

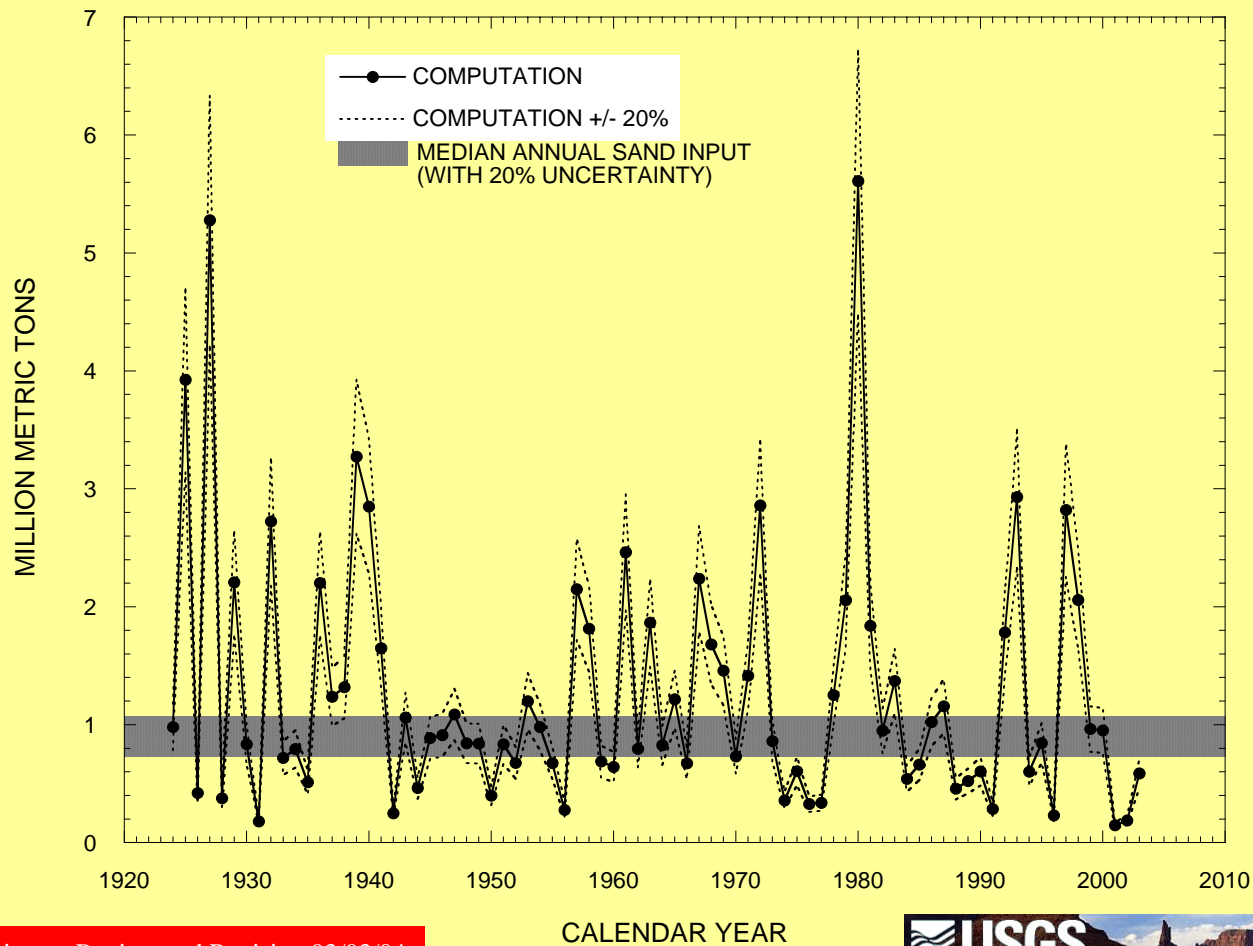
# Grand Canyon Monitoring and Research Center

