

## Multibeam Bathymetric Processing Overview

Data collected using the ISS-2000 software are fully corrected for ship's motion, navigation, sound velocity, and predicted tides (if selected). Using the compatible SAIC SABER processing package (link to manual?), many of these corrections can be re-applied or changed, if desired. In practice at most four processing steps, which have been summarized in a document compiled by PIBHMC personnel (link to SABER How To), are needed for the majority of multibeam bathymetric data collected:

- Application of alternate sound velocity profiles to a limited number of multibeam swath files
- Application of corrected tides (if available and/or needed) to some or all multibeam swath files to replace the predicted tides applied in real time
- Swath editing of all multibeam swath files using the MVE editor (Figure Swath Edit)
- Editing of PFM (pure file magic) grids using the PFM editor (Figure PFM Edit)

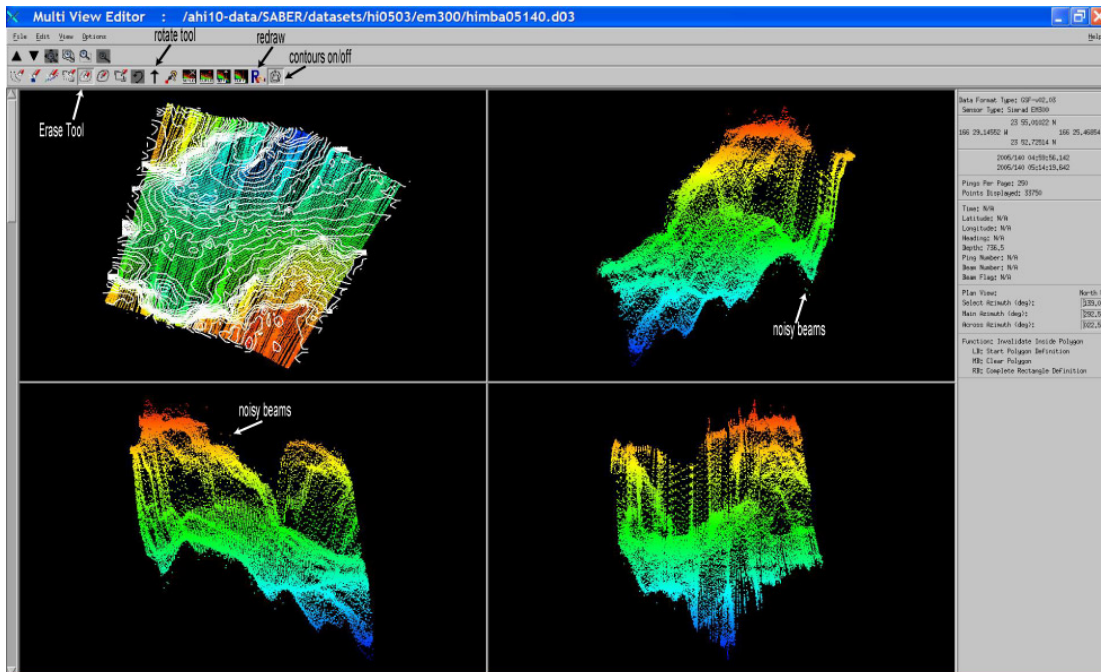
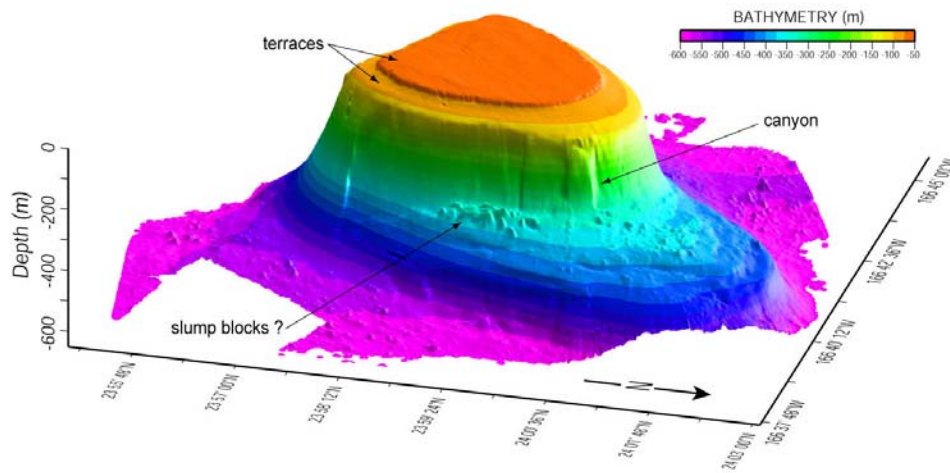


Figure Swath Edit: Individual multibeam swath files are edited with the MVE editor. All changes done with this editor are made to the Generic Sensor Format (GSF) multibeam data files by resetting flags, rather than removing or changing the original data.





3D Perspective view of Brooks Bank, NWHI looking from 045 degrees. VE = 2x.

Figure MBSsystem and GMT Output. Data processed with SABER were manipulated using MBSsystem and GMT to produce this figure.

- Fledermaus: a commercial product of Interactive Visualization Systems (IVS) (link to <http://www.ivs3d.com/>) for scientific 3-D visualization and analysis of multibeam bathymetry and other standard data formats for high density and resolution data. Figure Fledermaus\_Output

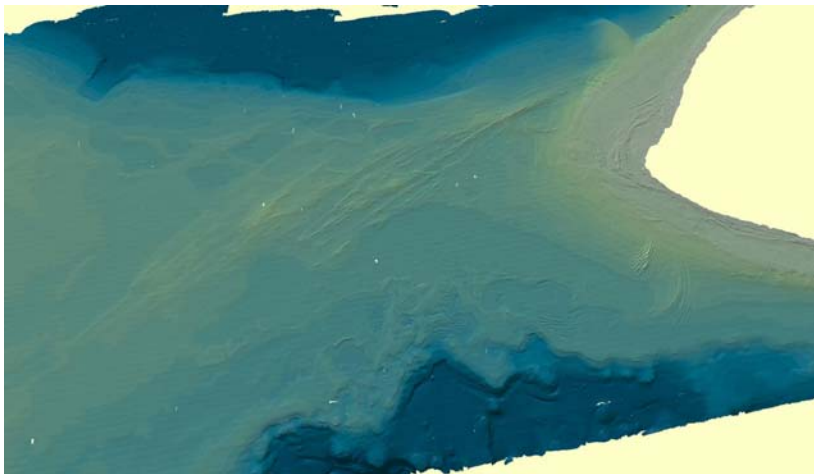


Figure Fledermaus\_Output. Fledermaus allows very high resolution 3-D displays of complex surfaces, such as the top of the eastern half of Penguin Bank in the MHI.

- ArcMap: Geographic Information System (GIS) from ESRI Incorporated. ArcMap provides the ability to layer a variety of different outputs for display and analysis.