

Paper2GIS

Auto-digitising, paper-based participatory GIS

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Participatory GIS

Map Satellite

Click to turn the Spraycan on Undo Clear Spray Reset Map

Traveller's Rest Inn
Forest Side
National Trust - Allan Bank and Grasmere
Grasmere
Wordsworth Grasmere
Rydal Mount and Gardens
Rydal Ha
Rydal
Rydal Cave

Great Langdale

Google

Keyboard shortcuts Map data ©2023 Imagery ©2023 Airbus, CNES / Airbus, Infoterra Ltd & Bluesky, Landsat / Copernicus, Maxar Technologies 200 m Terms of Use Report a map error

Q. 1 of 3:

Where do you perceive to be natural in the landscape?

Please explain your mapping choices

How certain are you? (on a scale of 1-10)

0/10

Previous Question

Submit & Spray Again

Submit & Next Question

Turn the spraycan off to zoom or pan the map. The spray size can be adjusted by zooming in or out. Only press 'submit' when you are happy with your answers.

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Representation & Accessibility

(Huck et al. 2017)

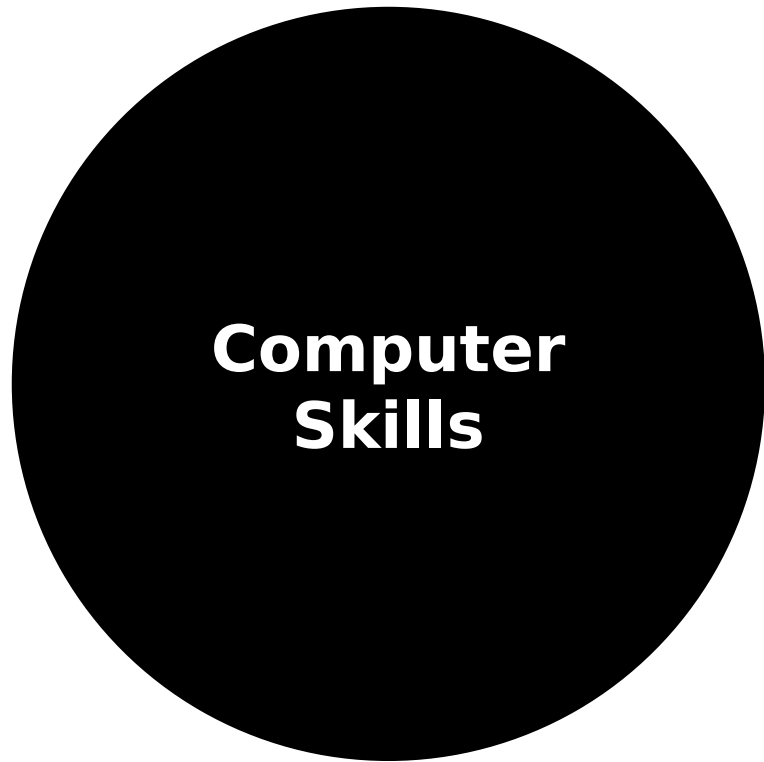
Digital Divide(s)

Paper2GIS

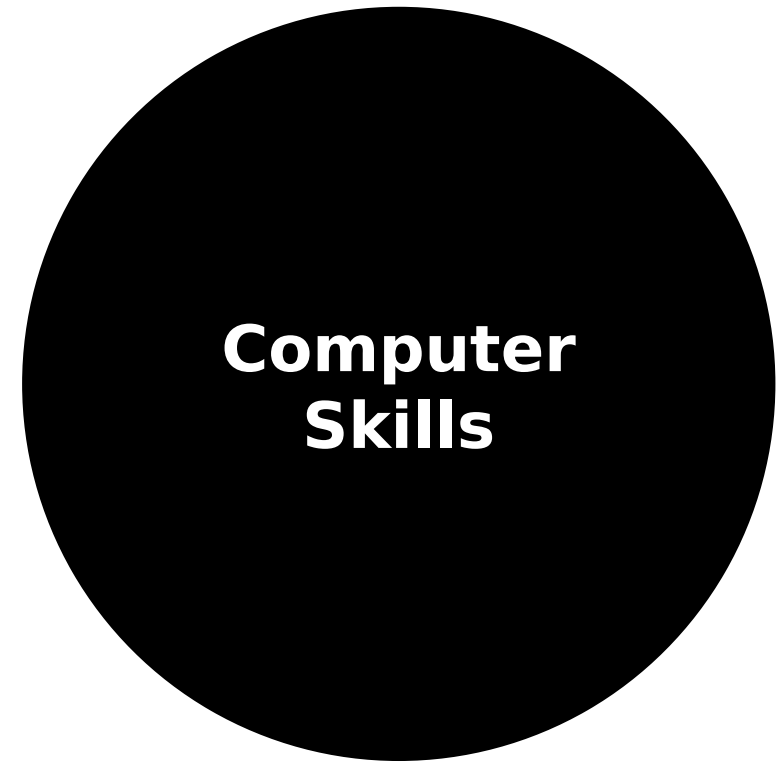
<https://github.com/jonnyhuck/Paper2GIS>

