

1 - ZÁKLADNÍ NÁSTROJE - RASTR

I. Data management tools – Raster

I.A Raster processing

I.B Raster Properties

I.C Raster Dataset

II. Spatial analyst

II.A Generalization

II.B Math

II.C Reclass

III. Conversion tools

*PřF: Z8113 Kartografické
modelování (jaro 2017)*

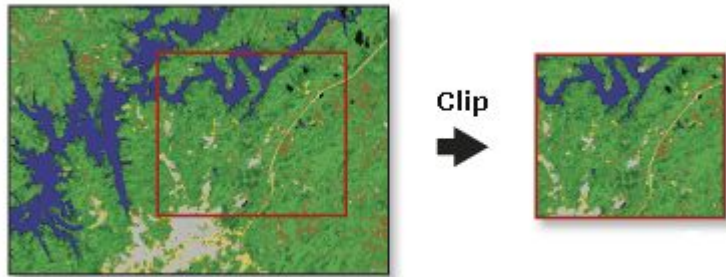
I. Data Management Tools – Raster Toolset

Toolset	Description
Mosaic Dataset	Allows you to create and edit mosaic datasets.
Raster Catalog	Allows you to work with raster catalogs. These tools allow you to copy, create, edit, and delete raster catalogs and their items.
Raster Dataset	Allows you to create and mosaic raster datasets.
Raster Processing	Allows you to perform tasks to get your raster data ready for use.
Raster Properties	Provides tools to create, view, or edit the raster dataset properties.

I.A Raster Processing

- Clip
- Composite Bands
- Resample – změna prostorového rozlišení pomocí pravidel
- Split Raster – rozdělí rastr na části (tiles)
- ...

