

Reservoir Sediment Management

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BUILDING STRONG®



Making the Problem Real

<https://www.youtube.com/watch?v=3tmfu5anMSA>



Examples of Reservoir Sedimentation



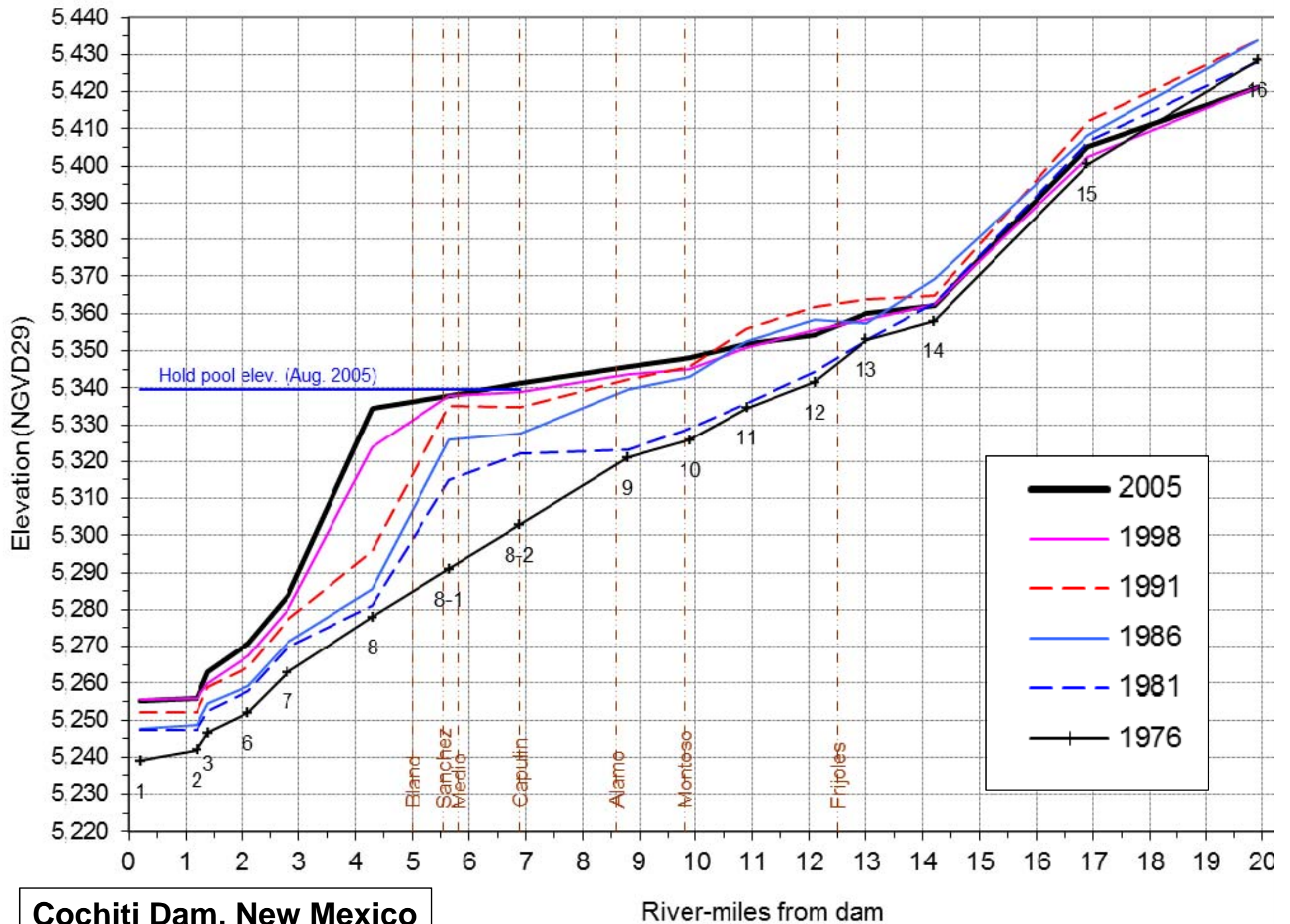
1939



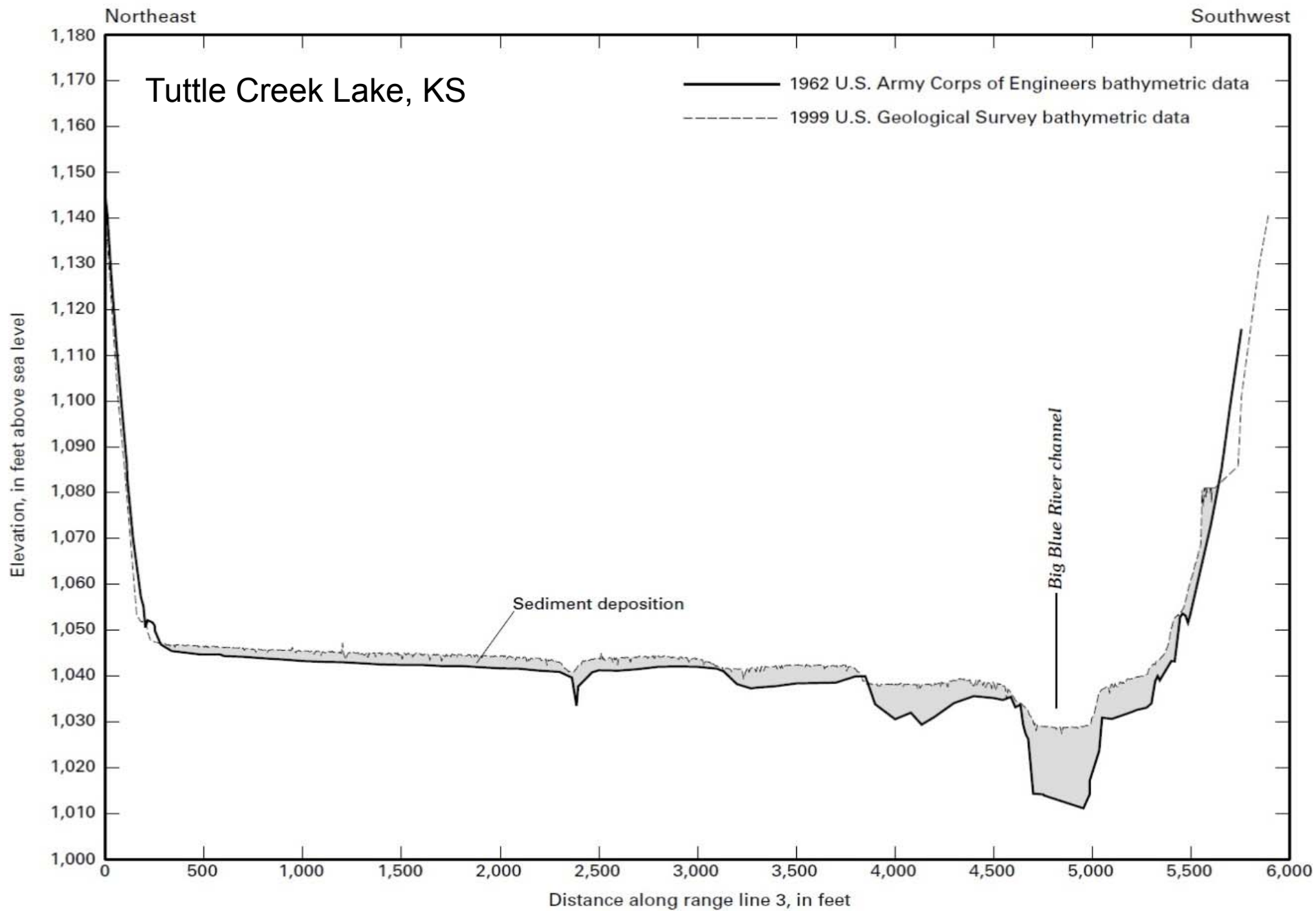
2000



Lake Mills upstream of Glines Canyon Dam



Line 10 data are tentative.



