Deep Creek Lake Phase II Sediment Study: Progress Report

DCL Policy Review Board Meeting
July 23, 2012

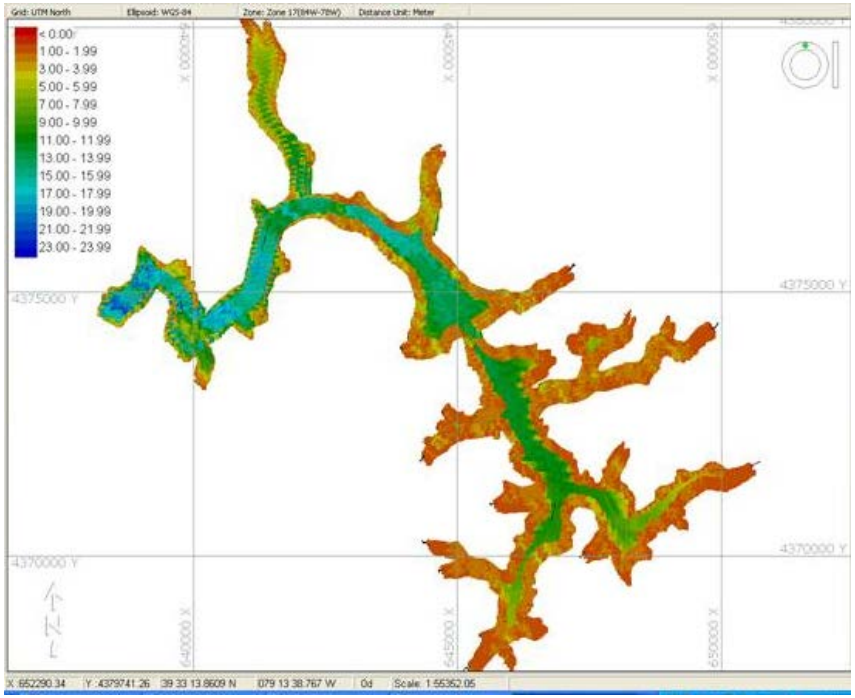
Completed Work

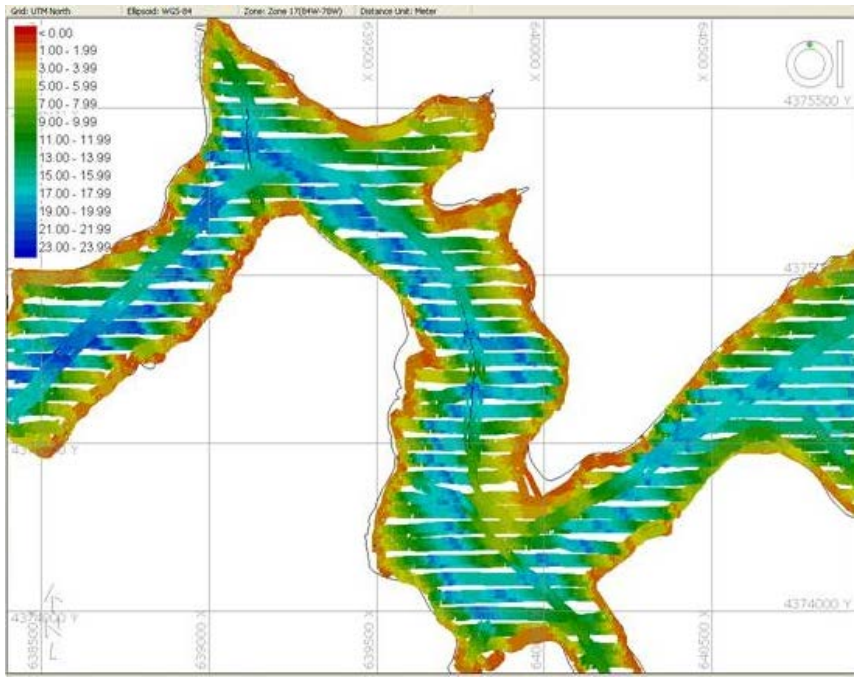
- April Field Work
  - Sub-Bottom Seismics collected at 50 meter transects throughout the lake; with the exception of 100 m transects collected in the large open areas.
  - Current Bathymetry collected along the same sub-bottom seismic lines
  - Complete sidescan sonar imagery collected of the Lake
  - Complete gps referenced shoreline video inventory

- May-July Office Data processing
  - QA/QC of all collected data
  - Processing all data for offsets, calibrations, and outlier removal.
  - Interpretation of data results (not complete)
  - Historical data gathering and processing.

