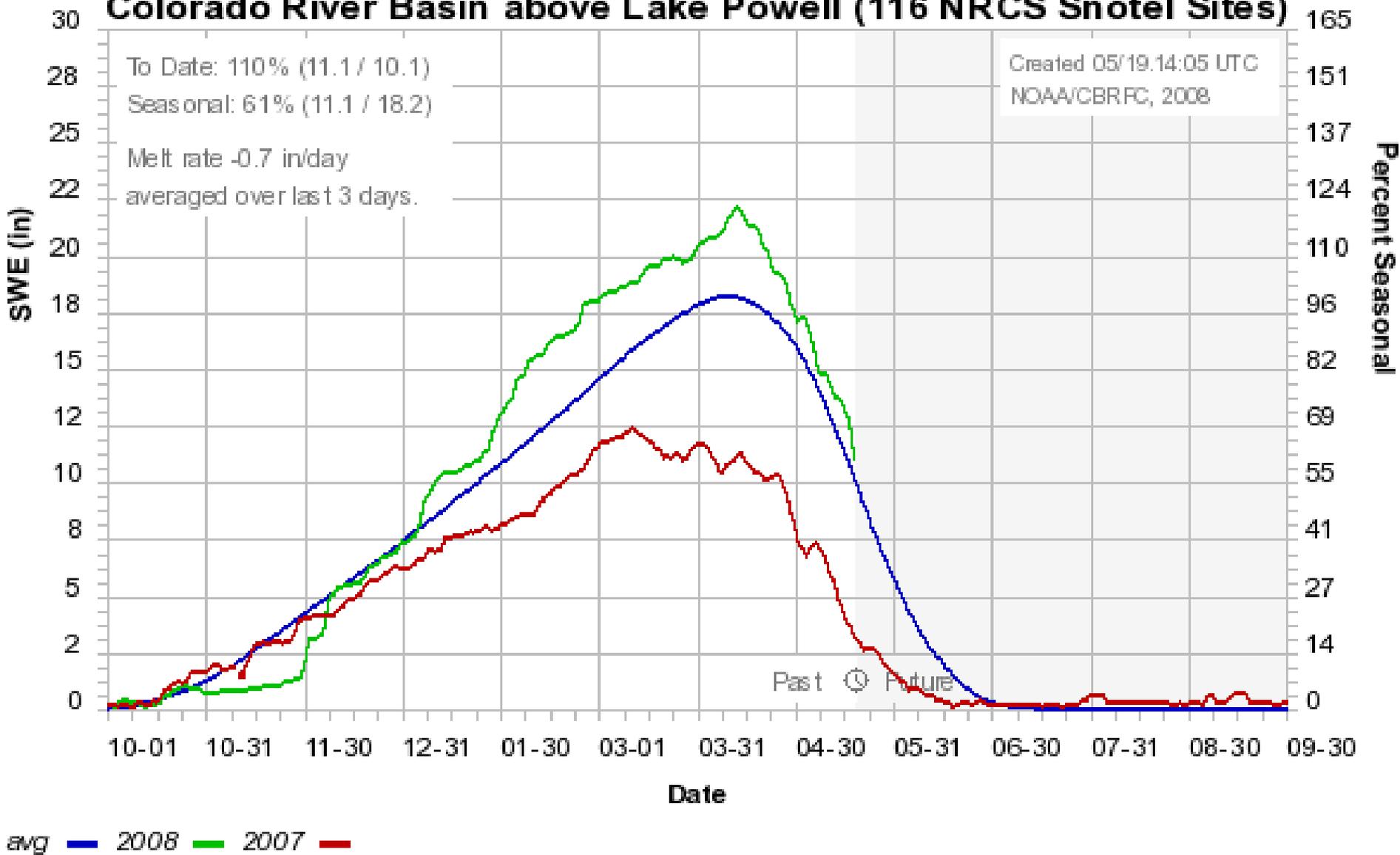


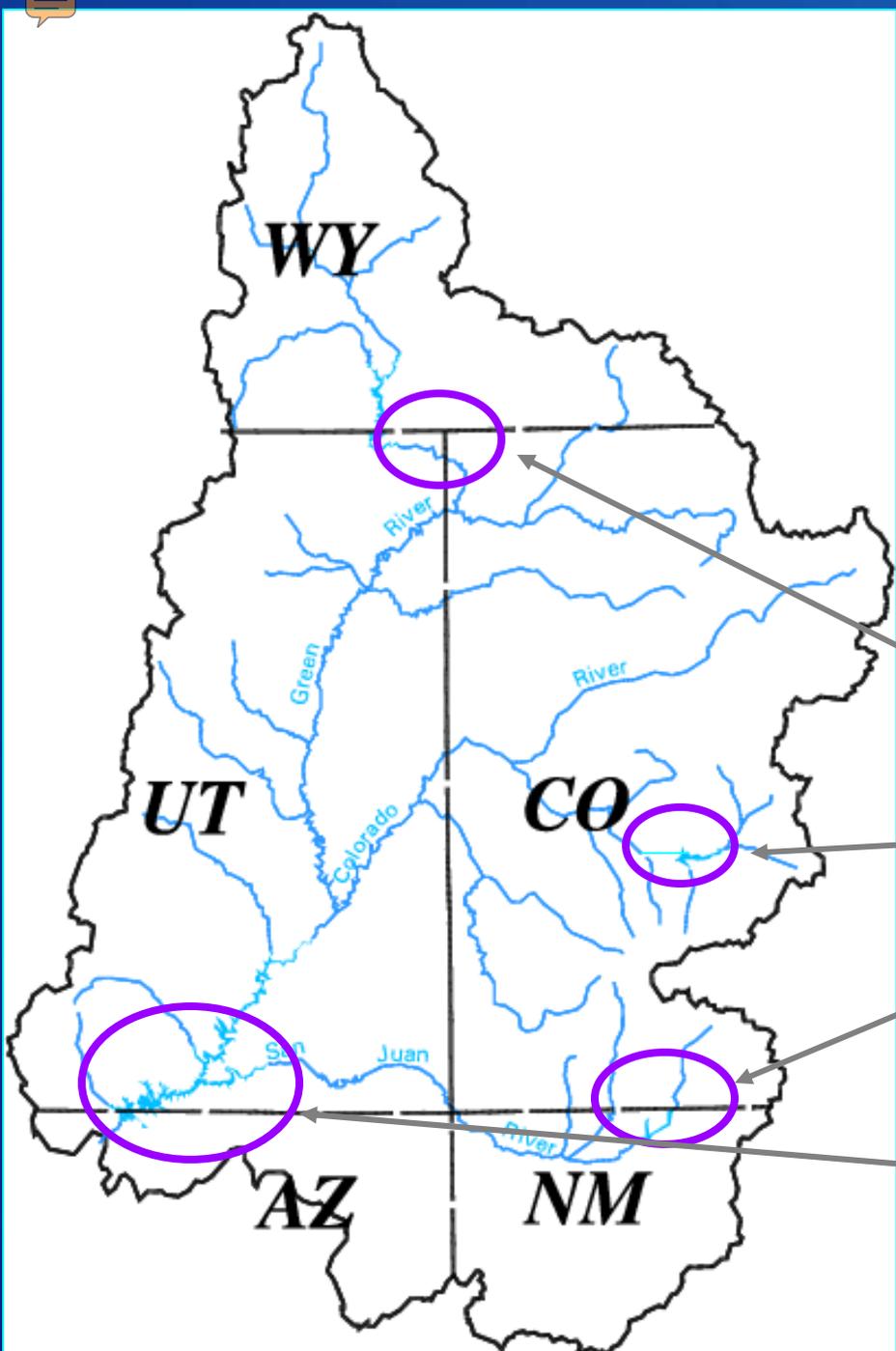
U.S. Department of the Interior  
Bureau of Reclamation



