National Geophysical Data Center

m
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
-1000
-2000
-3000
-4000
-5000
-6000
-7000
-8000
-9000
-10000
-11000

The topographic color scale does not apply to the Antarctic and Greenland ice sheets, which are shaded white.

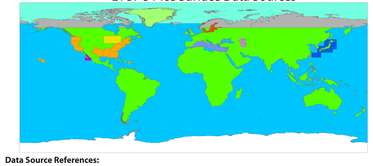
Robinson Projection

Kilometers (at equator)
0 1,500 3,000 6,000 9,000

Polar Stereographic Projection

Polar Stereographic Projection

ETOPO1 Ice Surface Data Sources



**Data Source References:**

| | |
|---|---|
| U.S. Coastal Relief Model | http://www.ngdc.noaa.gov/mgg/coastal/coastal.html |
| Great Lakes Bathymetry | http://www.ngdc.noaa.gov/mgg/greatlakes/greatlakes.html |
| Antarctica RAMP Topography | http://nsidc.org/data/nsidc-0082.html |
| Mediterranean Sea Bathymetry | http://www.ifremer.fr/drogm_uk/Realisation/carto/Mediterranee/index.html |
| Caspian Sea Bathymetry | http://www.caspianenvironment.org/dim/menu5.htm |
| SRTM30 Topography | http://www2.jpl.nasa.gov/srtm/ |
| Gulf of California Bathymetry | http://www.ngdc.noaa.gov/mgg/bathymetry/multibeam.html |
| JODC Bathymetry | http://www.jodc.go.jp/data_set/jodc/jegg_intro.html |
| IBCAO Topography | http://www.ibcao.org |
| Globe Topography | http://www.ngdc.noaa.gov/mgg/topo/globe.html |
| Baltic Sea Bathymetry | http://www.iowarnemuende.de/research/en_iowtopo.html |
| IBCAO Bathymetry | http://www.ibcao.org |
| GEBCO/Est. Seafloor Bathymetry | http://topex.ucsd.edu/marine_topo/ |

# ETOPO1 Ice Surface Global Relief Model

Pamela R. Grothe, Cooperative Institute for Research in Environmental Science (CIRES), University of Colorado at Boulder, 2009

ETOPO1 is a 1 arc-minute global relief model of Earth's surface that integrates land topography and ocean bathymetry. It was built from numerous global and regional data sets, and is available in "Ice Surface" (top of Antarctic and Greenland ice sheets) and "Bedrock" (base of the ice sheets) versions. All data sets were converted to WGS 84 geographic coordinates before building ETOPO1. ETOPO1 was designed to support tsunami forecasting, modeling and warning, as well as ocean circulation modeling and Earth visualization.

A color, shaded-relief image of Earth from ETOPO1 Ice Surface, is displayed above. The image was created with Generic Mapping Tools (GMT; http://gmt.soest.hawaii.edu/) using three color palettes: blues for ocean depths and above sea-level lakes; greens and browns for dry land areas; and shades of white for the Antarctic and Greenland ice sheets, and other glaciers greater than 100 km$^2$ using the GLIMS Glacier Database at the National Snow and Ice Data Center (NSIDC) (http://nsidc.org/data/nsidc-0272.html).

**Web Access:**

*ETOPO1* - http://www.ngdc.noaa.gov/mgg/global/global.html

*Poster* - ftp://ftp.ngdc.noaa.gov/mgg/global/relief/ETOPO1/posters/etopo1_wallmap_at.pdf
ftp://ftp.ngdc.noaa.gov/mgg/global/relief/ETOPO1/posters/etopo1_wallmap_pac.pdf

**Citation:**

*ETOPO1 Global Relief Model*
Amante, C. and B. W. Eakins, ETOPO1 1 Arc-Minute Global Relief Model: Procedures, Data Sources and Analysis, NOAA Technical Memorandum NESDIS NGDC-24, March 2009

*ETOPO1 Image*
Varner J. and E. Lim, CIRES, University of Colorado at Boulder, 2008

*ETOPO1 Poster*
Grothe, P. R., CIRES, University of Colorado at Boulder, 2009