Frequently Asked Questions

What is the horizontal datum of the model?

Horizontal datum is WGS 84 geographic. All source elevation data used in building ETOPO1 were transformed to WGS 84 geographic prior to ETOPO1 development.

What is the vertical datum of the model?

Vertical datum is a generic "sea level." Source elevation data were not converted to a common vertical datum due to the large cell size of ETOPO1 (1 arc-minute; ~2 km). This means the vertical uncertainty of ETOPO1 elevations (greater than 10 meters) exceeds the differences between vertical datums near sea level (usually less than a meter). Except for the Caspian sea bathymetric data, all source data retained their original vertical datum prior to ETOPO1 development.

What are the vertical units of ETOPO1?

Elevations are measured in meters.

Are there any restrictions on using this model?

Only two: ETOPO1 cannot be used for navigation, and products derived primarily from NCEI data are not subject to copyright protection in the United States (see [copyright](#)). We do ask that you acknowledge NCEI as the source.

Do I need permission to use ETOPO1 or its color images?

It is not necessary to obtain written permission to use ETOPO1 or other NOAA products that are in the public domain, nor are there any fees for using them. We ask only that you cite NCEI as the source.

What is the difference between various global datasets? Which one should I use?

Most, if not all, current global bathymetric models use bathymetry estimated from satellite altimetry for unsurveyed ocean areas. Model cell size and completion date vary slightly, though restrictions on model use can vary significantly. Choose the one that best fits your intended use.

What happened to ETOPO2v2 and ETOPO5?

Both of these older models have been deprecated.

What should I do if GDAL has difficulties reading the netCDF files?

Older versions of GDAL improperly invert the ETOPO1 netCDF files (south pole at top). Please use the latest version of GDAL, which has resolved this issue.

Where can I find the color palette used to create the ETOPO1 color images?

The color palette used by NCEI can be found at cpt-city.