# Colorado Basin River Forecast Center

## Colorado River Basin above Lake Powell (116 NRCS Snotel Sites)



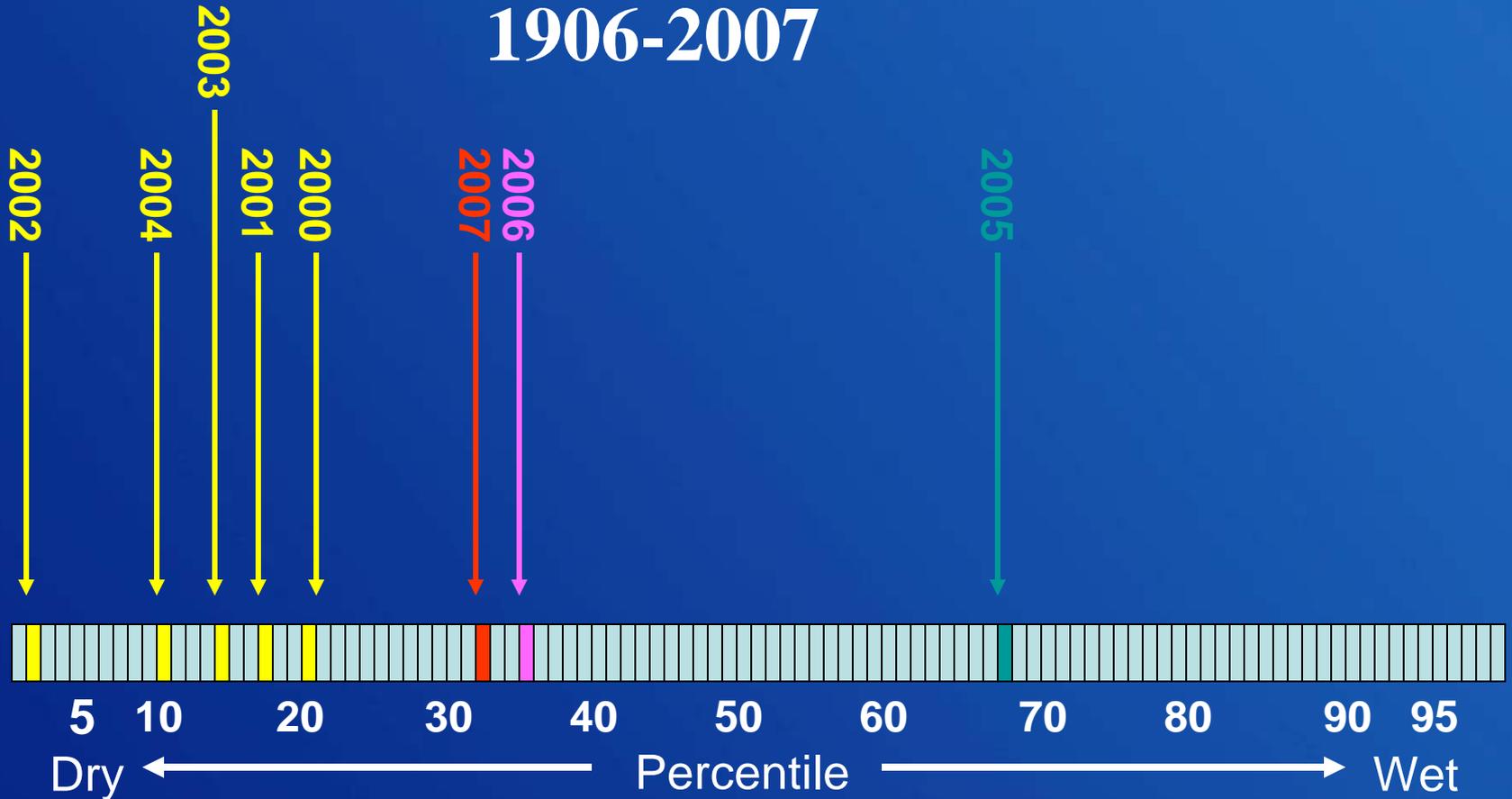


# Forecasted April–July Unregulated Inflow (May mid-month 2008 Forecasts)

- Flaming Gorge – 69 %
- Blue Mesa – 153 %
- Navajo – 131 %
- Lake Powell – 116 %