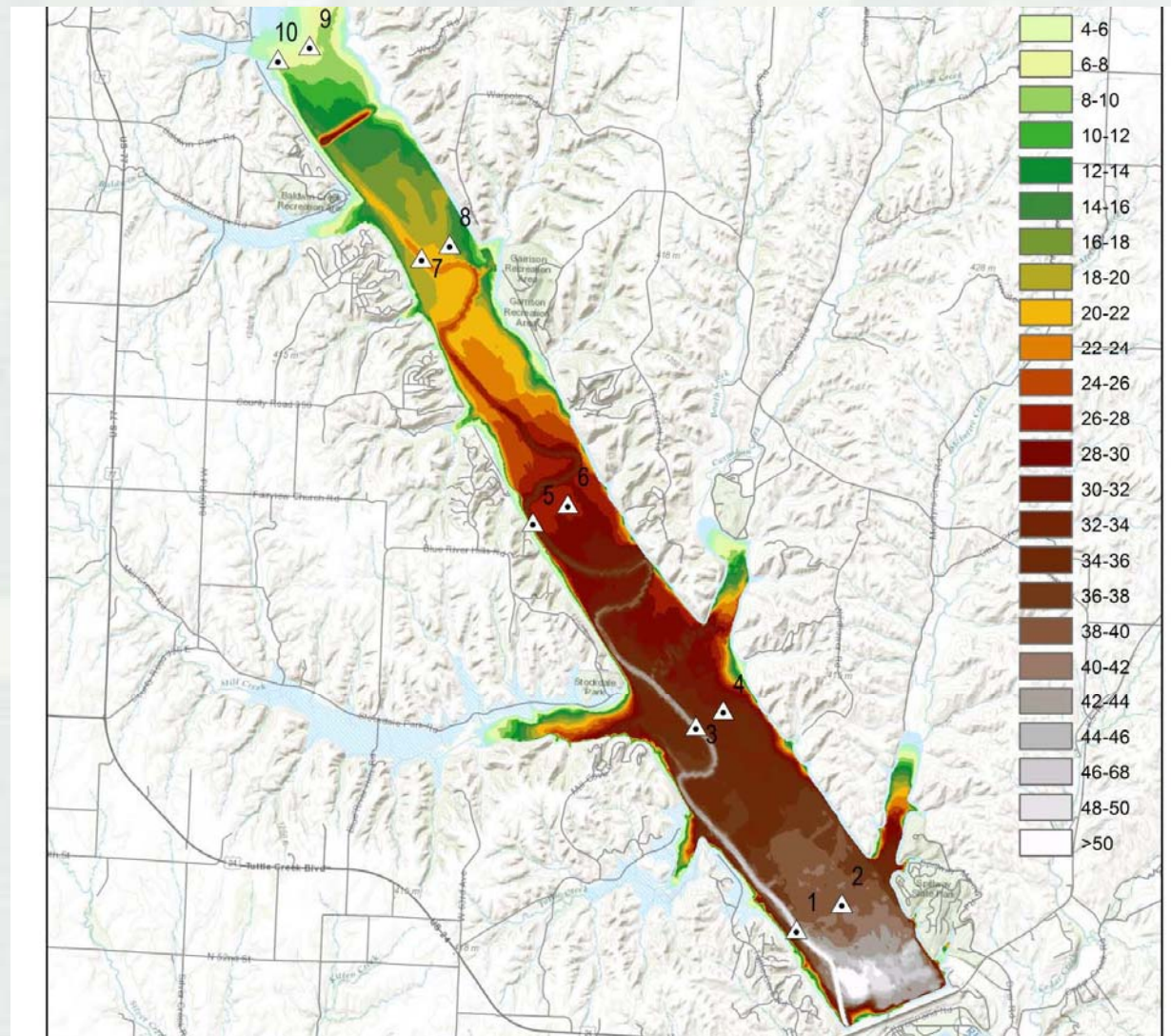
If you fill your cup with sand,
there's less room for the water



Reservoir sediment
management is important...
...but is it urgent?



