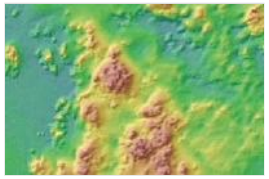
Benthic Terrain Modeler



Benthic Terrain Modeler, tools for understanding and classifying the benthic environment.

Desktop Application Template by swalbridge

Created: Nov 14, 2012 Updated: Mar 21, 2018 Number of Downloads: 9,650

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Details

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Owner

swalbridge

Tags

ocean, oceanography, bathymetry, benthic terrain, terrain analysis, python, corals, geomorphometry, btm, benthic terrain modeler, ArcGIS for Desktop, Python, Code Sample

Credits (Attribution)

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URL

View

http://www.arcgis.com/home/None

Description

Benthic Terrain Modeler (BTM) 3.0

November 2, 2016

Requirements: ArcGIS 10.1+

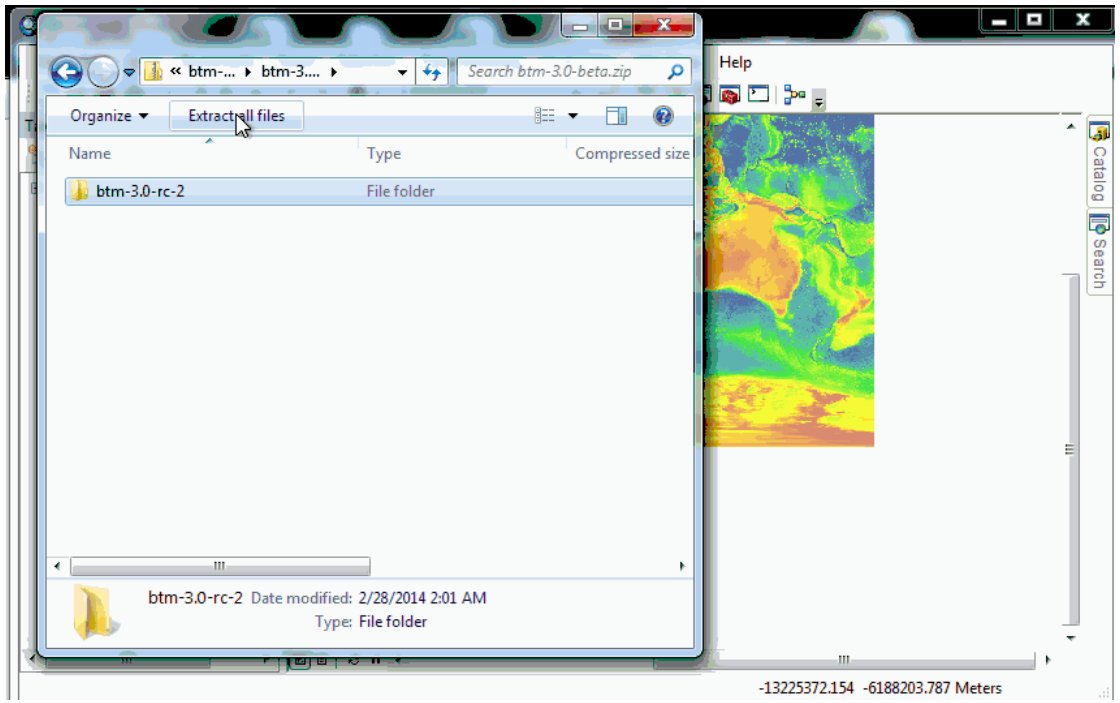
Updates to this release: Thanks to the extensive work by our summer intern, Noah Slocum, significant improvements have been made to BTM. New tools include:
- Compare Scales of Analysis
- Slope-corrected Surface Area to Planar Area
- Arc Chord Ratio based on the work of DuPreez (2014)
- New depth statistics such as kurtosis and interquartile range

The architecture has been revamped to support Python 3, BTM is now usable in ArcGIS Pro (as a toolbox). We also have implemented block based processing for large raster calculations using the NumPy and SciPy scientific libraries.

Updates to RC6: Excel classification dictionaries, new Surface Area to Planar Area roughness tool, new Statistical Aspect tool, classification is more robust and results exactly match the original software.

Welcome to version 3.0 of the Benthic Terrain Modeler (BTM) for ArcGIS for Desktop, a collection of tools that ocean and coastal scientists and resource managers can use in concert with bathymetric data to classify and understand the benthic environment. BTM was initially developed as a desktop extension for ArcGIS versions 8.x through 9.2SP3. This updated release of BTM for ArcGIS 10.1+ is comprised of a series of ArcPy scripts combined in a custom toolbox that allows the user to run the individual processes as separate functions. The BTM toolbox contains a set of tools that allow users to create grids of bathymetric position index (BPI), standardized BPI's, slope, and terrain ruggedness from an input bathymetric data set. Additionally, two terrain classification tools give users the freedom to create their own zone and structure classifications and define the relationships that characterize them.
New users of BTM will want to take advantage of the simple graphical user interface that wraps around all BTM tools, recreating the full "wizard" experience that was available in the previous releases. To install BTM with this feature:
- Please ensure that you have ArcGIS 10.1+ installed on your computer. For ArcGIS 10.0, use this experimental release, and for ArcGIS 8/9, use the 1.0 release.
- Unzip the BTM 3.0 zip file to the desired workspace on your computer's C: drive
- Close any existing ArcMap sessions.

- Double-click the btm.esriaddin file in your workspace, which will install both the graphical user interface and the toolbox into ArcGIS.
- In addition to the user interface, you can also add the tools to ArcToolbox. Open the ArcToolbox window and pin it to the display. Right-click on the ArcToolbox top folder in the window and select Add Toolbox. Navigate to where you unzipped BTM and add the file btm.pyt.
- Expand the BTM toolset in ArcToolbox to see that it consists of 7 Python scripts. Note that the Spatial Analyst extension is required in order to run the BTM tools.
- To view important documentation on each script right-click on that script in the BTM toolset and select Item Description as well as Properties.
- Click on the Add Data button in ArcMap and proceed to add your bathymetry data to your ArcMap session. You may now run the BTM tools on your data.



A full tutorial with sample data is included with this zip file within the 'tutorial' directory. This self-paced training module introduces the benthic terrain modeling concepts used in the BTM, and steps users through sample analyses. **Please note**: the tutorial, which includes sample data applies only to the individual ArcPy scripts located in the BTM Toolbox and not to the BTM Add-In.
BTM was initially a partnership between the NOAA Coastal Services Center and the Davey Jones' Locker Seafloor Mapping/Marine GIS Lab Oregon State University. The current version of BTM is a collaboration between NOAA CSC and ESRI, with thanks also to the the Massachusetts Office of Coastal Zone Management, Cal State University Monterey Bay, the UC-Santa Cruz Institute of Marine Sciences & NOAA Fisheries Ecology Division.

Source and Issues

BTM is on GitHub! Get the latest code, send us pull requests, and see our current issues at http://github.com/EsriOceans/btm.

Citing BTM