**RECLAMATION**

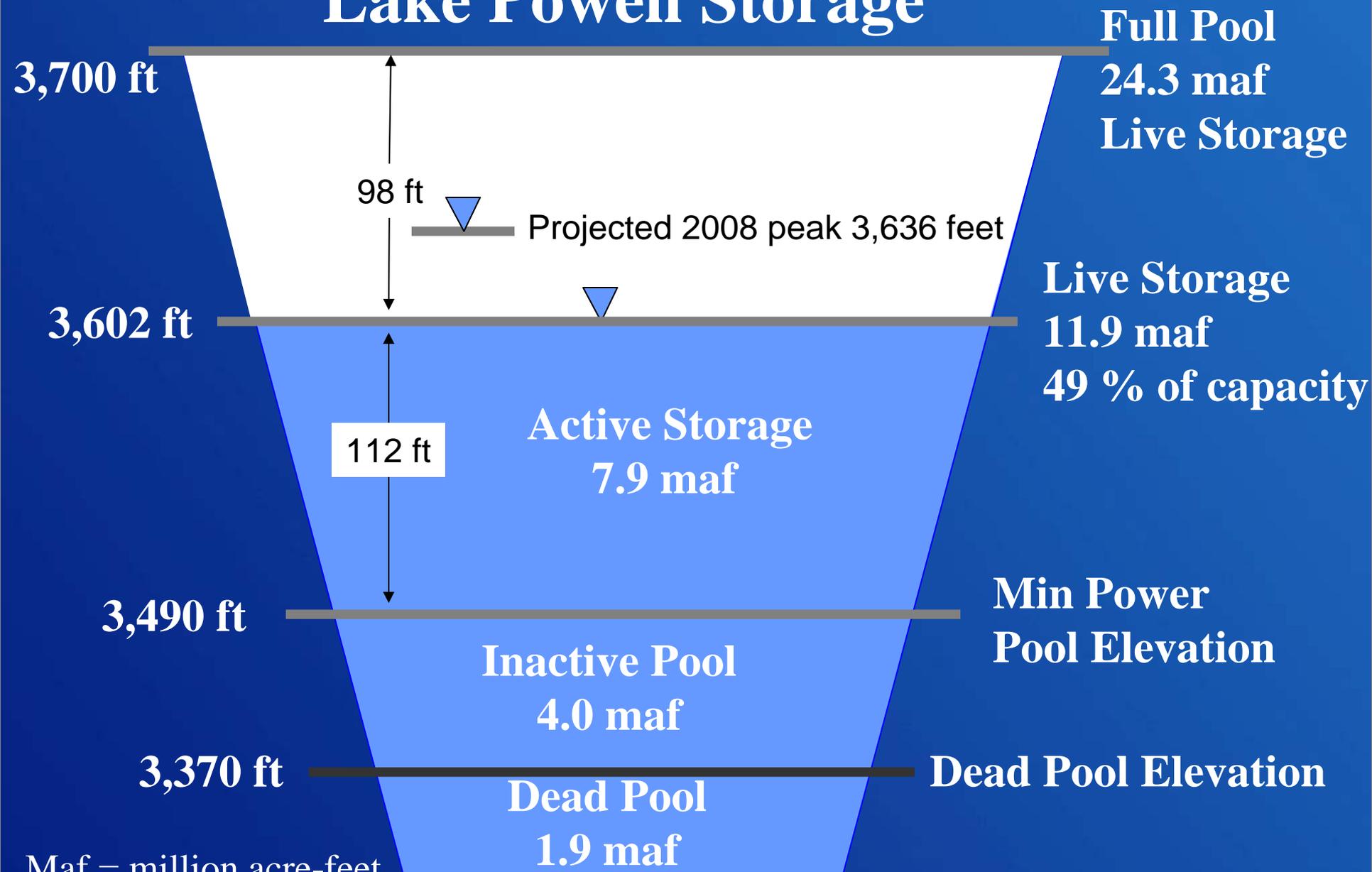
# 102 Years of Natural Flow Lees Ferry, Arizona 1906-2007