Clip RASTER PROCCESSING



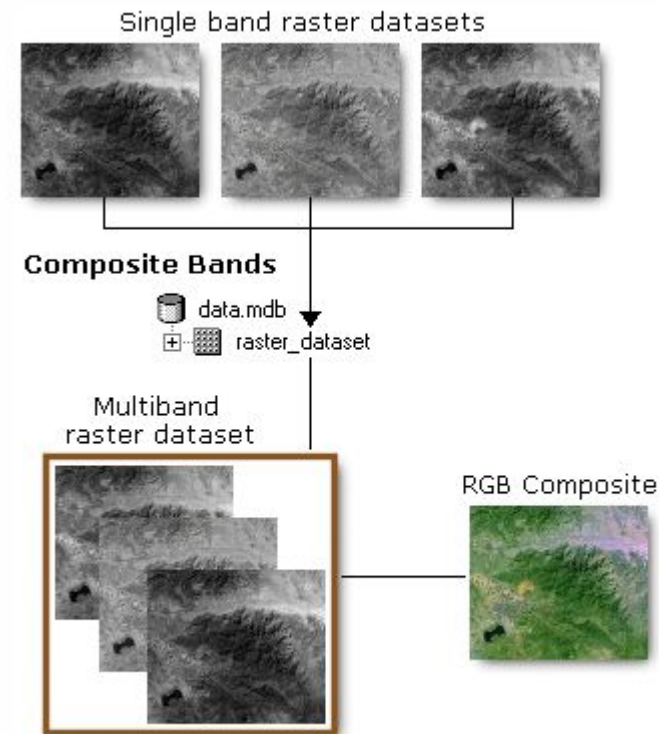
Vstup

- Raster
- Bounding box, raster, vektor

Composite Bands

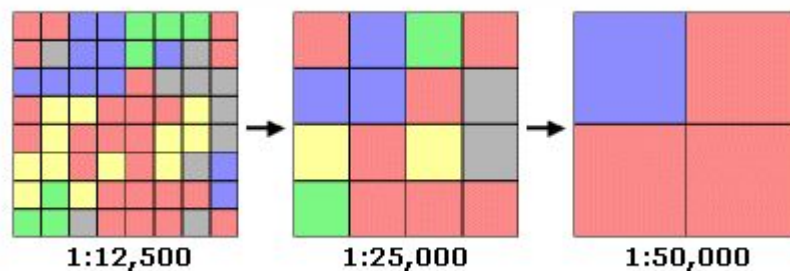
RASTER PROCCESSING

Pro kombinování spektrálních pásem

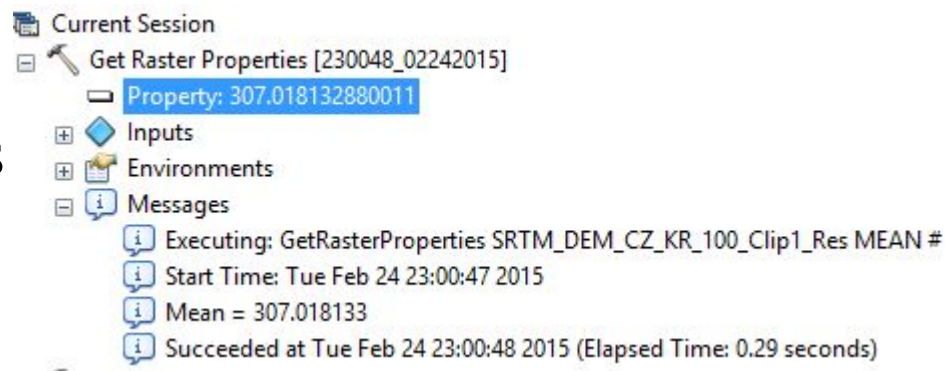


I.B Raster Properties

- Add Colormap
- Build Pyramids



- Calculate Statistics
- Get Cell Value
- Get Raster properties
- ...



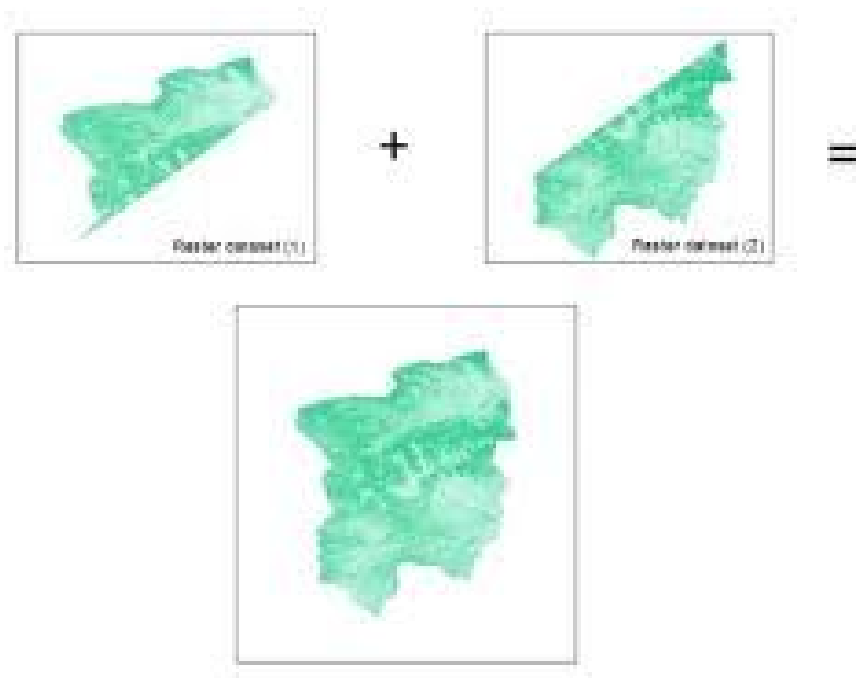
I.C Raster Dataset

Tool	Description
Copy Raster	Makes a copy of a raster dataset, loads raster datasets into a raster catalog, or converts a mosaic dataset into a raster dataset.
Create Random Raster	Creates a random raster dataset based on a user-specified distribution and extent.
Create Raster Dataset	Creates a raster dataset as a file or in a geodatabase.
Download Rasters	Allows you to download the source files of the selected rasters from an image service or mosaic dataset.
Mosaic	Mosaics multiple input rasters into an existing raster dataset.
Mosaic To New Raster	Mosaics multiple raster datasets into a new raster dataset.
Raster Catalog To Raster Dataset	Mosaics the contents of a raster catalog into a new raster dataset.
Workspace To Raster Dataset	Mosaics all the raster datasets stored within the specified workspace into one raster dataset.

