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Martha's Vineyard Survey: Data collected by Bill Schwab and Bill Danforth - USGS

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Recommended Citation

Mayer, Larry A., "Martha's Vineyard Survey: Data collected by Bill Schwab and Bill Danforth - USGS" (2001). *Center for Coastal and Ocean Mapping*. 1149.
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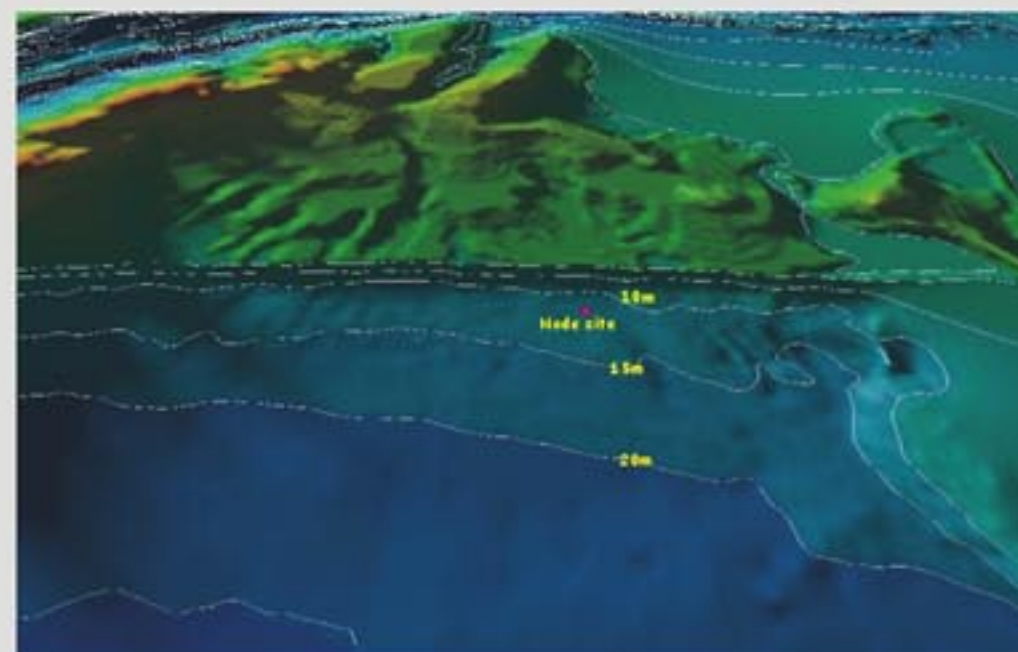
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MARTHA'S VINEYARD SURVEY

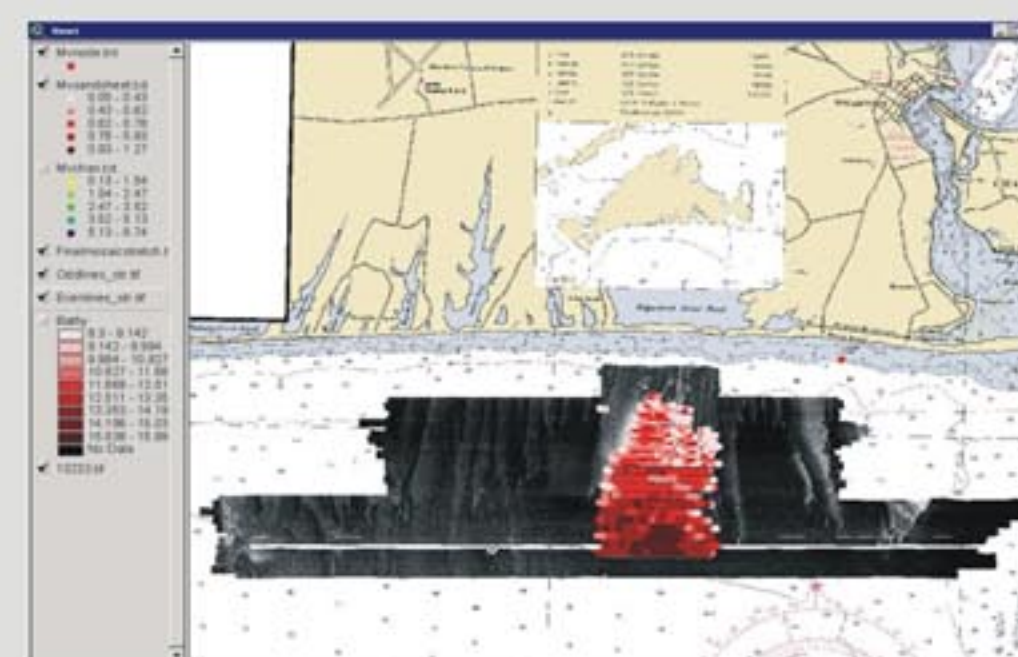
Data collected by Bill Schwab and Bill Danforth - USGS