2006 and 2007 are provisional

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# Lake Powell Storage



Maf = million acre-feet

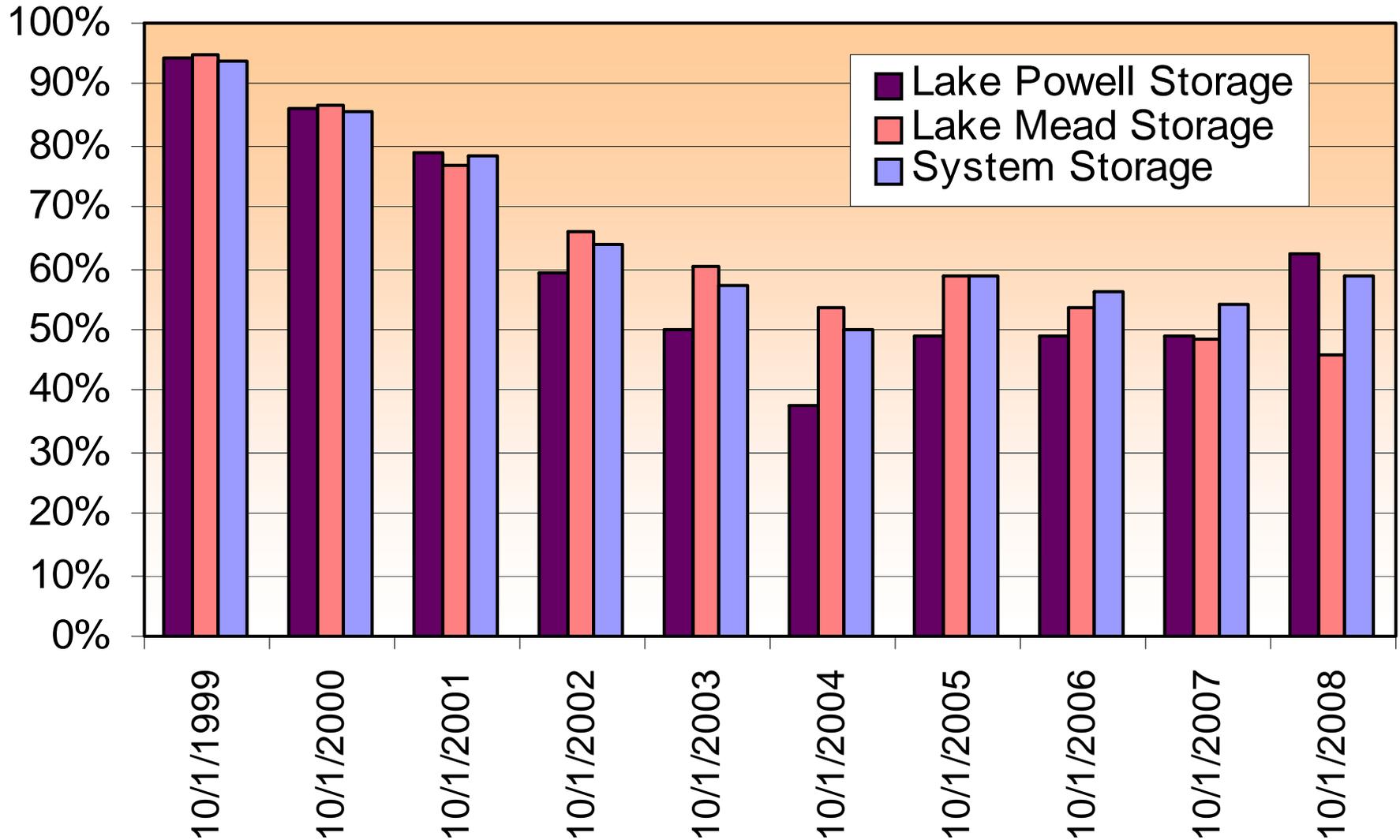
Not to scale

May 21, 2008

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# Lakes Powell and Mead - C.R. System Storage