## WY 2003 Experimental Fine-Sediment Update Between Lees Ferry & Phantom Ranch



# Annual Paria River Sand Inputs Jan. 1923 – Oct. 2003

PARIA RIVER ANNUAL SAND INPUT



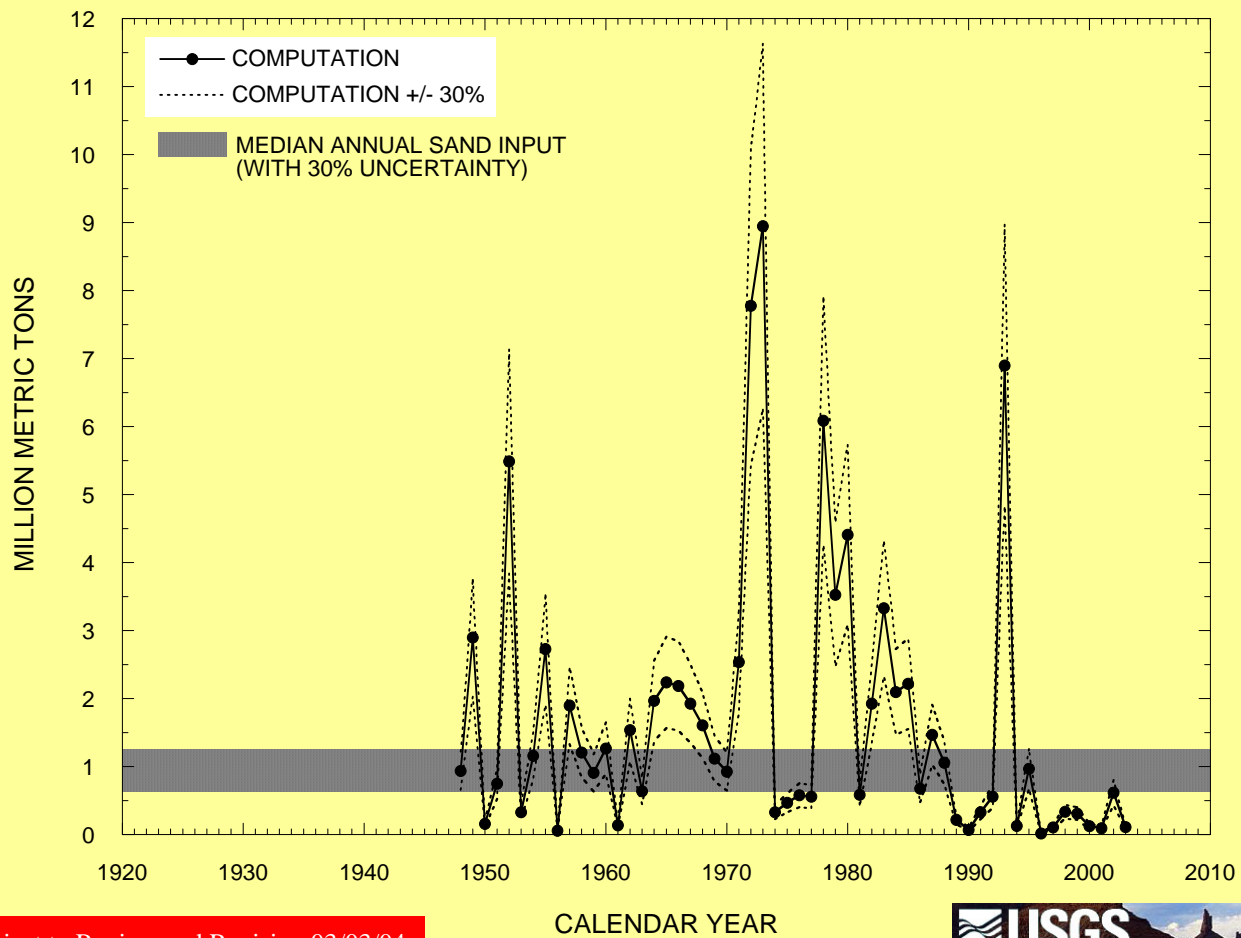
Preliminary Data – Subject to Review and Revision 03/03/04