The Martha's Vineyard field area has been the subject of several preliminary surveys conducted by USGS and WHOI scientists in support of establishing an observatory node (Feb. 2001) as well as in direct support of the ONR Mine Burial Program (Sept - Nov 2001). Data sets collected include:

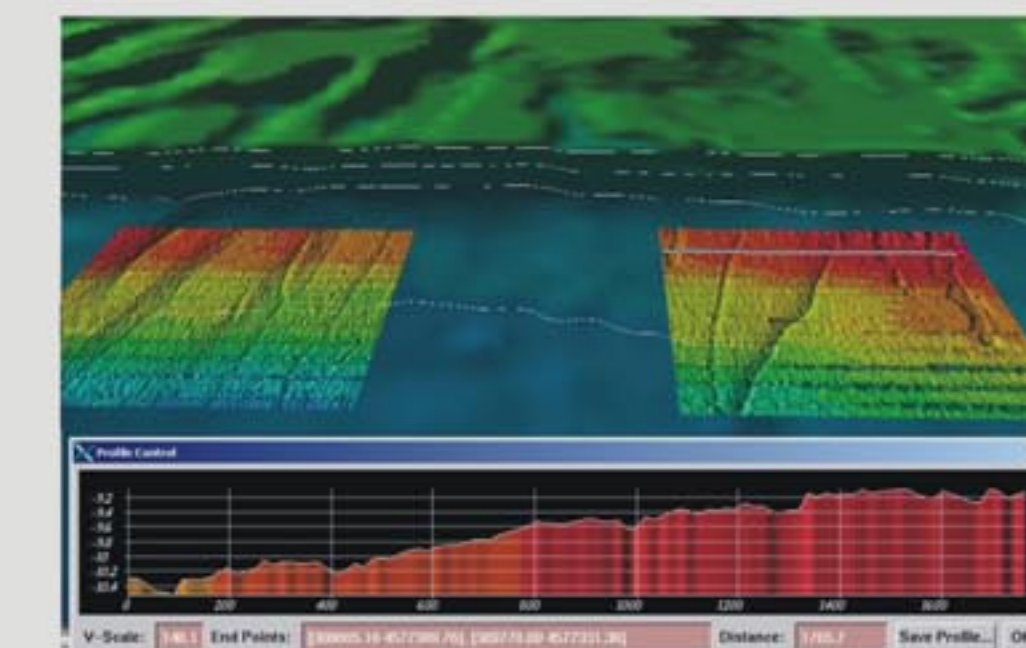
- Knudsen 3.5 chirp sonar -- Bill Schwab and Bill Danforth USGS
 - Geopulse Boomer -- Bill Schwab and Bill Danforth USGS
 - DF 1000 towed sidescan sonar (100 and 500 kHz) Feb and Sept/Nov - USGS
 - Submetrix interferometric bathymetry and backscatter (234 kHz) -- USGS
- Also rumored are: A WHOI core database
 Tripod data
 Edgetech Subscan data (Neal Driscoll, Wayne Spencer)
 EM and GPR data (Rob Evans)