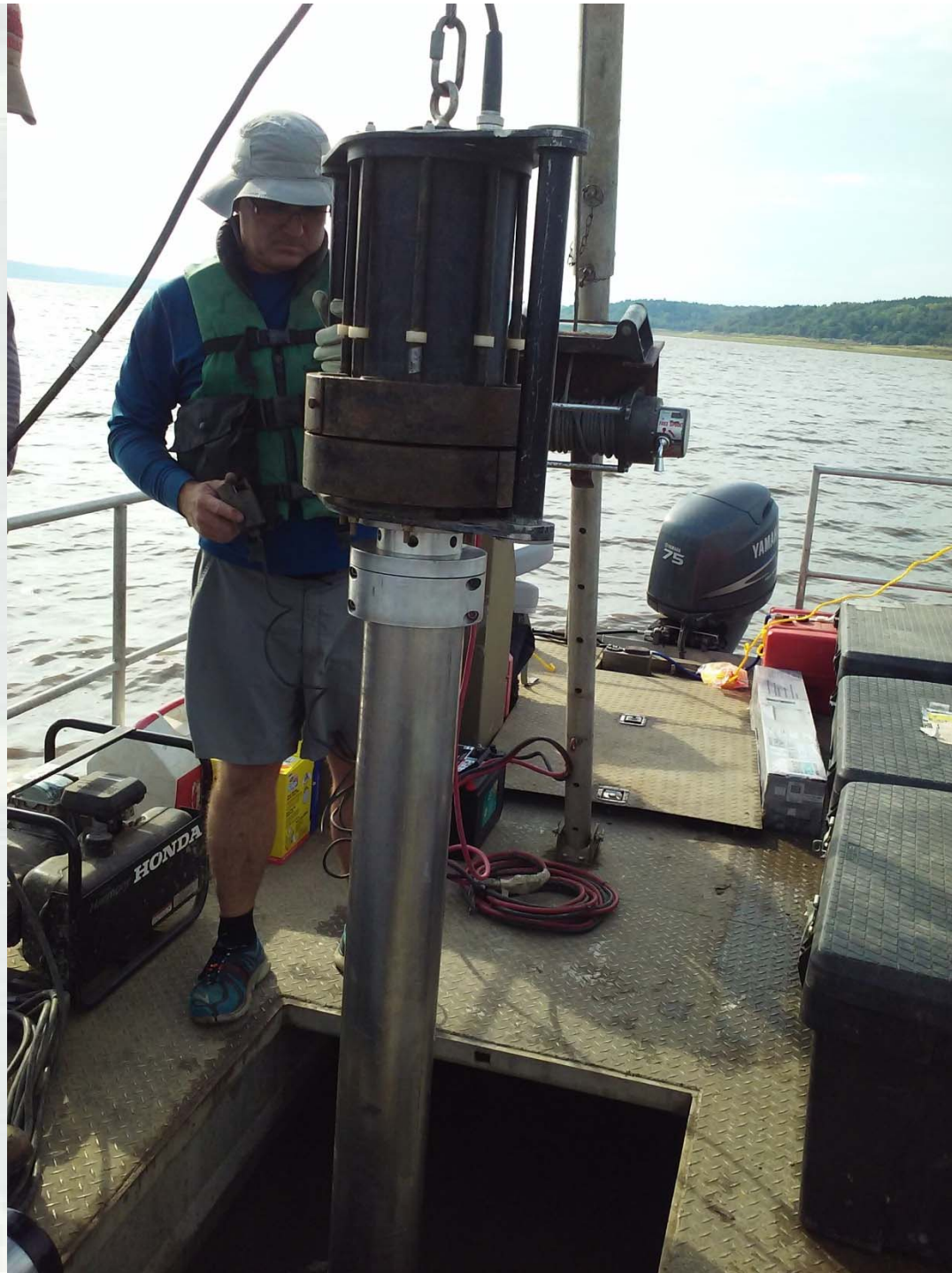
Effect of time on sediment erodibility of silts/clays



