

Photo Courtesy Harry Shelley

Sedimentation Projections for USACE Reservoirs and Modeling Update

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Agenda Item 5

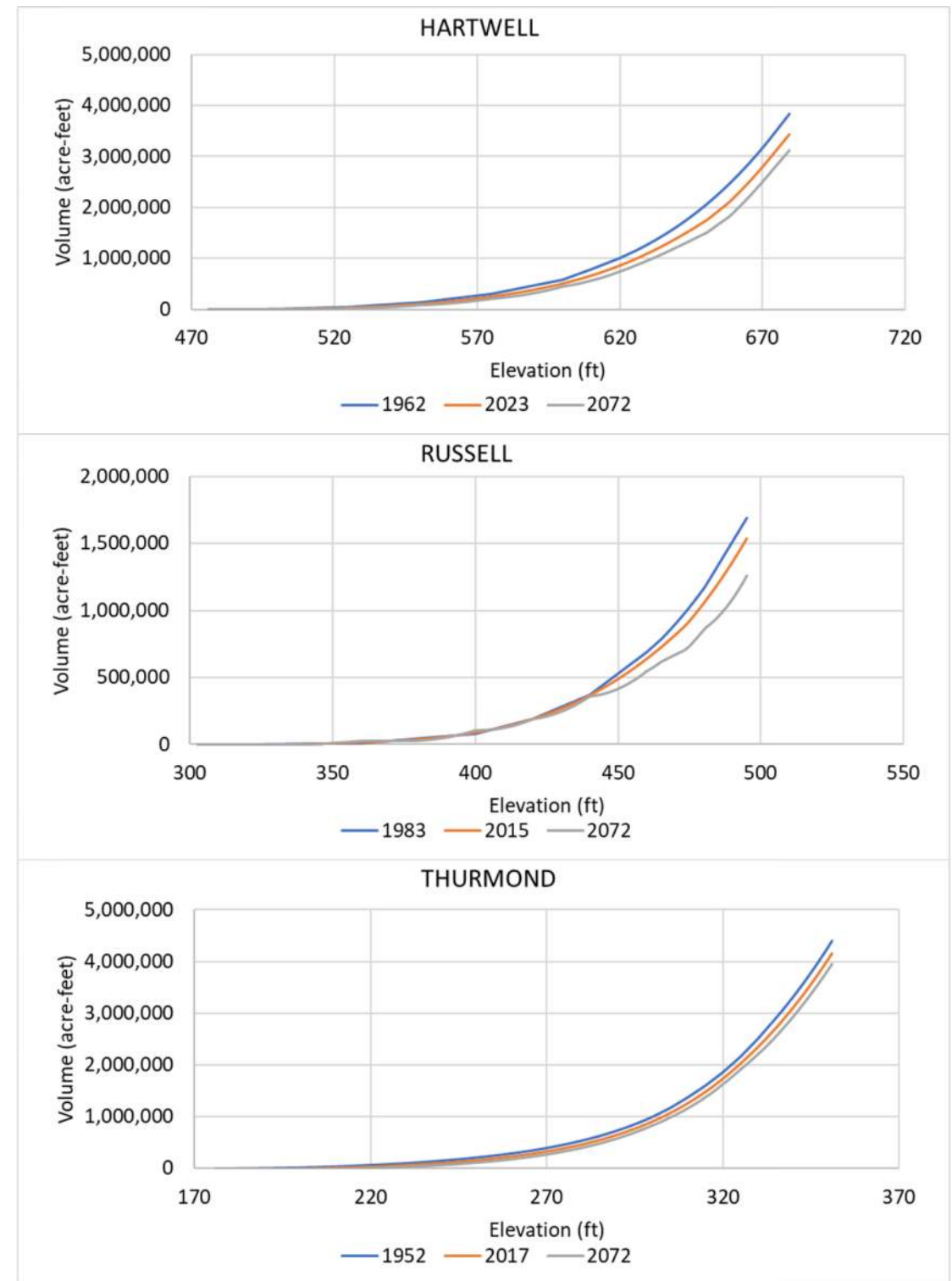
Future Sedimentation Projections for USACE Reservoirs

- Complete surveys of Lake Hartwell, Lake Russell, and Lake Thurmond conducted recently indicate the following storage losses¹ since initial construction:
 - **-14% in Lake Hartwell (approximately 1,900 MG/year since 1962)**
 - **-10% in Lake Russell (approximately 1,100 MG/year since 1983)**
 - **-7% in Lake Thurmond (approximately 900 MG/year since 1952)**
- There is uncertainty in the accuracy of the initial construction surveys. USACE plans to conduct another full bathymetric survey on each reservoir in the next 10 years using the same methodology as the recent surveys; this should provide better sedimentation rate estimations.