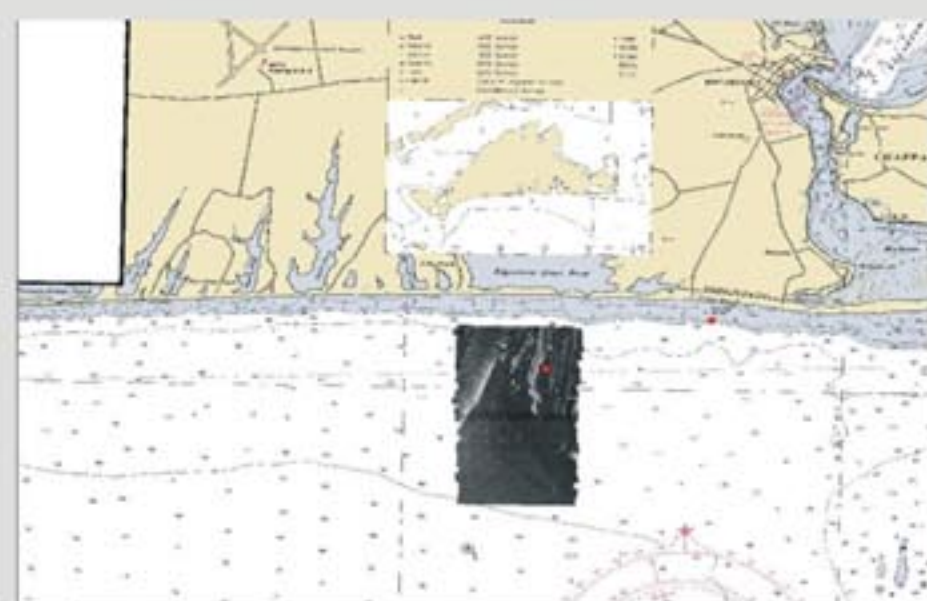
3-D perspective view of proposed site. Bathymetry is based on NOAA's Coastal Relief Model. Higher resolution Submetrix interferometric bathymetry is still being processed



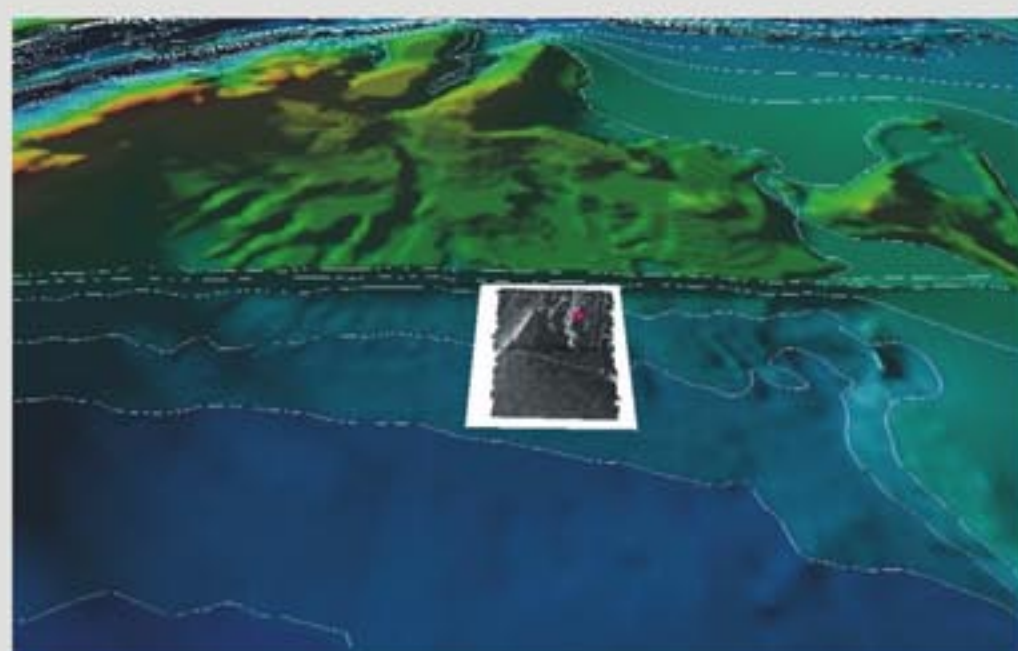
Interpretation (by Schwab and Danforth) of thickness of sand layer as revealed in Knudsen 3.5 chirp profiles (below). Thickness ranges from 0 to 1.3m



