

hw02.feedback

2023-12-13

count	33
avg	53%
max	100%
min	10%
std-dev	25%
median	55%

Reports I put 5 points in the PDF

1. General quality (descriptions, maps, errors?, etc)
2. Resampled? And/or aware of it?
3. Handling `no_data` from `gdalwarp` output?
4. statistics (RMSE, min/max, etc) + overlay differences maps?
5. Zooming in on different classes (buildings, forest, water)

Some feedback in not particular order

- Aspect/hillshade: many didn't validate their results (GDAL + 3x3 simple grid)
- COP30 != 30m resolution
- 0==no_data for statistical analysis? Drama
- Resampling was necessary! Downsampling? Upsampling?
 - QGIS merge == what does it do? gdal_merge.py does resample based on the first grid...
- No need to tell me how you installed GDAL, focus on what the programs do

Some feedback in no particular order

- Printscreen of QGIS as report is... poor. Tell me what you did and explain it to me: resampled COP30 to 5m; filled no-data by doing this and that, etc etc. I want to be able to redo what you did, but with other tools. That's the whole point of a paper/thesis/report
- AHN4 is a DTM but also a DSM, you had to use the DSM
- What you learned in geo1002 about cartography still apply here:
 - Legends, scale, good colormaps, etc
- Some put grayscale maps like if colours are expensive? Colours are free in PDF, use them!

3 Comparing the AHN4 and Copernicus GLO-30 elevations

3.1 Method

To compare the elevations, QGIS and Python will be used. Firstly, from GeoTiles the tiles *R5_69AZ2* and *R5_69BZ1* are downloaded as 5 meter DSM tiles. The two .tiffs are joined in QGIS and clipped to the size of the GLO-30.tiff. This results in two maps, one for the GLO-30 and one for the AHN4. They are shown in Figure 2.