Erodibility testing in Tuttle Creek Lake

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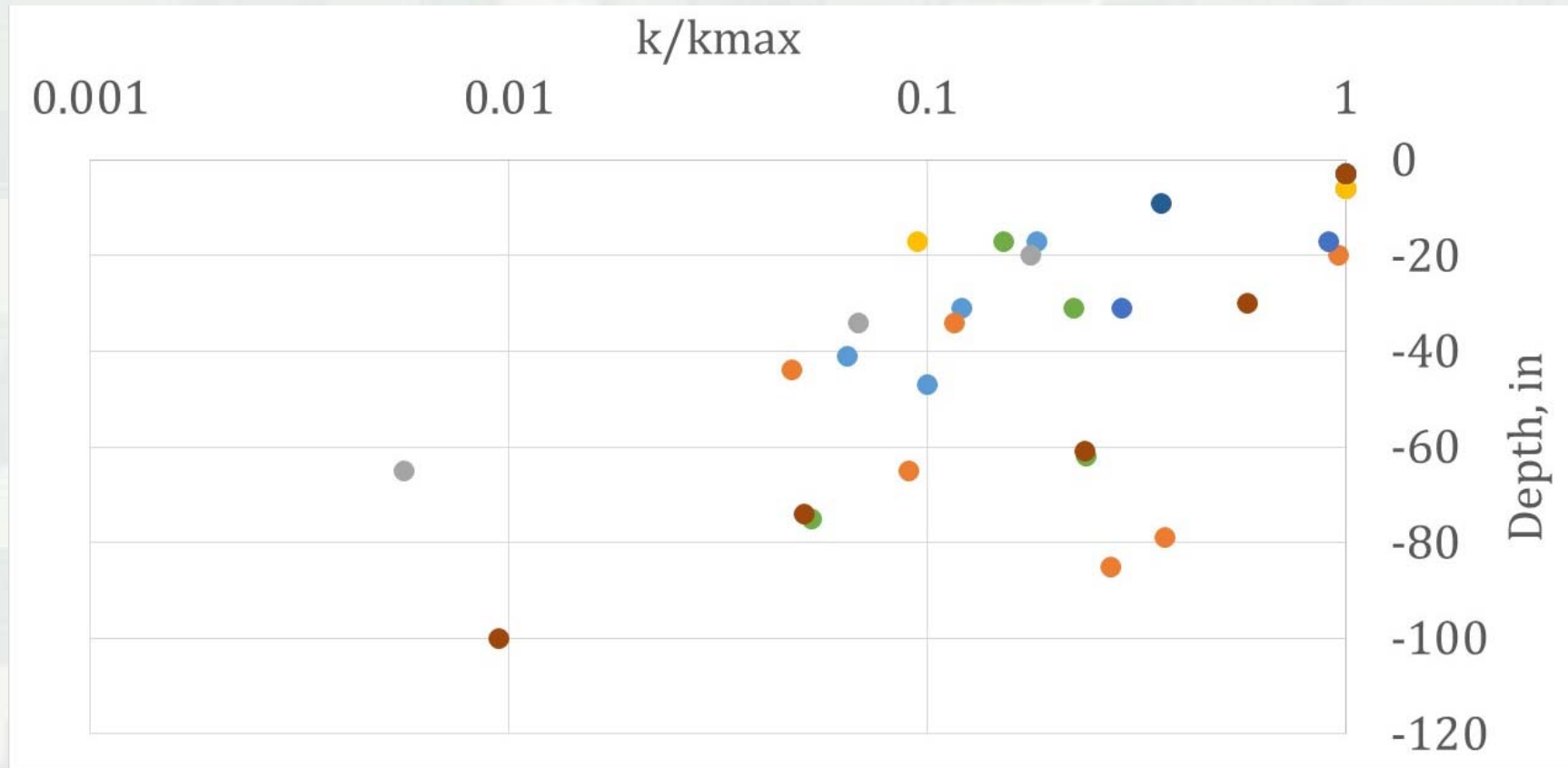