Deep Creek Lake Sediment Summary

Sub-Bottom Seismic and Bathymetry Survey Coverage

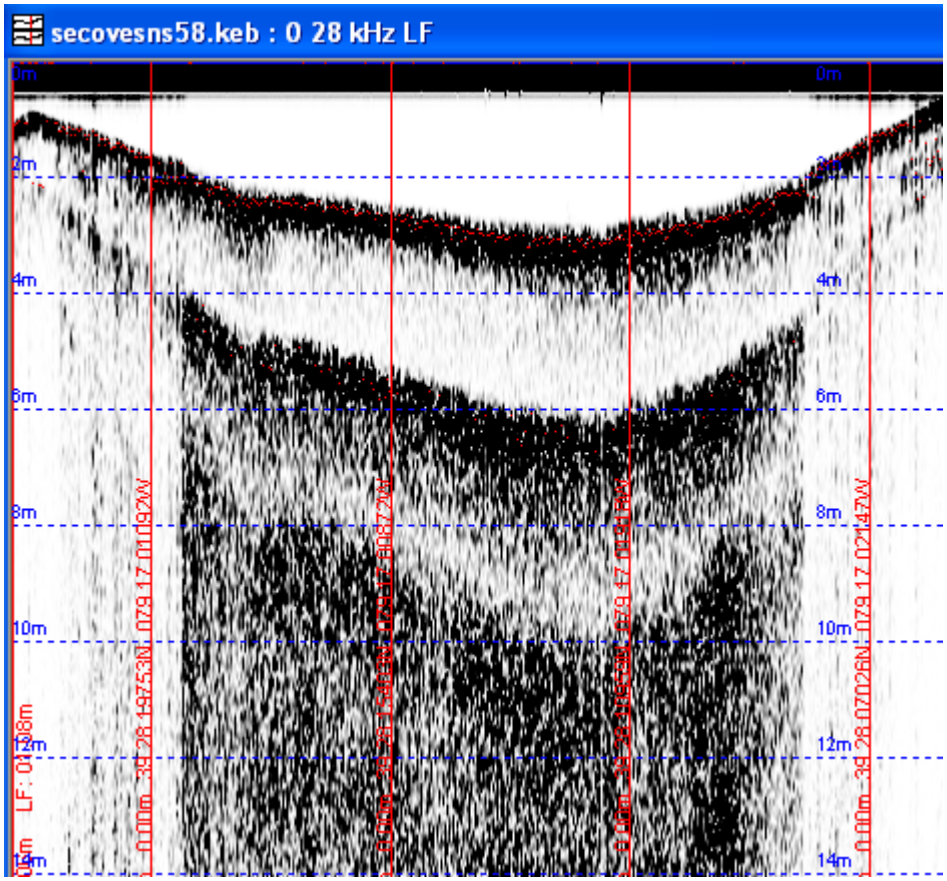




- **Transects were collected every 50 meters shoreline to shoreline**
- **Cross transects were run to validate data**
- **Shoreline runs were collected to obtain shallow water coverage and to tie in the shoreline areas between transects**