# Annual Little Colorado River Sand Inputs Jan. 1948 – Oct. 2003

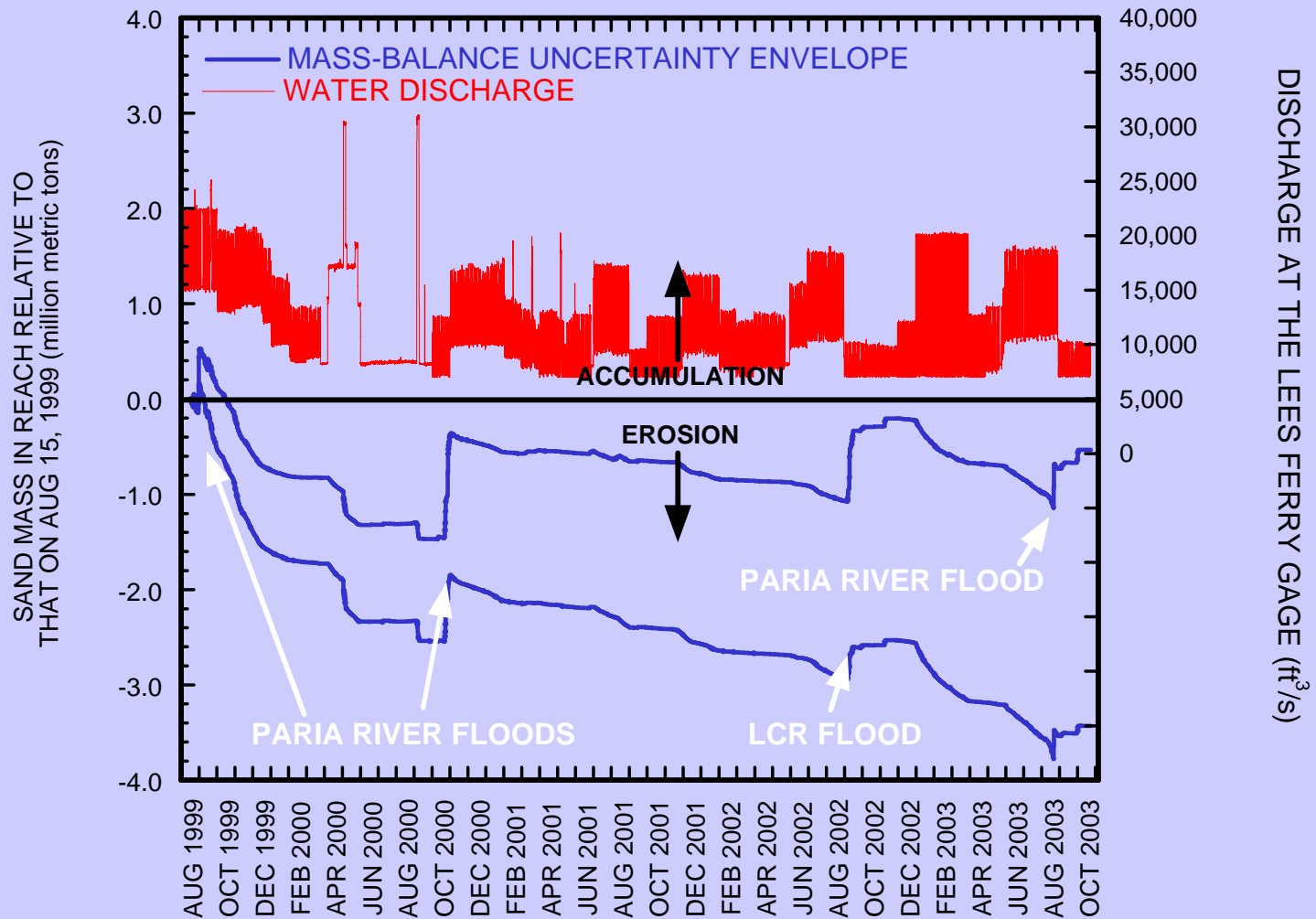
LITTLE COLORADO RIVER ANNUAL SAND INPUT



Preliminary Data – Subject to Review and Revision 03/03/04

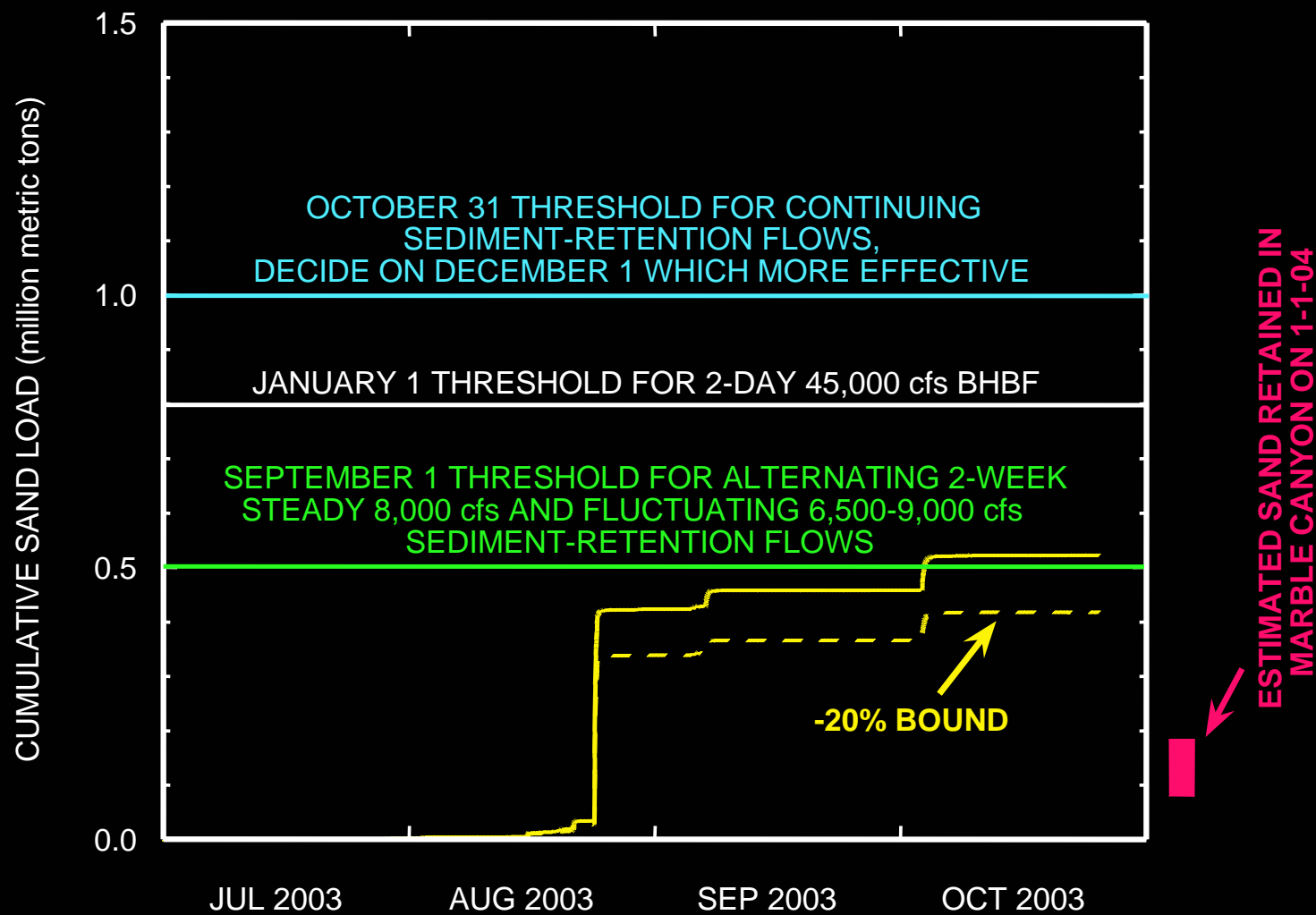


## MASS-BALANCE SAND BUDGET BETWEEN LEES FERRY AND THE GRAND CANYON GAGE



**Preliminary Data – Subject