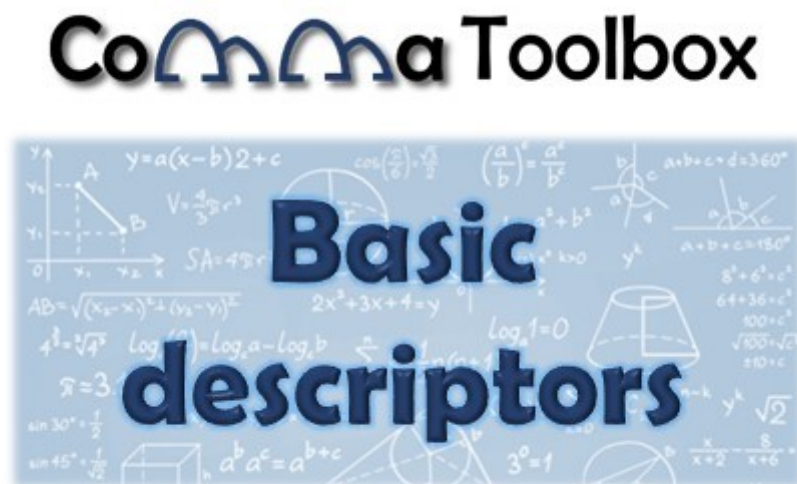# Basic descriptors

Title   Basic descriptors

Description

Calculates a series of geometrical and statistical attributes for each delineated feature contained in the input shapefile.

Illustration

Usage

The "Basic Descriptor tool" calculates a series of geomorphometric parameters for each polygon feature, ranging from shape metrics to zonal statistics of slope, depth and BPI. Optionally, this tool allows the user to also compare the delineation with landform elements calculated by geomorphons, measuring the percentage area of each land surface unit, and counting the number of peaks (if positive morphologies) or pits (if negative morphologies) contained within each polygon feature. These measurements can give a useful indication of the complexity of the mapped landforms.

This tool can be used to describe any confined morphological features, regardless of the approach adopted to delineate them. Even manually mapped features can be characterised using this tool.

Syntax

Basic_descriptor_ (inputDEM, in_features, workspace, outFeat, in_fill_direc, {inputGeo}, {delTemp})

Parameter	Explanation	Data Type
inputDEM	**Dialog Reference** The DEM that will be used as input. There is no python reference for this parameter.	Raster Layer
in_features	**Dialog Reference** Shapefile delineating the features to be described. This can be the output of one of CoMMa's delineation tools, manually mapped or obtained by another mapping approach. There is no python reference for this parameter.	Feature Layer
workspace	**Dialog Reference** Geodatabases cannot be used in this version of the CoMMa Toolbox.	Workspace

There is no python reference for this parameter.

outFeat	Dialog Reference	String
	The name of the shapefile that will contain the additional fields calculated by this tool.	
	There is no python reference for this parameter.	

in_fill_direc	Dialog Reference	String
	The targeted features' vertical relief (POSITIVE or NEGATIVE).	
	There is no python reference for this parameter.	

inputGeo (Optional)	Dialog Reference	Raster Layer
	Geomorphons raster that will be used to describe the features based on their landform elements.	
	There is no python reference for this parameter.	

delTemp (Optional)	Dialog Reference	Boolean
	When checked all the files within the temp folder will be deleted.	
	There is no python reference for this parameter.	

Code Samples

There are no code samples for this tool.

Tags

Feature description; Geomorphometrics.

Credits

Arosio, R., Gafeira, J. & De Clippele, L. (2023) CoMMa Toolbox - Version 1.0 (https://github.com/ricarosio/CoMMa/tree/main)

Riccardo Arosio (University College Cork) and Joana Gafeira (British Geological Survey) conceived the original idea of the new ArcGIS Pro based on a previous toolbox created by Joana Gafeira, the BGS Seabed Mapping Toolbox (Gafeira, J., 2017). Riccardo Arosio wrote the Python scripts while Joana Gafeira and Laurence De Clippele performed extensive testing.
The tools development was mainly funded by INFOMAR through the Irish Marine Institute's research grant PDOC 19/08/03. The British Geological Survey and iAtlantic have also supported the creation of the toolbox.

Use limitations

CoMMa Toolbox may be freely distributed, modified and used commercially under the terms of its GNU LGPLv3 license.

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