The Use of Geoinformation in (Anticipatory) Humanitarian Action

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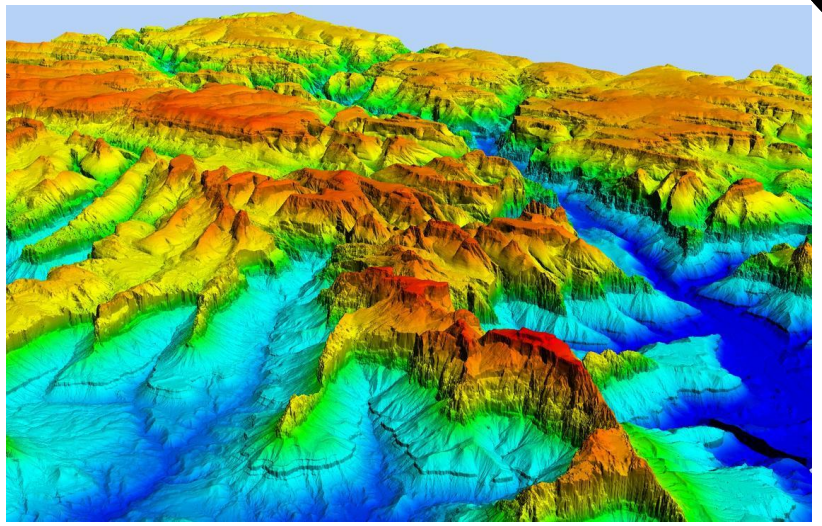
Raster Data

Loading in QGIS and Operational Example

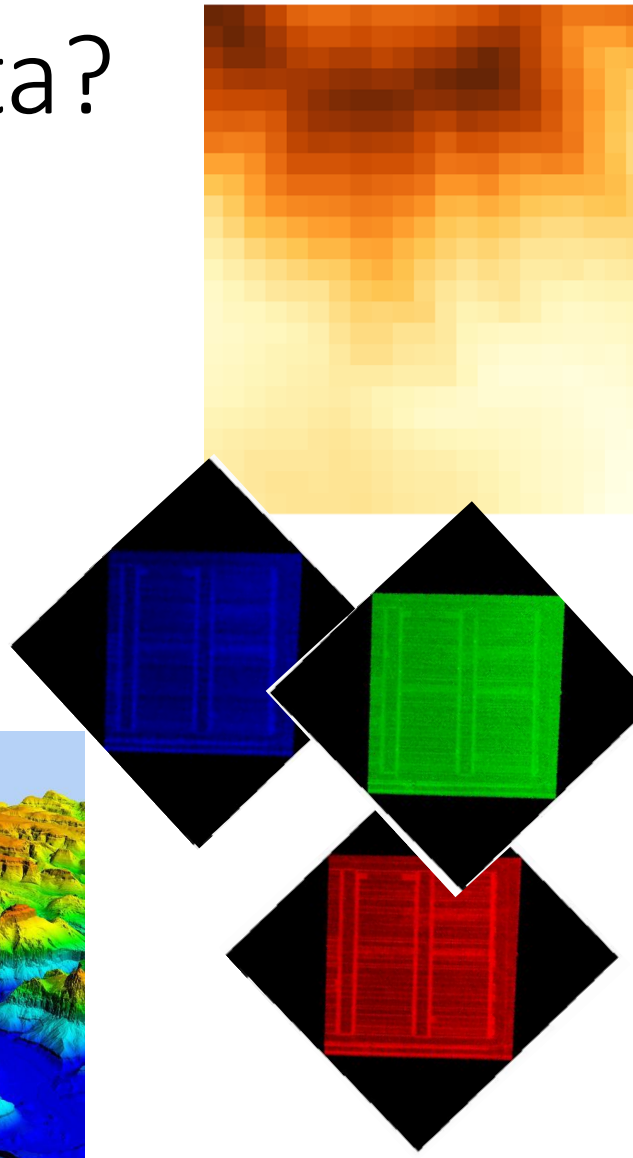
What is Raster Data?