1. Storage losses shown are reported at the top of the conservation pool.

Future Sedimentation Projections for USACE Reservoirs

- For the purposes of the *Lake Hartwell Water Supply Study (2024)*, USACE developed stage-storage curve projections for the year 2072, assuming the same rate of sedimentation continues annually.



Future Sedimentation Projections for USACE Reservoirs

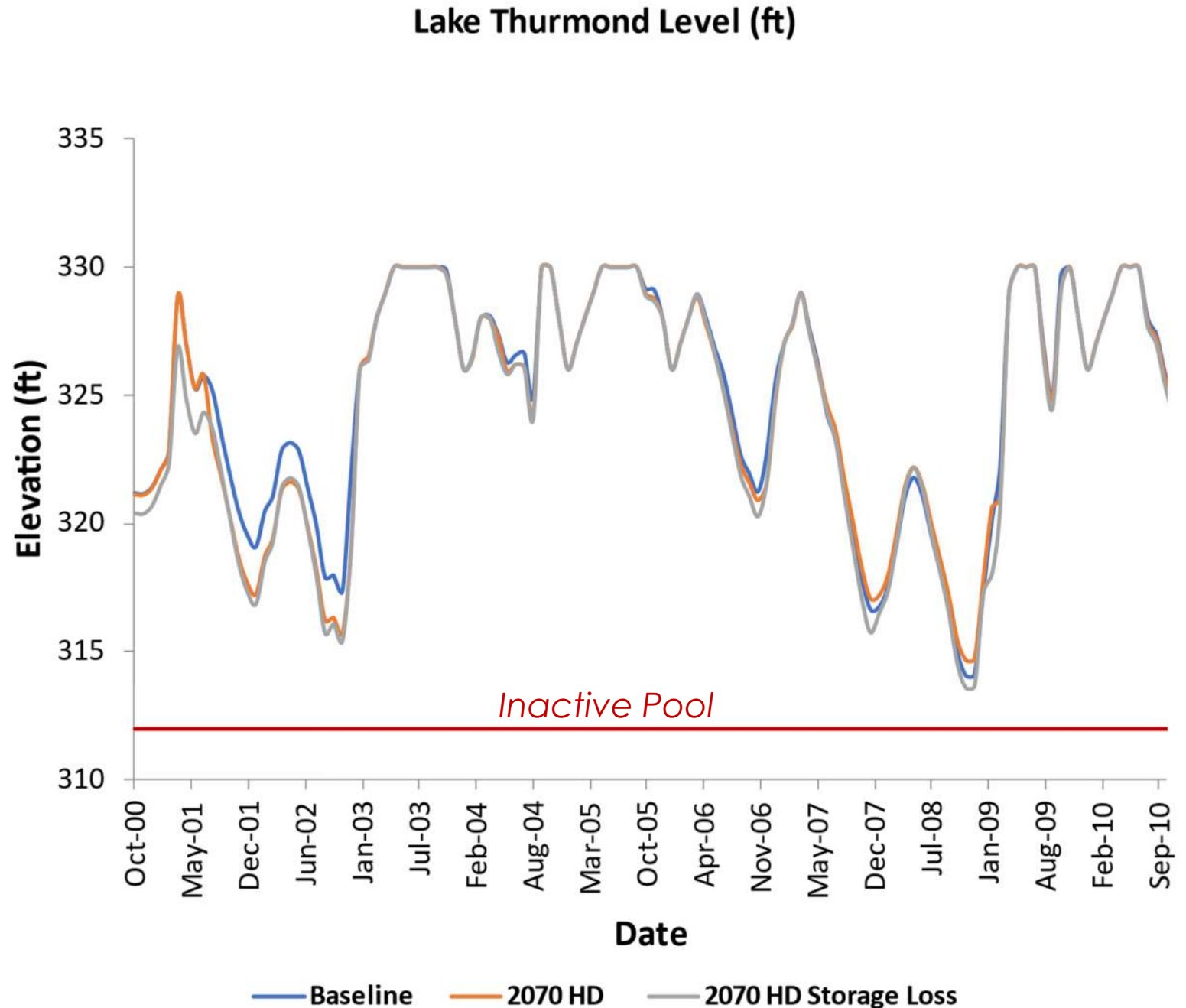
Approach to Modeling

- Used Savannah River SWAM model to assess the impact of continued sedimentation in these reservoirs over the approximately 50-year planning horizon.
- Reservoir characteristics and operating rules were updated to reflect the projected storage capacities and simulated with the demands from the **2070 High Demand Scenario**.
- Assumed storage loss through 2072 (since construction):
 - **-25% in Lake Hartwell**
 - **-28% in Lake Russell**
 - **-12% in Lake Thurmond**

Future Sedimentation Projections for USACE Reservoirs

Results

- Projected storage loss has a minor impact on water availability, and there continue to be no projected shortages on the Savannah River mainstem.



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Lake Thurmond Level (ft)
2002 Drought Period