Mosaic to new Raster

RASTER PROCCESSING

Kombinace rastrů + překryv



Input Rasters

Output Location

Raster Dataset Name with Extension

Spatial Reference for Raster (optional)

Pixel Type (optional)
8_BIT_UNSIGNED

Cellsize (optional)

Number of Bands

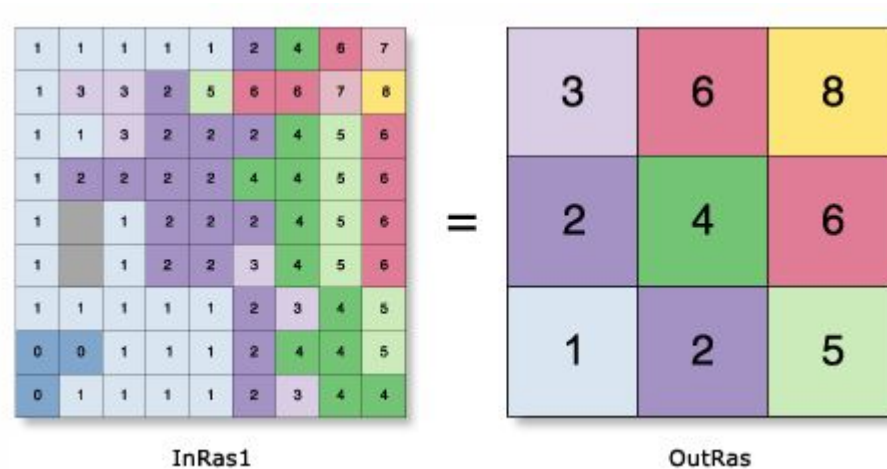
Mosaic Operator (optional)
LAST

Mosaic Colormap Mode (optional)
FIRST

II.A Spatial analyst Toolbox – Generalize

- Aggregate
- Boundary Clean
- Expand / Shrink
- Majority Filter – podobné Boundary Clean
- Region Group - regionalizace
- Thin – raster -> linie
- ...

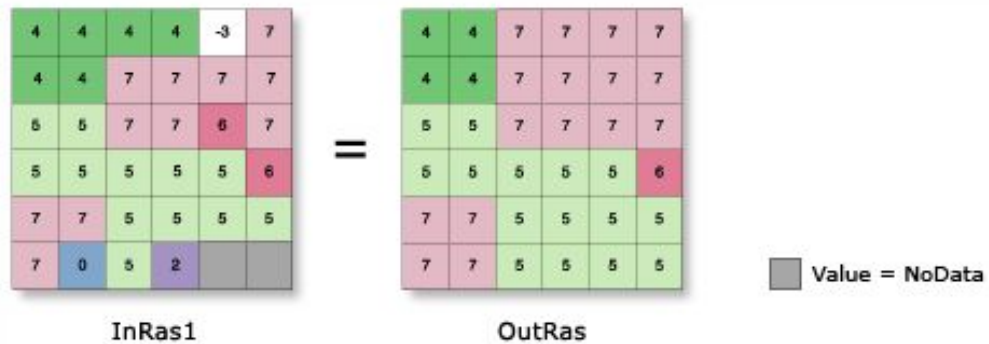
Aggregate GENERALIZE



Mění rozlišení rastru podle zadaných pravidel

- Parametr `aggregation_type` :
 - SUM, MAXIMUM, MEAN, MEDIAN, MINIMUM
- Parametr `cell_factor` – změna rozlišení