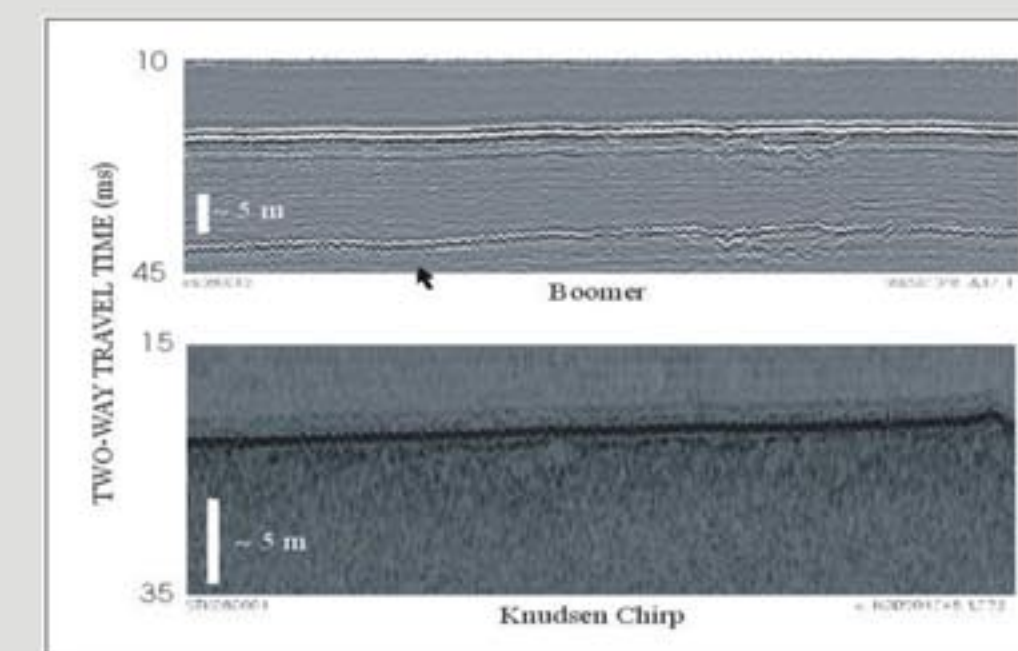
Initial processing of recently collected Submetrix interferometric bathymetry superimposed on NOAA Coastal Relief Model. Bathymetric cross-section is along blue line in eastern survey area. Eastern margin is node site.