Elevation GLO-30 & AHN4

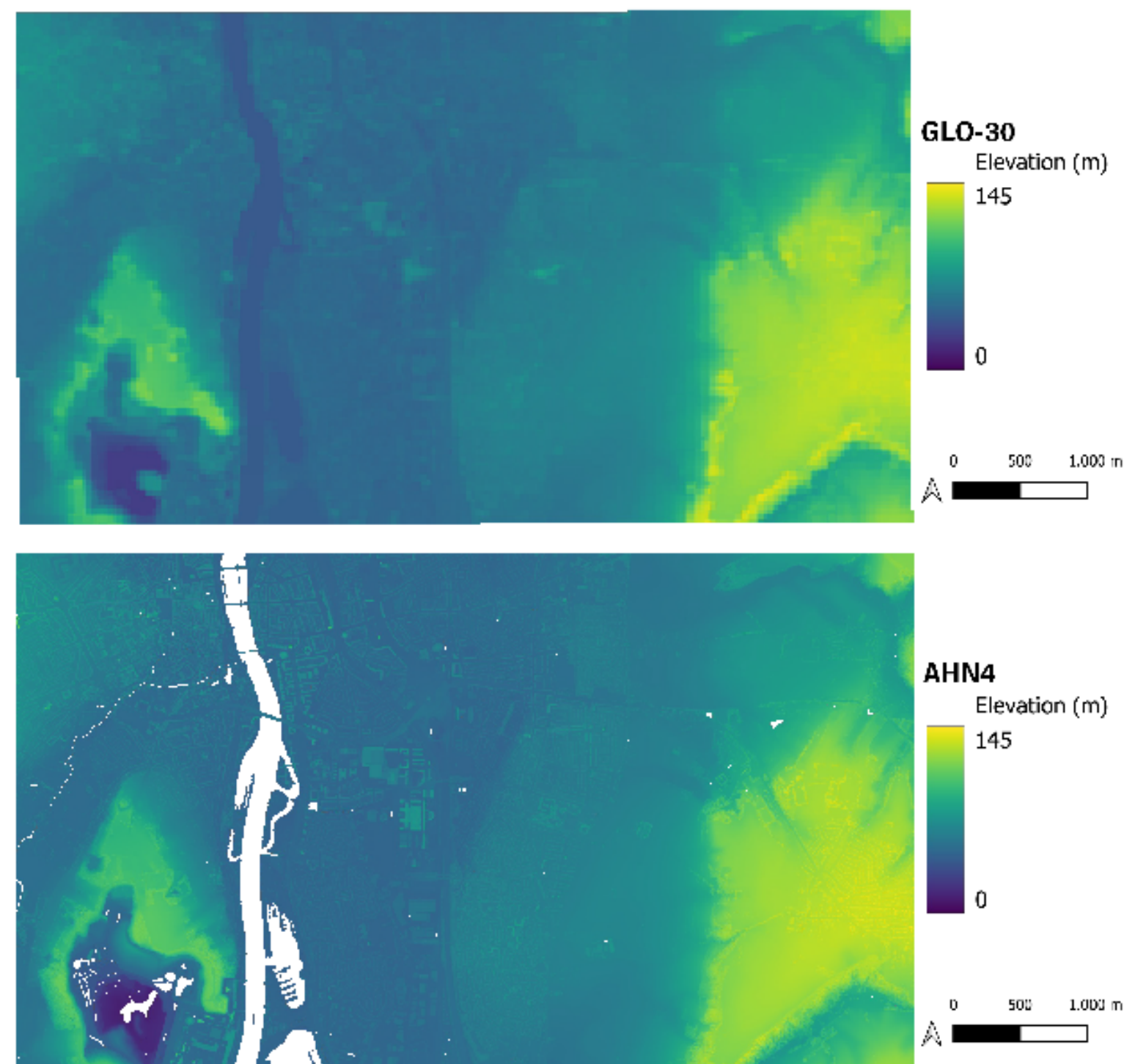