Boundary Clean GENERALIZE



`OutRas = BoundaryClean(InRas1)`

Pro potřeby zhlazení

II.B Spatial analyst Toolbox – Math Toolset

Matematické operace nad rastry

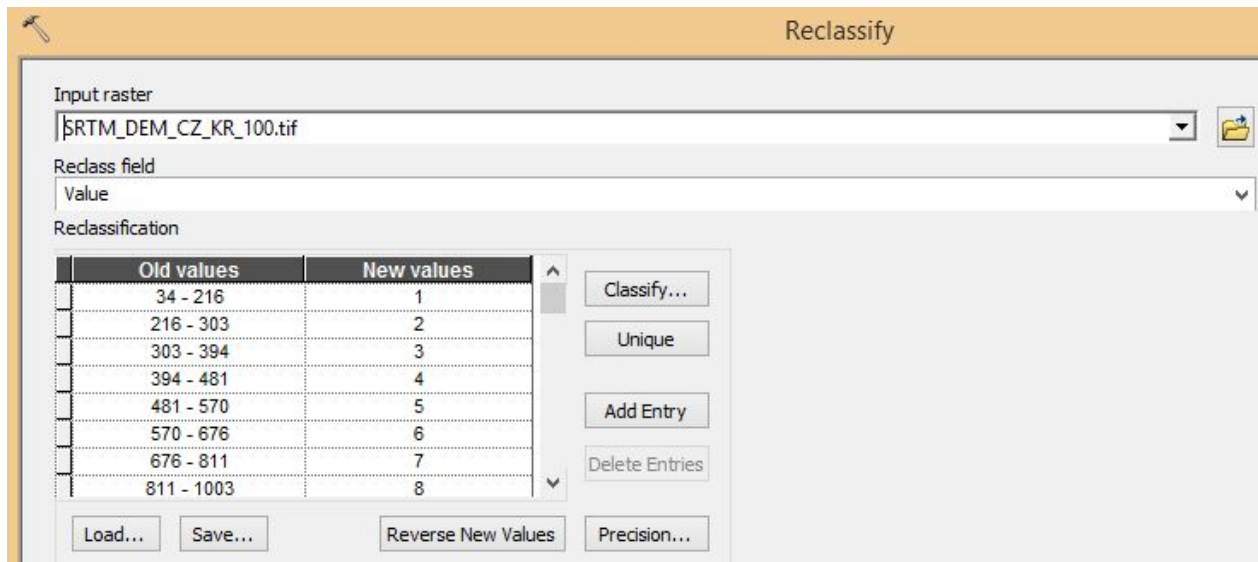
Dělení

- General – základní aritmetické operace `TIMES`, `MINUS`, `ROUND DOWN`,...
- Logical – „Booleanovská“ logika `EQUAL TO`, `IS NULL`, `DIFF`, `OVER`, ...
- Trigonometric
- Bitwise – na úrovni binární soustavy

II.C Spatial analyst Toolbox – Reclass

Tool	Description
Lookup	Creates a new raster by looking up values found in another field in the table of the input raster.
Reclass by ASCII File	Reclassifies (or changes) the values of the input cells of a raster using an ASCII remap file.
Reclass by Table	Reclassifies (or changes) the values of the input cells of a raster using a remap table.
Reclassify	Reclassifies (or changes) the values in a raster.
Rescale by Function	Rescales the input raster values by applying a selected transformation function and then transforming the resulting values onto a specified continuous evaluation scale.
Slice	Slices or reclassifies the range of values of the input cells into zones of equal interval, equal area, or by natural breaks.

Reclassify RECLASS



změna hodnot

III. Conversion tools

- To Raster

Toolset	Description
ASCII to Raster	Converts an ASCII file representing raster data to a raster dataset.
DEM to Raster	Converts a digital elevation model (DEM) in a United States Geological Survey (USGS) format to a raster dataset.
Feature to Raster	Converts features to a raster dataset.
Float to Raster	Converts a file of binary floating-point values representing raster data to a raster dataset.
LAS Dataset to Raster	Creates a raster using elevation, intensity, or RGB values stored in the lidar files (*.las) referenced by the LAS dataset.
Multipatch to Raster	Converts multipatch features to a raster dataset.
Point to Raster	Converts point features to a raster dataset.
Polygon to Raster	Converts polygon features to a raster dataset.
Polyline to Raster	Converts polyline features to a raster dataset.
Raster To Other Format	Converts one or more raster dataset formats supported by ArcGIS to a BIL, BIP, BMP, BSQ, ENVI DAT, GIF, ERDAS IMAGINE, Esri Grid, JPEG, JPEG 2000, PNG, TIFF, or to a geodatabase raster dataset format.

III. Conversion tools

- From Raster

Tool	Description
Raster to ASCII	Converts a raster dataset to an ASCII text file representing raster data.
Raster to Float	Converts a raster dataset to a file of binary floating-point values representing raster data.
Raster to Point	Converts a raster dataset to point features.
Raster to Polygon	Converts a raster dataset to polygon features.
Raster to Polyline	Converts a raster dataset to polyline features.
Raster To Video	Creates a video file from a set of images.