## Water Years 1999-2008



October 2008 Values are Projected  
From the May 24 Month Study

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# Equalization

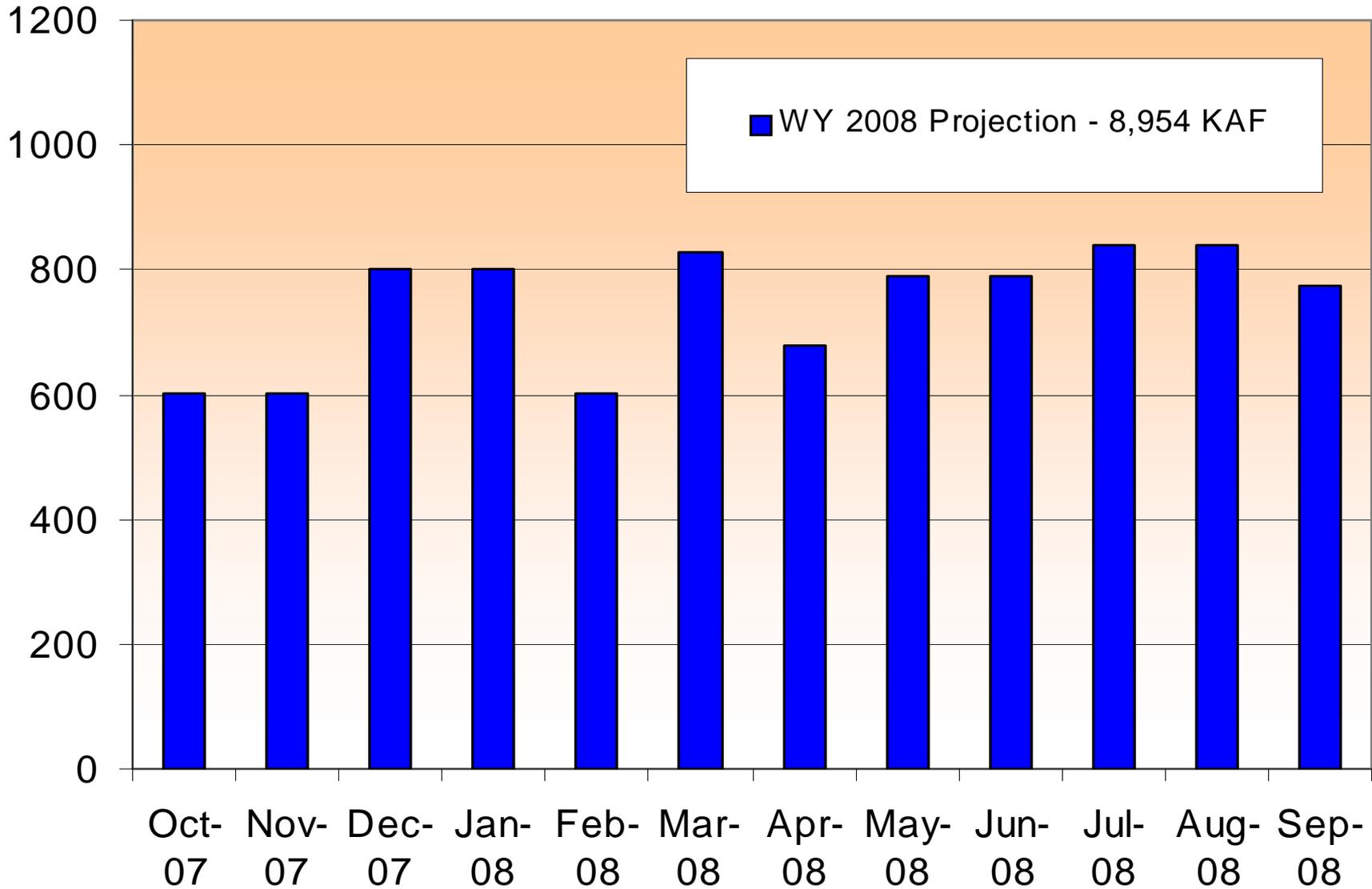
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# Interim Guidelines - Section 6.A

“ . . . if Lake Powell reaches the elevation stated in the Lake Powell Equalization Elevation Table for that Water Year and the September 30 projected Lake Mead elevation is below elevation 1,105 feet, the Secretary shall release additional water from Lake Powell to Lake Mead until the first of the following conditions is projected to occur on September 30: (i) the reservoirs fully equalize; (ii) Lake Mead reaches elevation 1,105 feet; or (iii) Lake Powell reaches 20 feet below the elevation in the Lake Powell Equalization Elevation Table for that year.”

The 2008 equalization level is 3,636 feet.