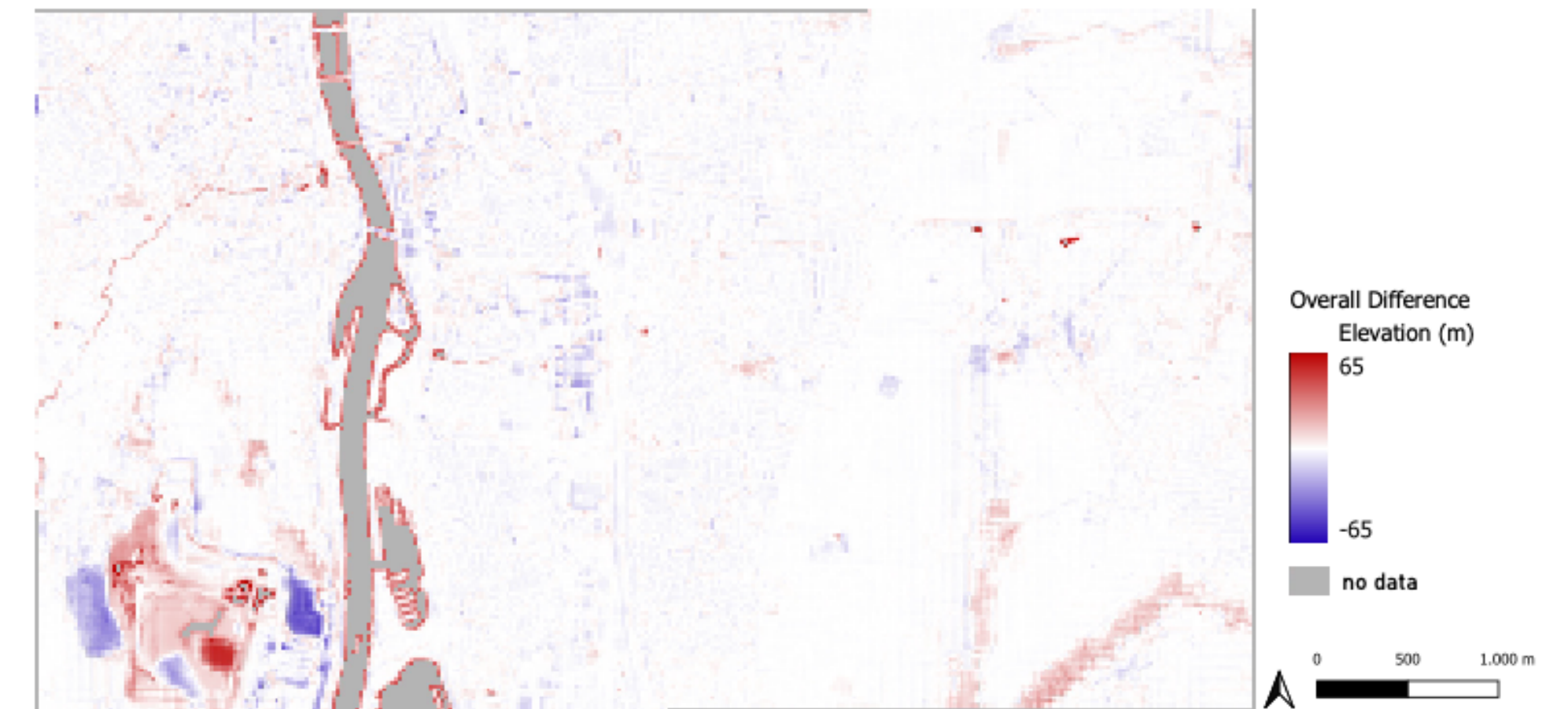


