

**Shallow Survey '08**  
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**Abstract:**

**Common Data Set Comparison: the GeoSwath Plus Interferometric Sonar Data vs  
Beamforming Multibeam Data.**

*Tom Hiller and James Baxter, GeoAcoustics Ltd.*

In July 2008 a 500kHz GeoSwath Plus mounted on the *R/V Coastal Surveyor* collected bathymetry and side scan data in the Shallow Survey 2008 common data set area. This presentation describes the survey results, including comments on the survey techniques and processing used.

The GeoSwath Plus is a Phase Differencing Bathymetric Sonar (PDBS, or interferometer), a type of sonar technology that has become increasingly popular over the last 5 years. One of the key reasons for the increase in popularity is the greater acceptance among academics and hydrographic authorities of the data processing methods required with this type of sonar technology. The processing involves outlier filtering then binning in a grid; this approach has been shown to provide accuracy and feature detection capabilities equivalent to Beamforming Multibeam systems. The proven accuracy is a critical requirement for sonar use in dredge monitoring, engineering surveys and navigational charting.

In this presentation the GeoSwath data set is compared with MBES data collected in the same area. The GeoSwath data processing is described in detail, illustrating how the dense data results in the ability to resolve small features with high accuracy, leading to substantially the same quality of data from either the MBES or PDBS approach. One feature of the GeoSwath is its ability to survey into the shallows while maintaining a wide swath, often collecting data up to the shoreline. This capability enables more efficient and safer surveying of shallow coastal waters as demonstrated in the western part of the survey area around Pulpit Rock.