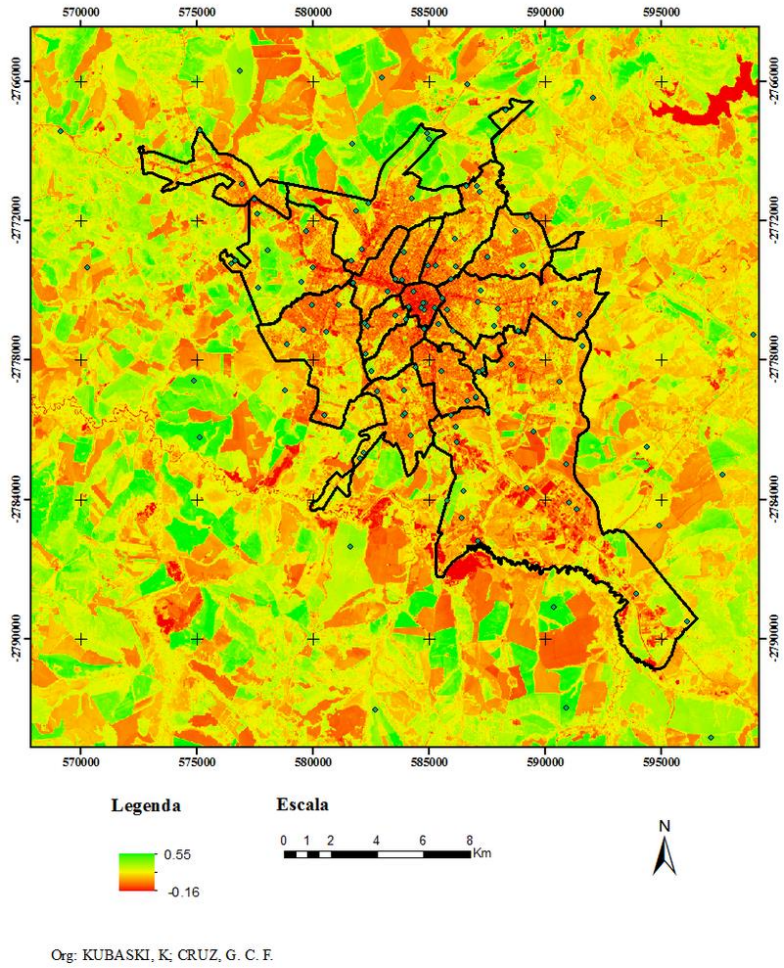
Examples:

- Digital Elevation Models
- Base Map Data
- Image (Multi-Band Raster)



gisanalyse.de/dem-daten





Kauan Mateus Kubaski and Gilson Campos Ferreira da Cruz using Landsat data from the U.S. Geological Survey - Eigenes Werk , CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=74264899

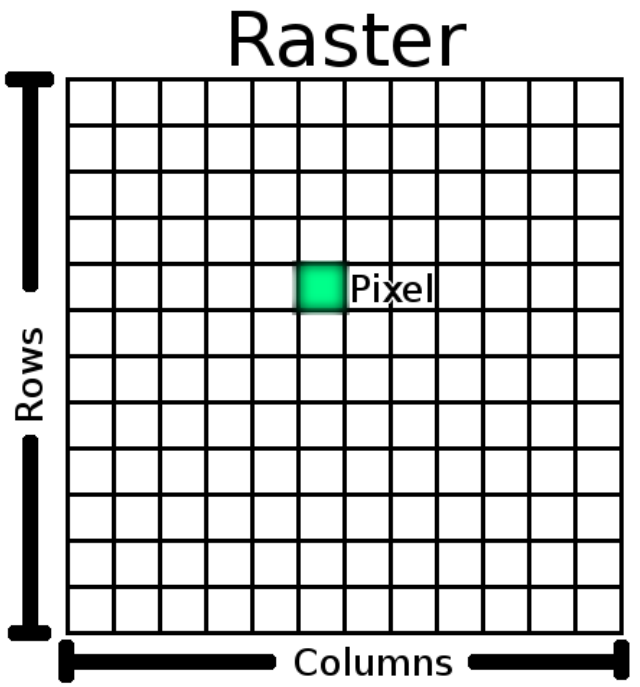
Raster versus Vector

Raster

- Made out of a great number of pixels which form a “digital photo“
- Work well for the representation of continous features (e.g. elevation)
- Relatively high data volume
- Uniform resolution
- No indiviual objects