Figure 2: GLO-30 and AHN4 Elevations.

3.2 Visual comparison

The methodology described in the previous paragraph results in the following figure:

Overall Elevation Difference Between GLO-30 & AHN4



Chosen Land Coverage Regions

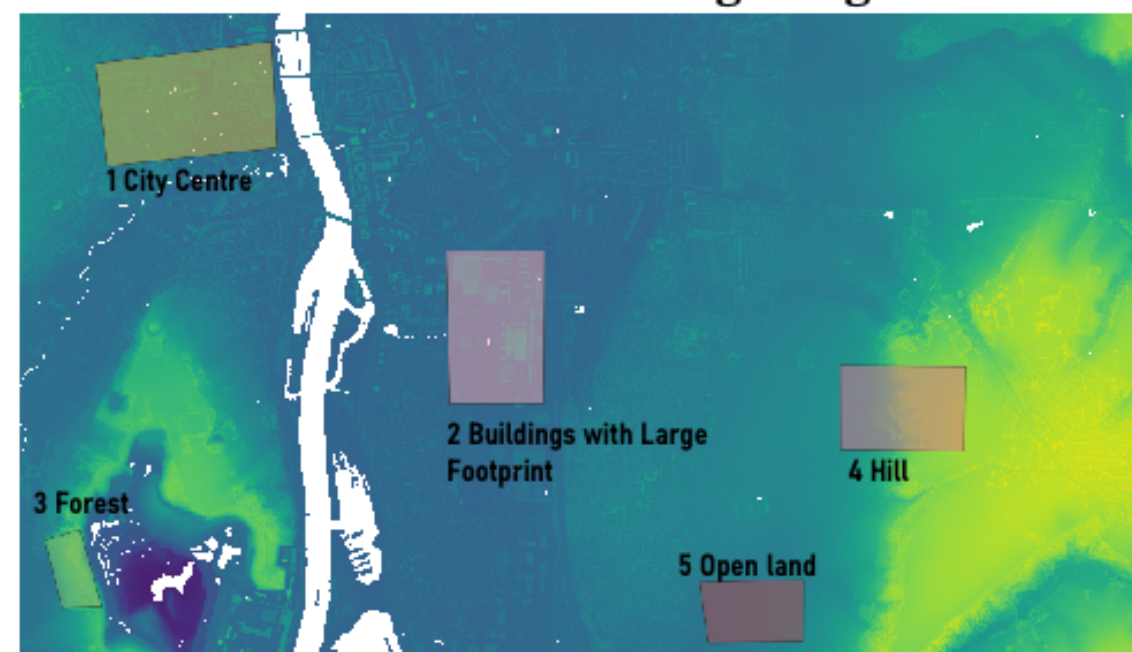


Figure 4: Overall Elevation Difference

3.2.1 City centre

City Centre Elevation Difference Between GLO-30 & AHN4

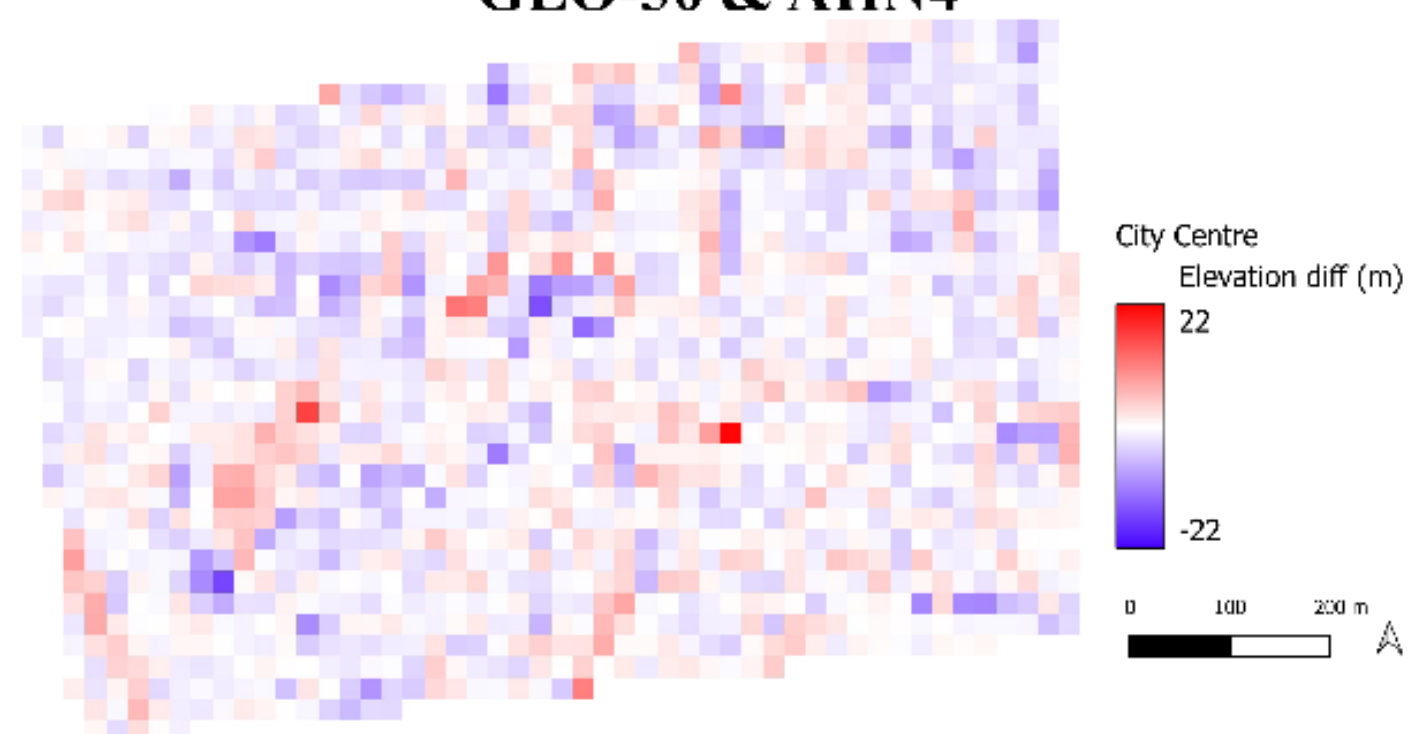


Figure 5: City Centre Elevation Difference

3.3 Statistical comparison

Finally, a statistical comparison is performed. All the maps are exported as .tiff and opened in Python, using rasterio to open the file as a np.array. NumPy is used for different computations, resulting in Table 1.

Region	Min (m)	Max (m)	Mean (m)	SD	Accuracy of 0.5m (%)
Overall	-48.021	64.764	0.486	5.96	33.5%
City centre	-16.06	21.627	-0.498	3.218	15.6%
Buildings large foot	-24.136	21.73	-1.73	4.707	20.0%
Forest	-36.878	13.779	-18.908	8.462	0.0%
Hill	-7.455	3.511	-0.377	1.269	49.5%
Open land	-1.298	4.18	-0.029	0.588	82.9%

Table 1: Difference in Elevation Statistics for Different Regions