Deep Creek Lake Sediment Summary

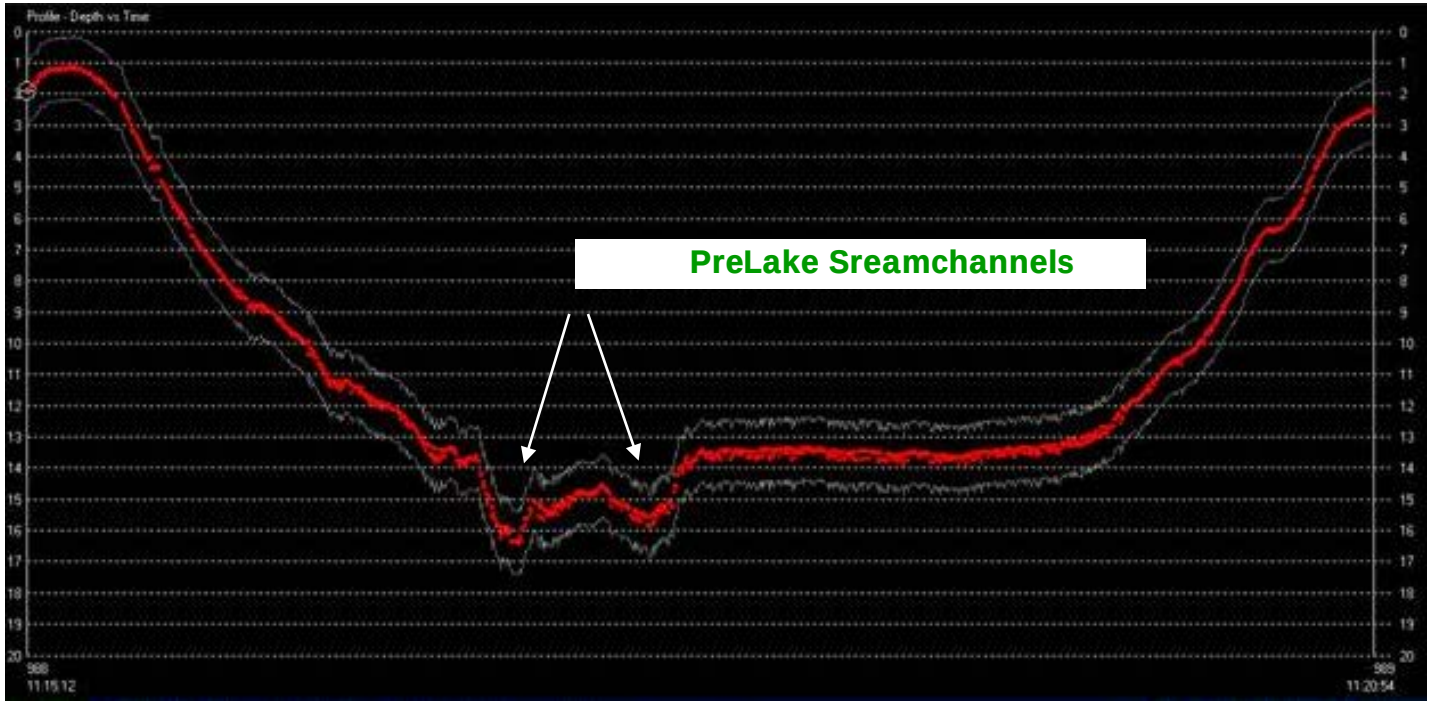
Sub-Bottom Analysis



- **Still processing the sub-bottom data. We are at approx. 45% completion**

Deep Creek Lake Sediment Summary

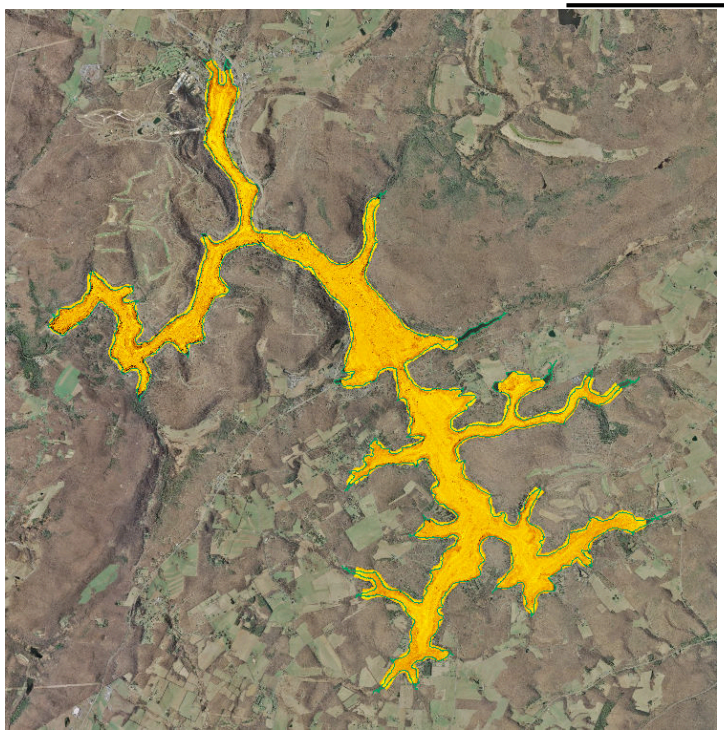
Bathymetry

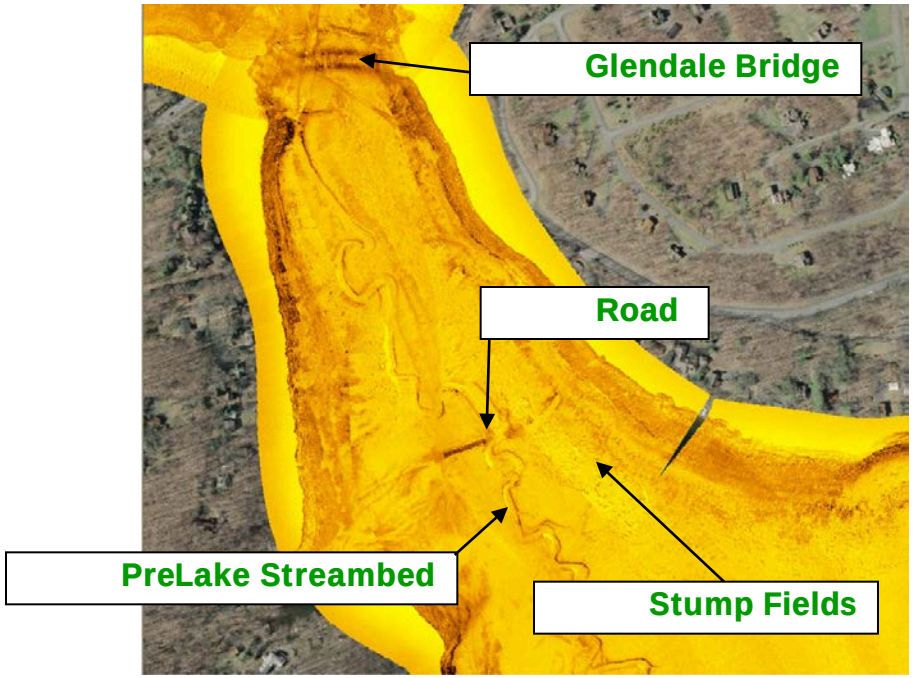


- Soundings were taken twice a second
- Soundings have been adjusted for speed of sound in water, transducer offset, and lake level changes.
- Over 600,000 data points remain after QA/QC.
- Data has been used to create a three dimensional model of the current lake bottom for comparison with historical data