Vector

- Points, Lines and Polygons
- Work well for the representation of discrete features
- Complex geometries
- Relatively low data volume
- Flexible resolution



docs.qgis.org/2.18/de/docs/gentle_gis_introduction/raster_data

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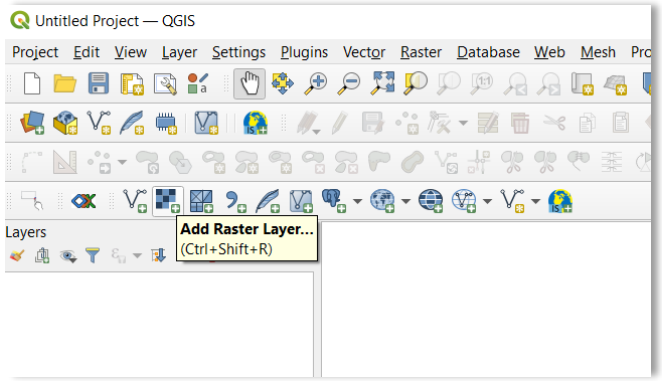
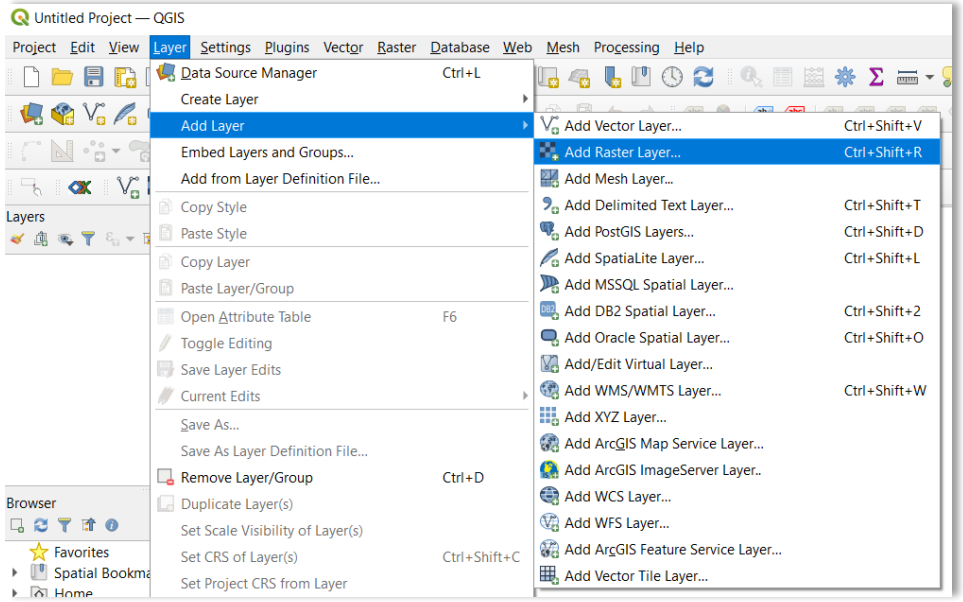
Loading Raster Data in QGIS