to Review and Revision 03/03/04**

# PARIA RIVER EXPERIMENT UPDATE



**Preliminary Data – Subject to Review and Revision 03/03/04**



# Southwest Biological Science Center - GCMRC

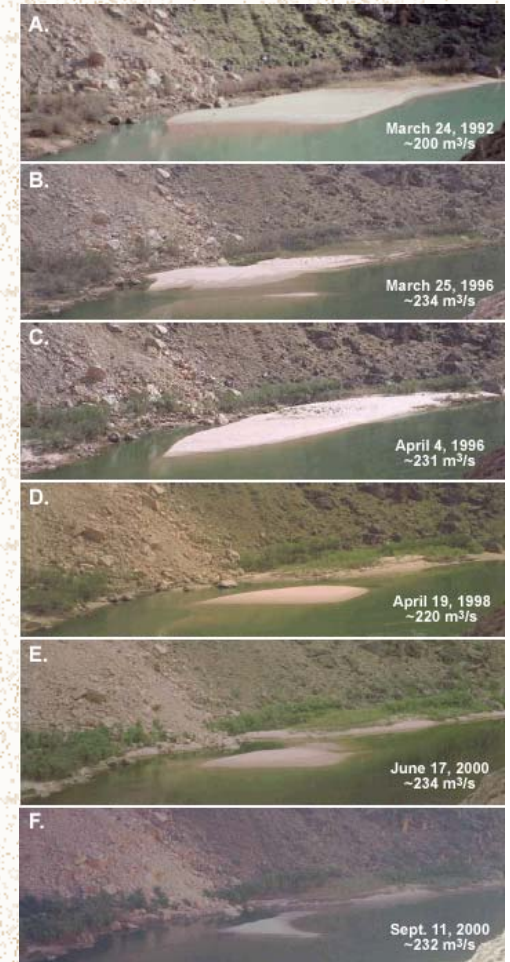
## Take Home Messages



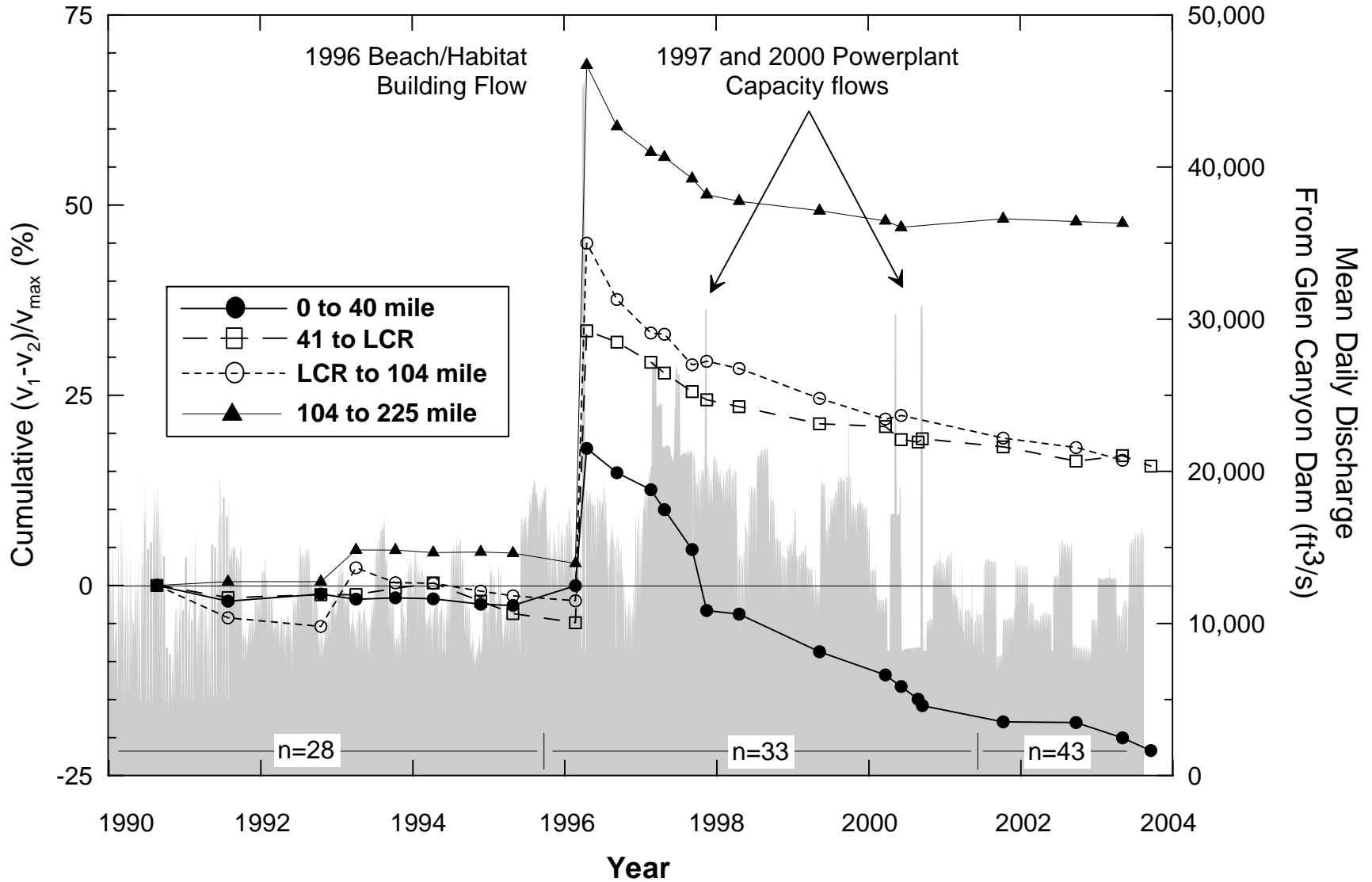
**SAND INPUTS & TRIGGERS** *Paria River sand Inputs were below levels required for EHF trigger, as well as the 1<sup>st</sup> trigger required for 8,000 cfs vs low fluctuating flow comparison in Sept. & October (close, but not quite there)*

**SAND BAR UPDATE** *Bar volumes in Upper Marble Canyon are less than measured in 1990 and continue to erode within both the active fluctuating and high-elevation zones.*