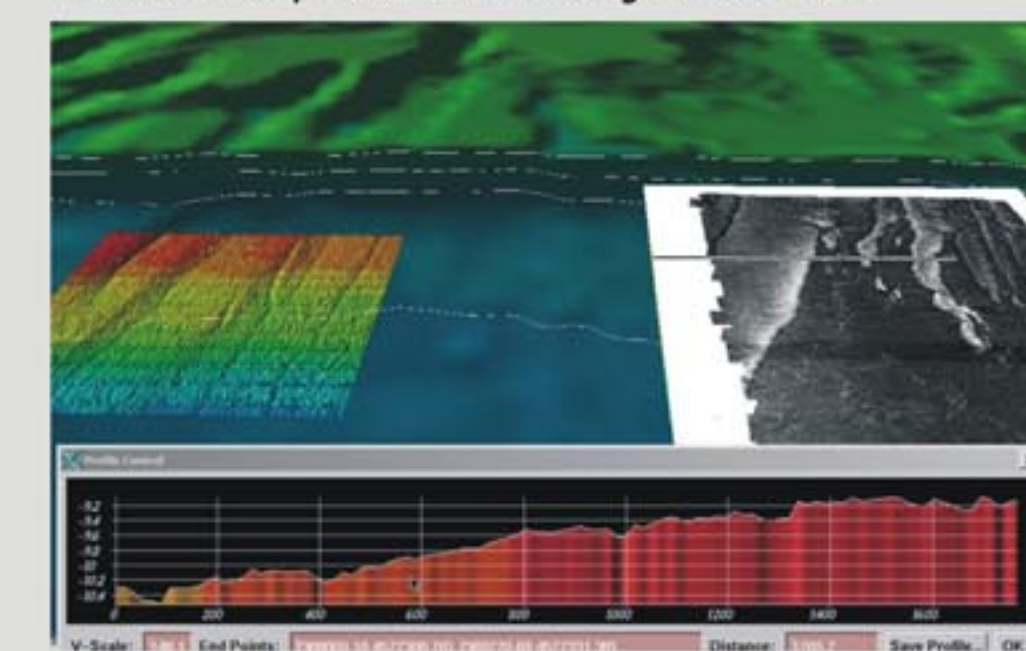
The proposed study area as depicted on NOAA chart with Feb 2001 100 kHz Df1000 sidescan survey superimposed. High backscatter is light -- note what appear to be several major sand bodies running perpendicular to shore



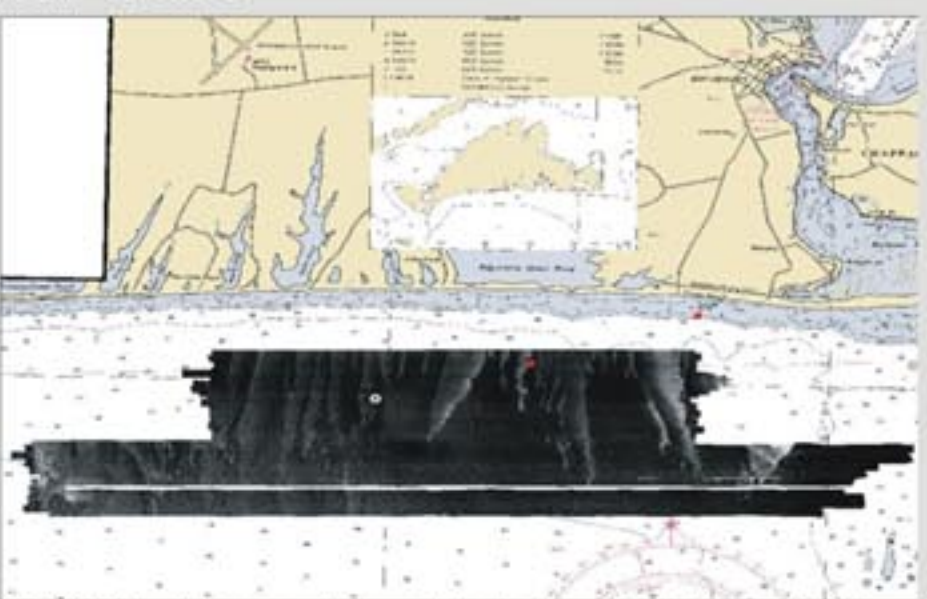
3-D perspective view of NOAA bathymetry with Feb Df1000 sidescan data superimposed