- Click „Add Raster Layer“ in the toolbar



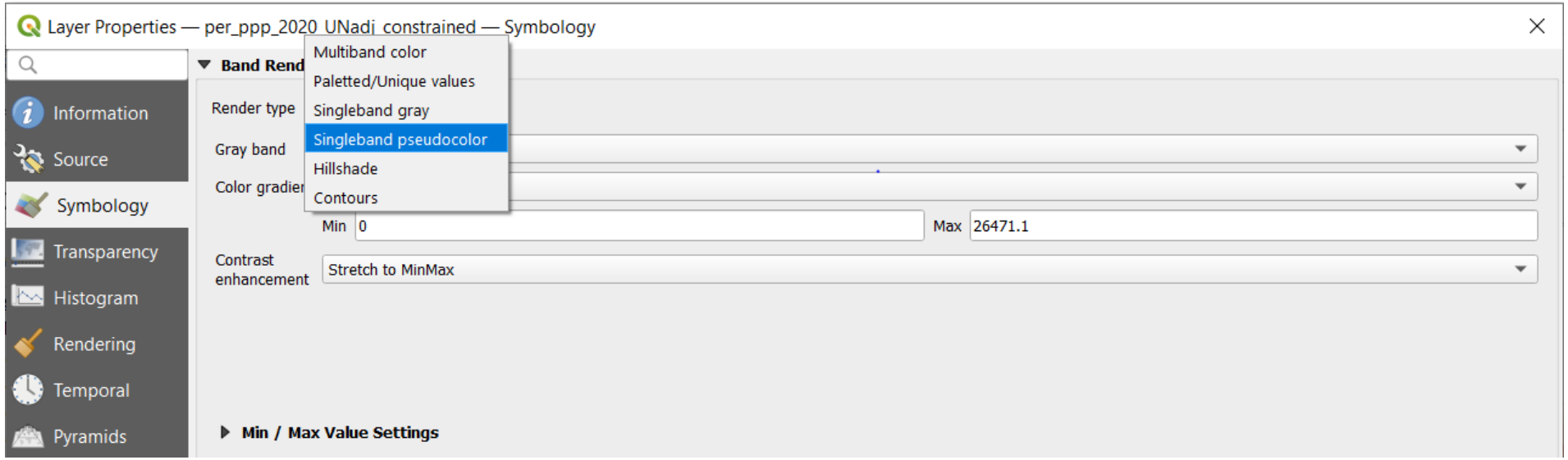
OR

- „Layer Menu“
  - „Add Layer“
    - Raster Layer“



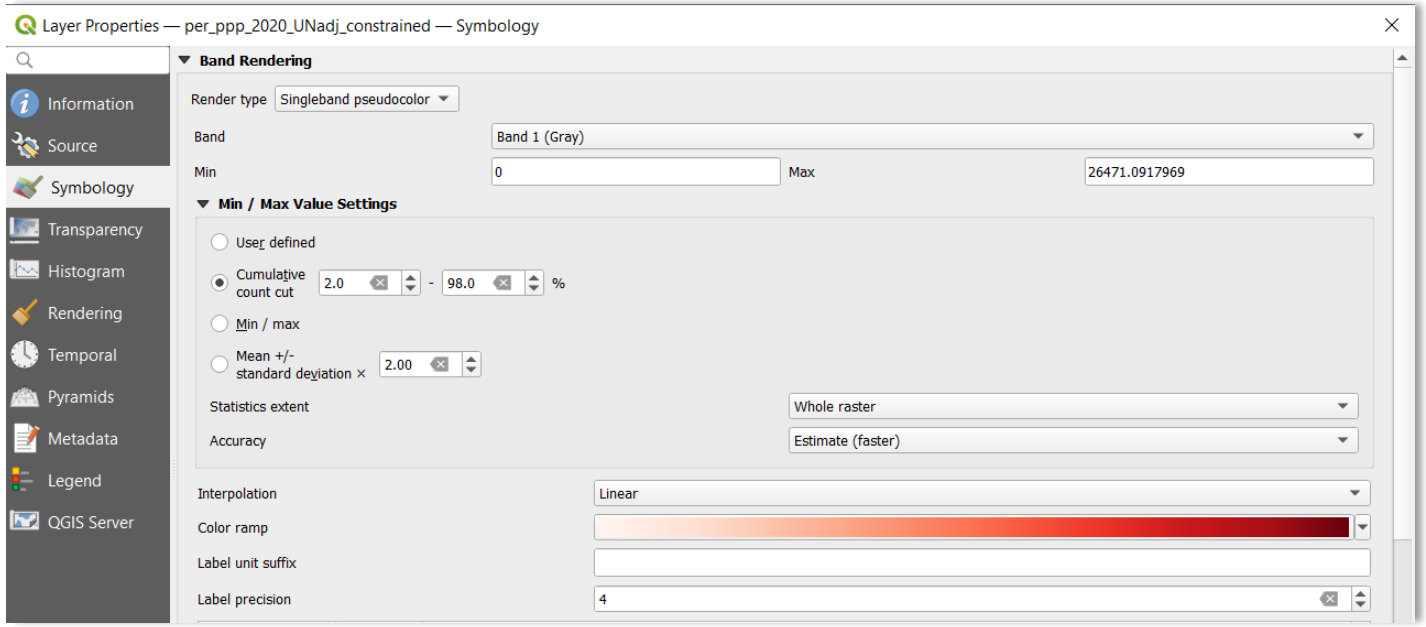
Basic Raster Styling

- Open the „Symbology“ (Right click on layer and open „Properties“)
  - Change the „Render type“ to „Singleband pseudocolor“