*Bar volumes between 8,000 and 25,000 cfs are less than 1990 conditions except at sites between rm 65 and 104, while high-elevation volumes below rm 40 are still higher than 1990*

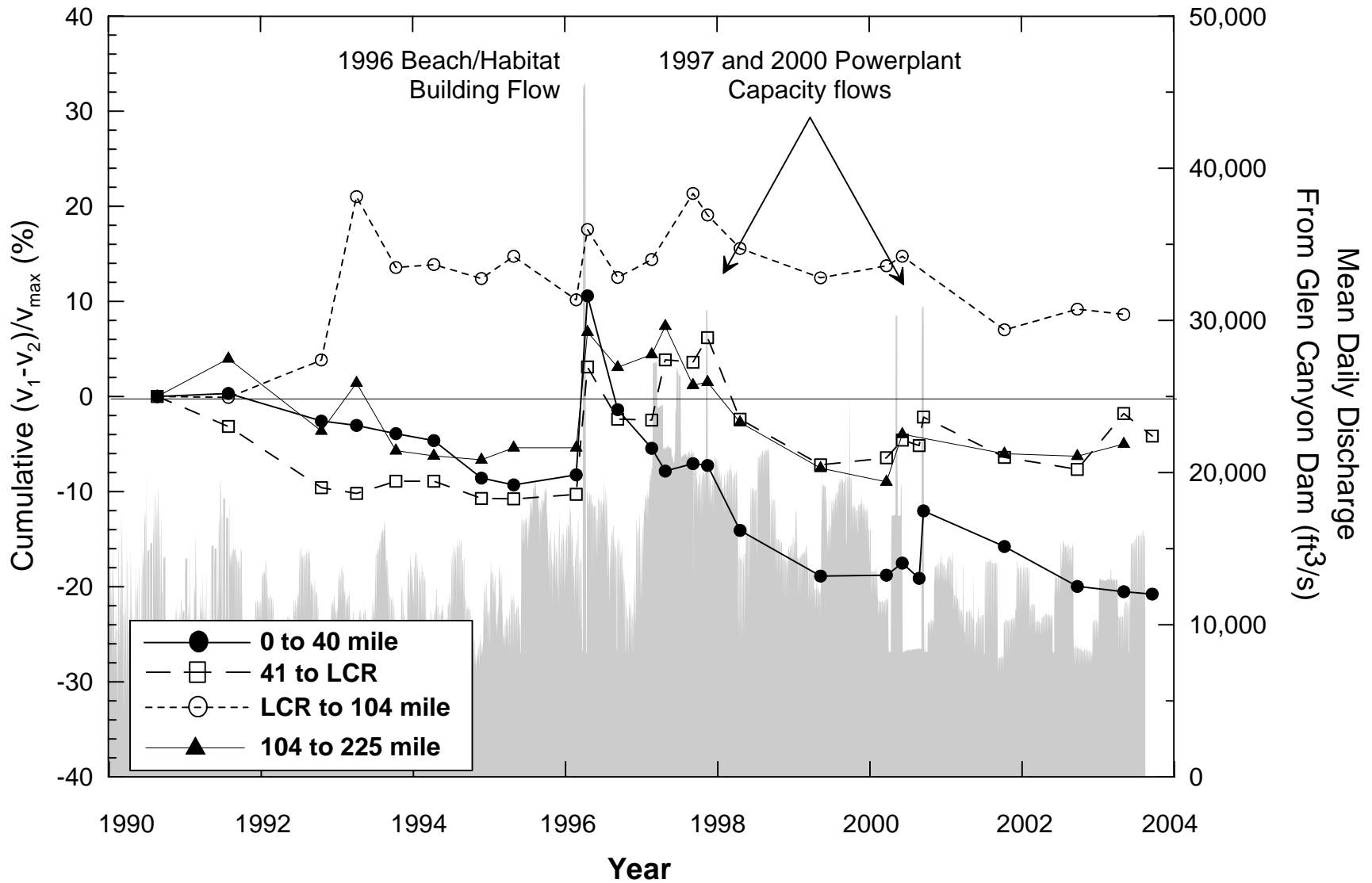


### Cumulative Median Change Above 25,000 ft<sup>3</sup>/s



**Preliminary Data – Subject to Review and Revision 03/03/04**

### Cumulative Median Change in the Fluctuating Zone (8,000-25,000 ft<sup>3</sup>/s)



**Preliminary Data – Subject to Review and Revision 03/03/04**