Deep Creek Lake Sediment Summary

Sidescan Imagery

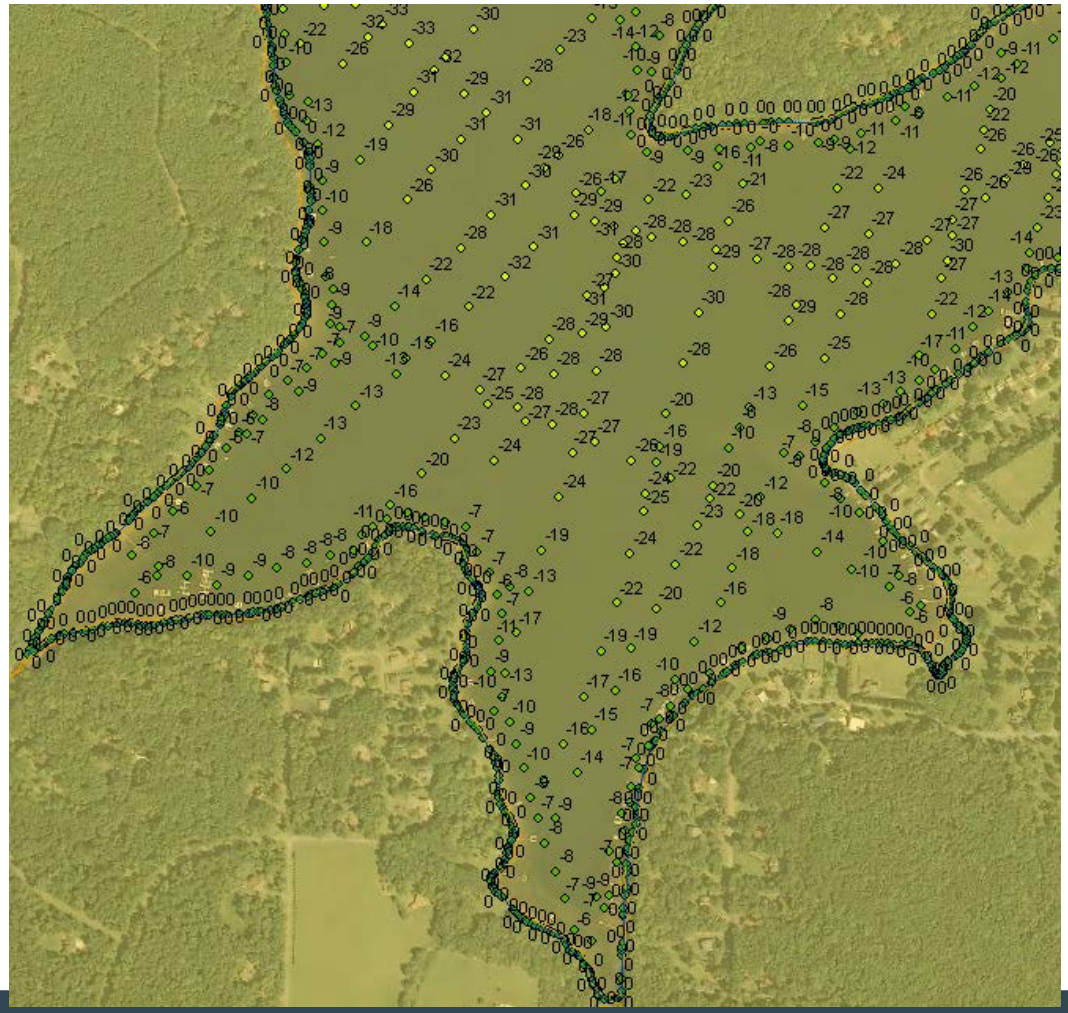




- 99.5% coverage of Lake was collected
- Original stream meanders/oxbows, stump fields, foundations, bridges, roads, etc. are visible.
- Acoustic sediment classification techniques used in the Chesapeake Bay are being utilized on this data to determine if different sediment types can be mapped.

Deep Creek Lake Sediment Summary

GIS/Historical Maps



- Historical Data has been georeferenced and digitized
- Data has been made into a three dimensional model for further comparison
- Historical Aerial photography of the lake and surrounding watershed has been incorporated into a GIS to observe changes (1938, 1946, 1952, and 1962)

Future Plan

- July-September
  - Continue processing data
  - Identify areas of sedimentation / no sedimentation using subbottom, sidescan, and bathymetry.
  - Identify locations for cores to validate sediment depth calculations from above
  - Continue to collect historical data
  - Begin development of sediment management practices publication (contracted)

Future Plan

- October
  - Collect sediment cores throughout lake in identified locations
  - Describe all cores and determine sediment depths
  - Conduct chemical/pollutant analysis on select cores with sedimentation
  - Begin Alternatives Analysis (contracted) for sediment remediation