Basic Raster Styling

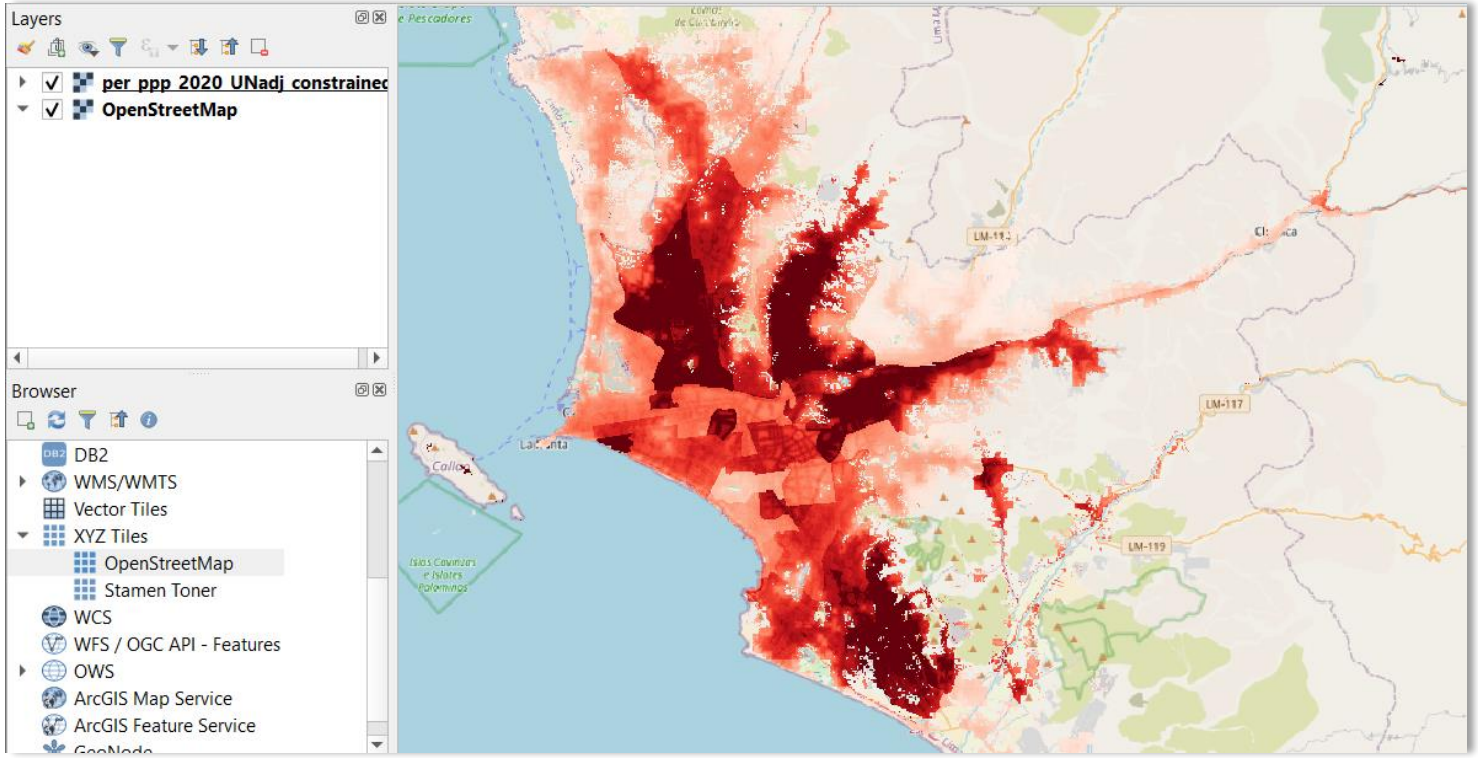
- The default is a white/redish color ramp (feel free to adjust)
- Change the „Min / Max Value Settings“ by changing to „Cumulative count cut“ to cut the outliers and to get a more representative visualization.