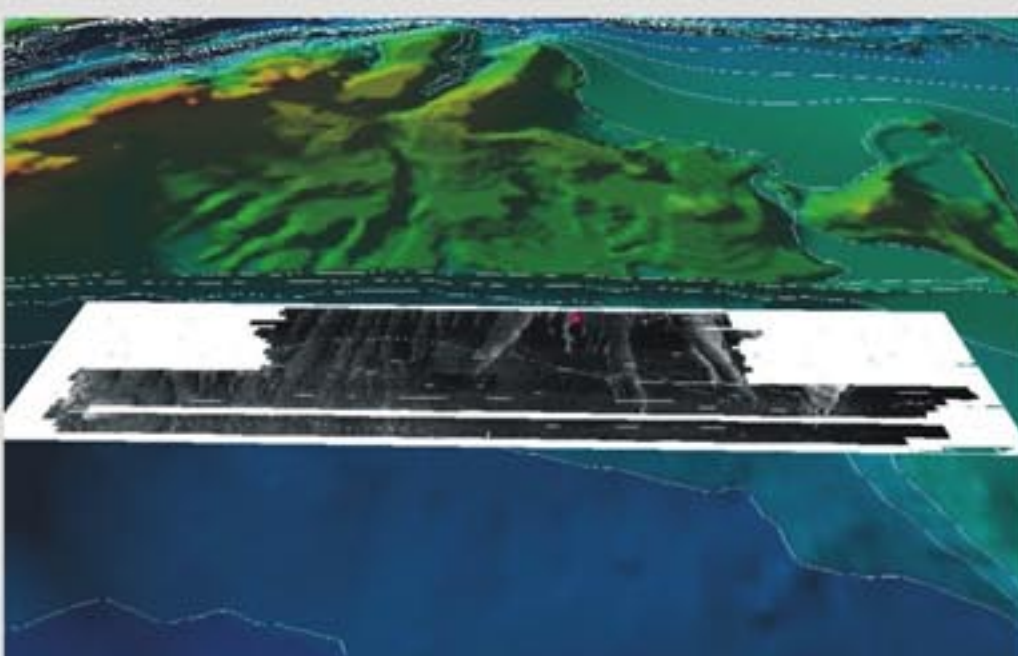
Examples of Geopulse boomer crossing of filled channel and Knudsen 3.5 kHz profiler imaging surficial sand layer.



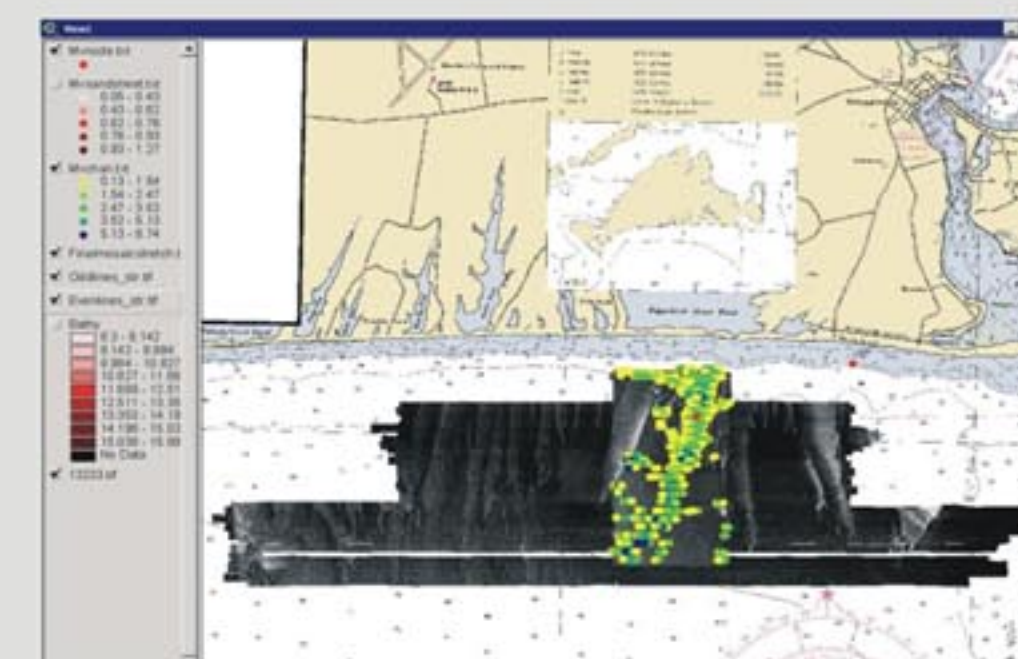
Feb Df1000 sidescan sonar data superimposed on Submetrix interferometric bathymetry. Bathymetric cross-section is along blue line in eastern survey area. Eastern margin is node site.