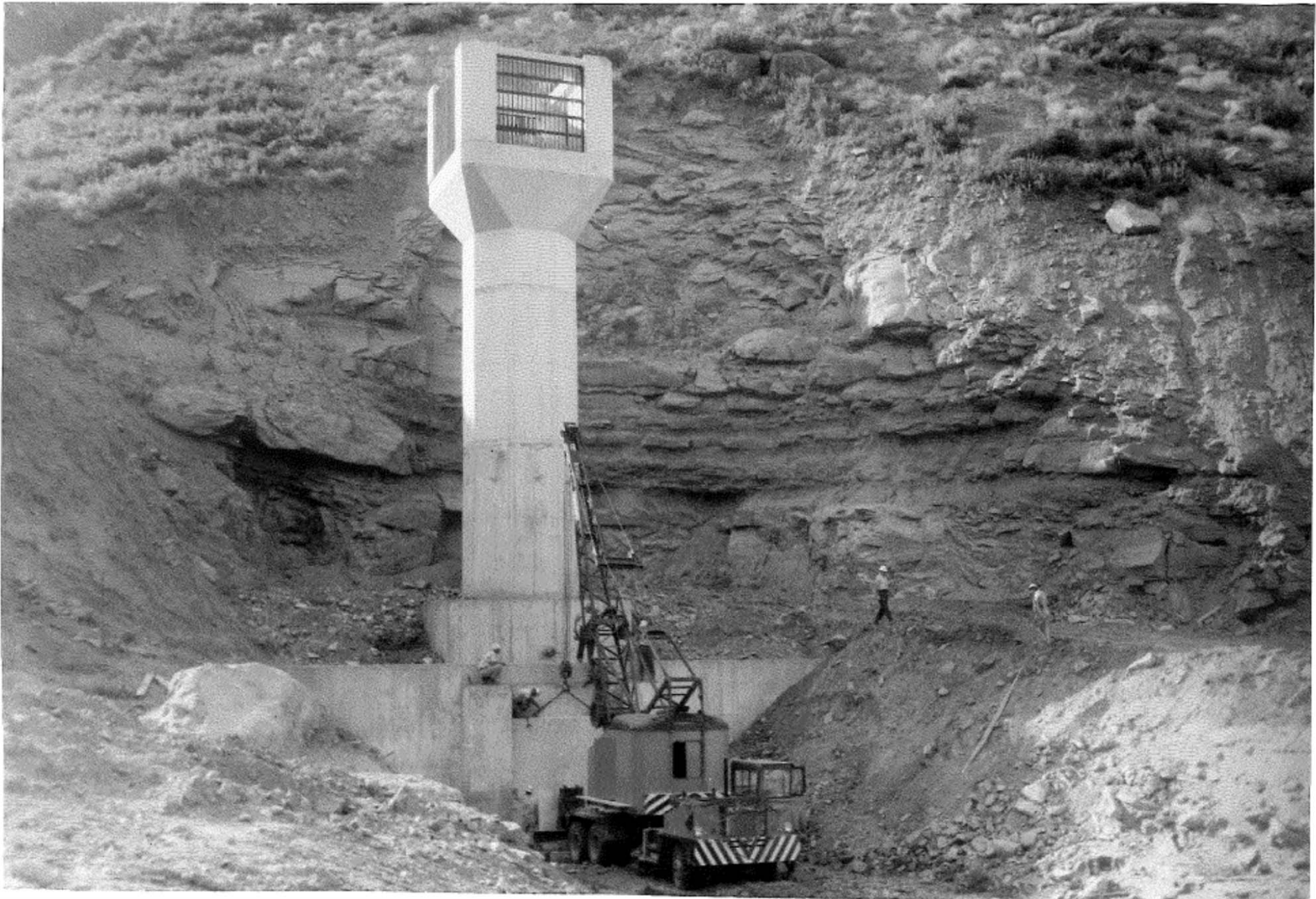
Laboratory Jet Erosion Tester at USDA-ARS



Variation in Erodibility vs. Depth



Deeper (older) deposits are up to 200 times less erodible
The longer we wait, the harder the sediment is to erode
Orders of magnitude easier (less expensive) to prevent or
remove fresh deposits than to recover storage later.



Paonia Reservoir, 1961



Paonia Reservoir, October 2014



Reservoir is 25% full of sediment

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Source: Collins and Kimbrel, 2015
<http://acwl.gov/sos/pubs/3rdJFIC/Contents/9C-Collins.pdf>





AGENDA

- Day 1- Foundation and Problems
 - ▶ Lab tour
- Day 2- Problems and Solutions
 - ▶ Hands-on demos
- Day 3- Environmental considerations and permitting
 - ▶ Site visit