Hint: If you have more than one layer with similar setup (e.g. population count in different years), you can just copy the style (right-click on layer, „Styles“, „Copy Style“/“Paste Style“)

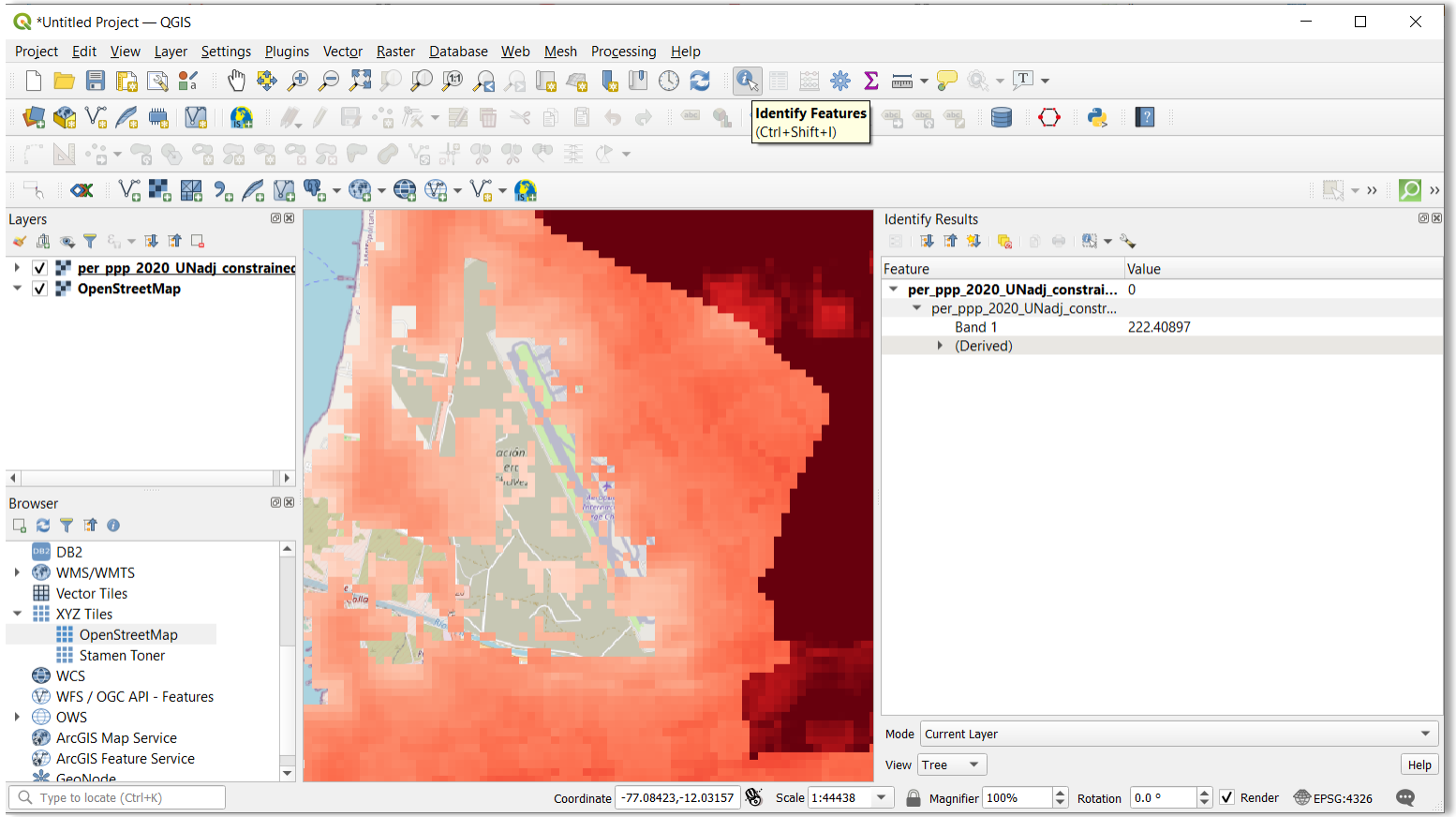
Basic Raster Styling

- Zoom in to have a closer look at the data
- Feel free to also add „OpenStreetMap“ as a basemap