# WY 2008 Projected Releases from Lake Powell (KAF)



Projection based on May 24 Month Study (724 KAF of Equalization)

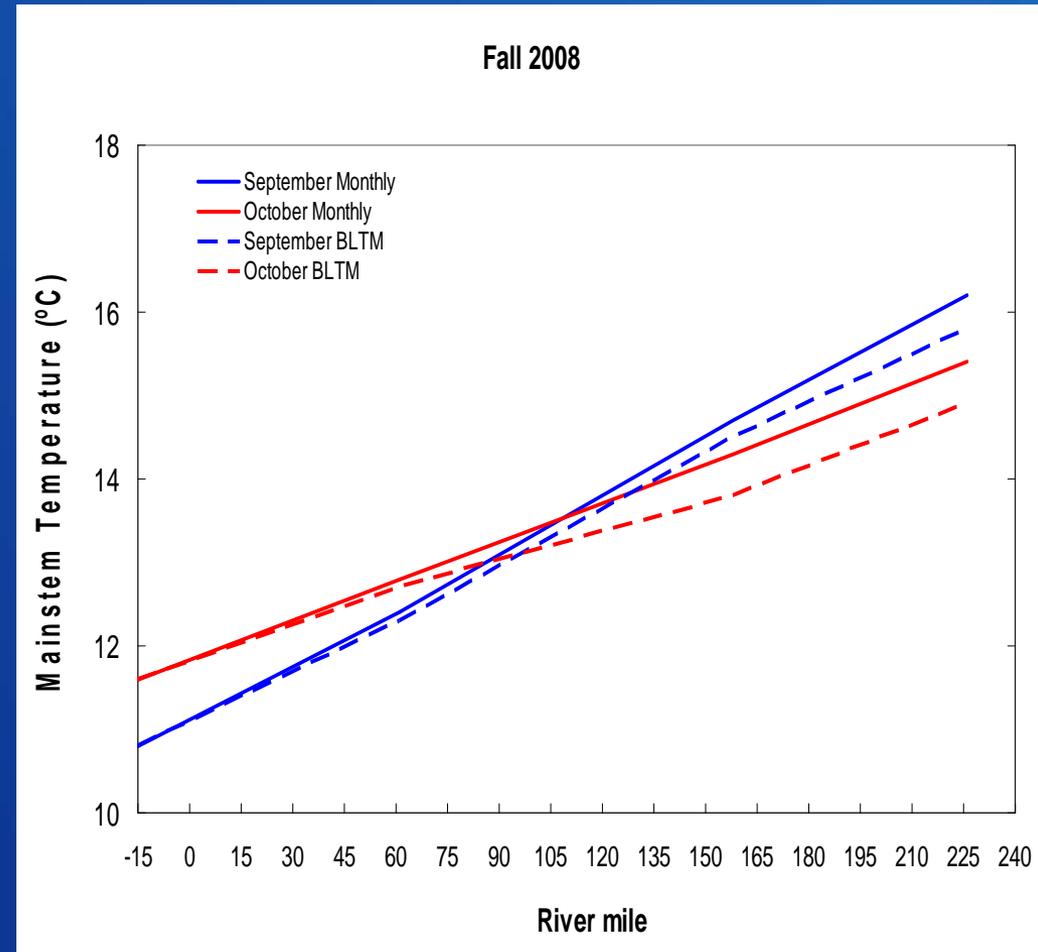
RECLAMATION

# Information on Glen Canyon Operations and Upper Basin Hydrology

- [www.usbr.gov/uc/water/crsp/cs/gcd.html](http://www.usbr.gov/uc/water/crsp/cs/gcd.html)
  - updated monthly or as significant changes occur
- Monthly email – contact [rclayton@uc.usbr.gov](mailto:rclayton@uc.usbr.gov) to subscribe

# Projected Fall 2008 Mainstem Temperatures Under Steady Flows

- **2 water temperature models**
  - **Monthly average model (Monthly)**  
(Wright and Anderson, in press)
  - **1-D Mainstem model (BLTM)**  
(Anderson and Wright, 2007)
- **Projected release temps from Lake Powell CE-QUAL-W2 Reservoir model**  
(USBOR, Salt Lake City)
- **Projected monthly release volumes from April 2008 24-month water forecast for Lake Powell** (USBOR, Salt Lake City)
- **Using 1990-2005 meteorological data from Page, AZ** (NOAA NCDC)



# 1-D Mainstem Model Projections