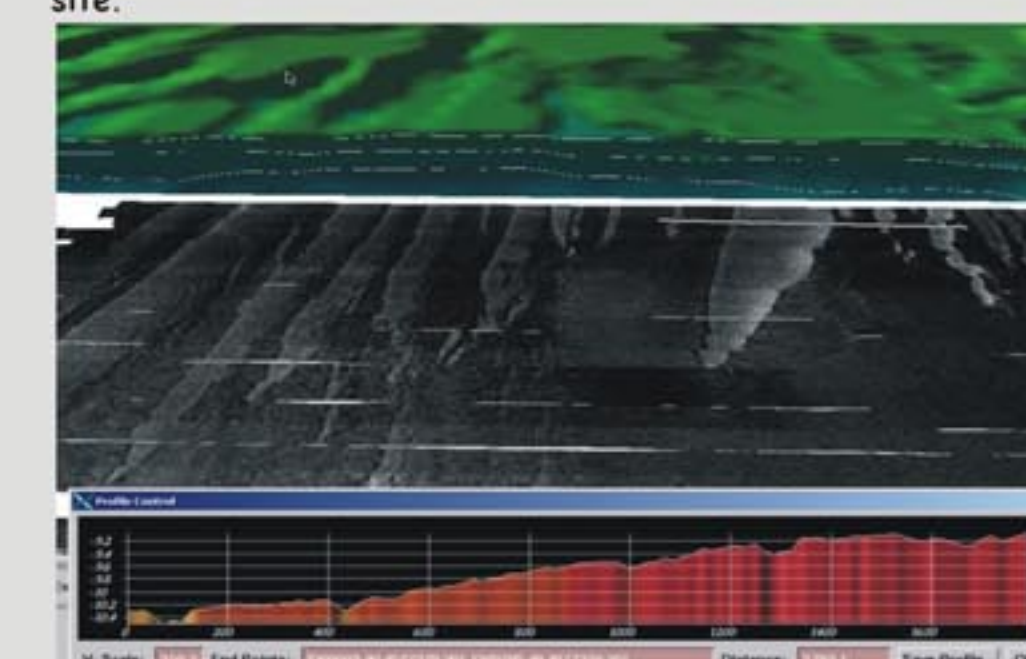
Df1000 100kHz sidescan data collected in Sept-Nov. 2001. High backscatter is light -- a number of shore parallel features are clear. Survey is 13 km wide (E-W) and about 3 km high (N-S).



3-D perspective view of NOAA bathymetry with Sept-Nov Df1000 sidescan data superimposed



Depth of filled channel imaged by Geopulse boomer. Interpretation by Bill Schwab and Bill Danforth, USGS



Sept-Nov Df1000 sidescan sonar data superimposed on Submetrix interferometric bathymetry. Bathymetric cross-section is along blue line in eastern survey area. Eastern margin is node site.

Feb Df1000 sidescan sonar data superimposed on Sept-Nov Df1000 sidescan sonar data. The large high-backscatter targets appear to have not changed!