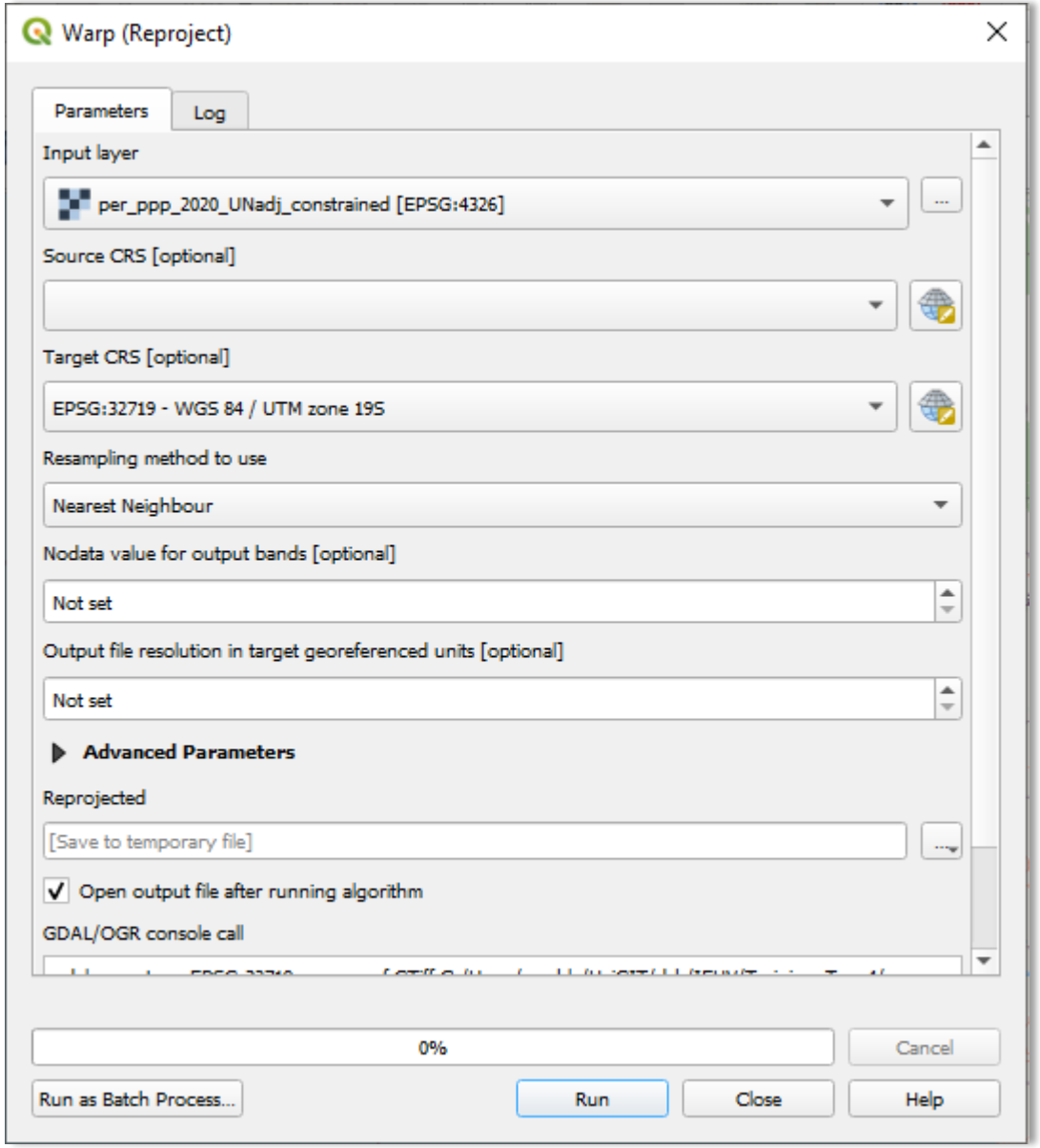
Basic Raster Styling

- Use the „Identify Features“ Tool to explore the dataset



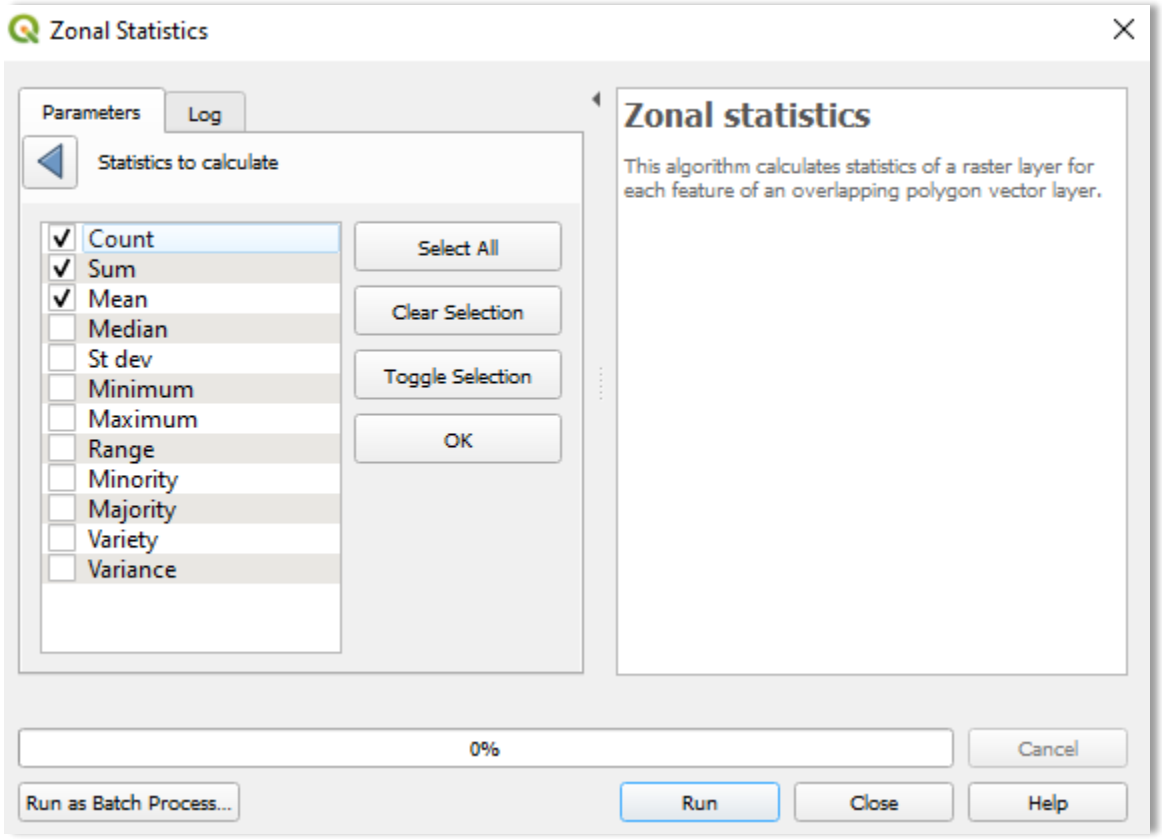
Reproject Raster Layer

- Use the „Warp (Reproject)“ Tool
- Select the input layer
- Set the Target CRS
- Choose “Nearest Neighbour“ as Resampling method
- Run the query



Zonal Statistics

- Open the „Zonal statistics“ tool
- Select the vector input layer and raster input layer
- Choose the statistics you would like to calculate
- Choose a folder for your output.



Hands-OSM

and

Operational Example