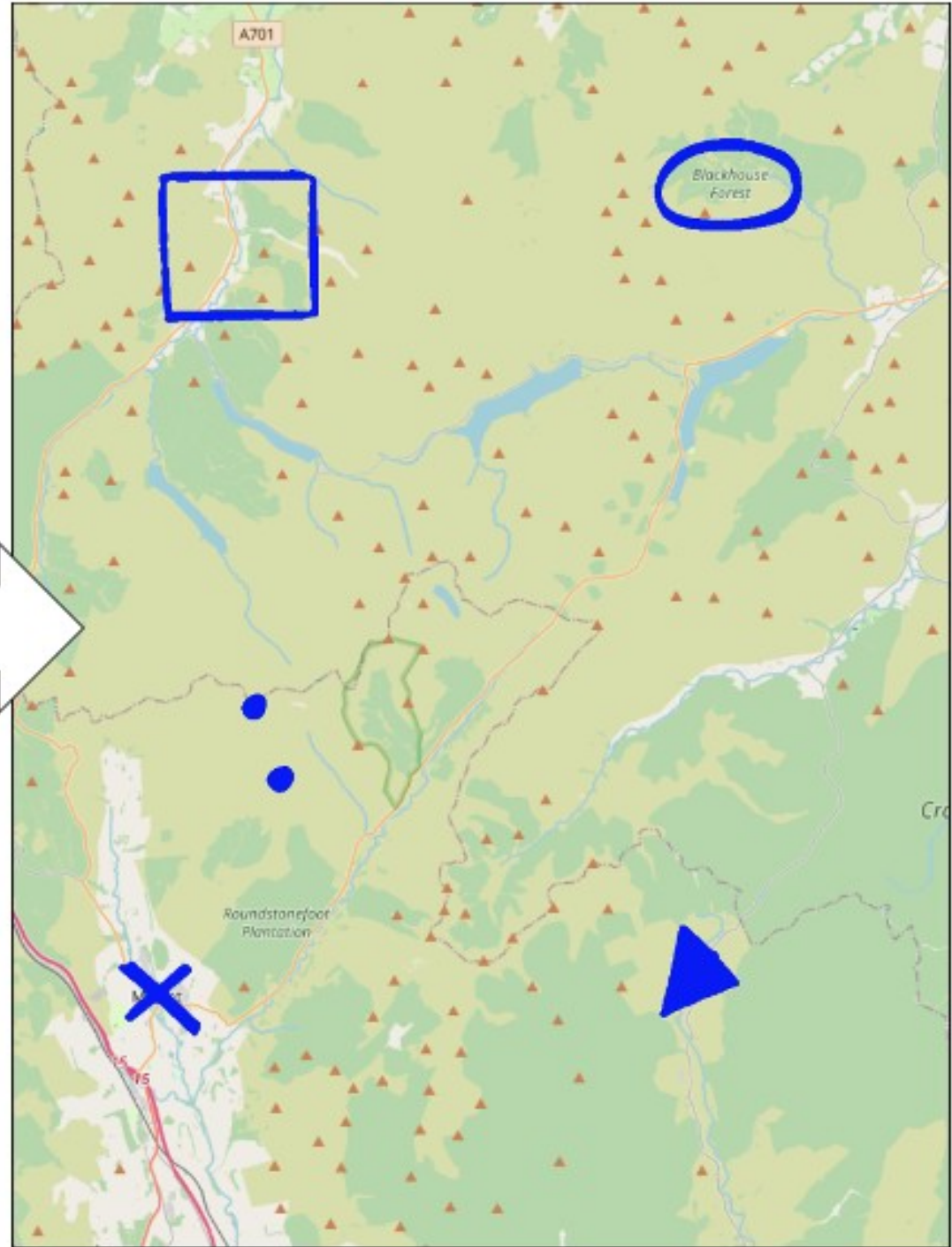
V1. 2016

Participant



Researcher

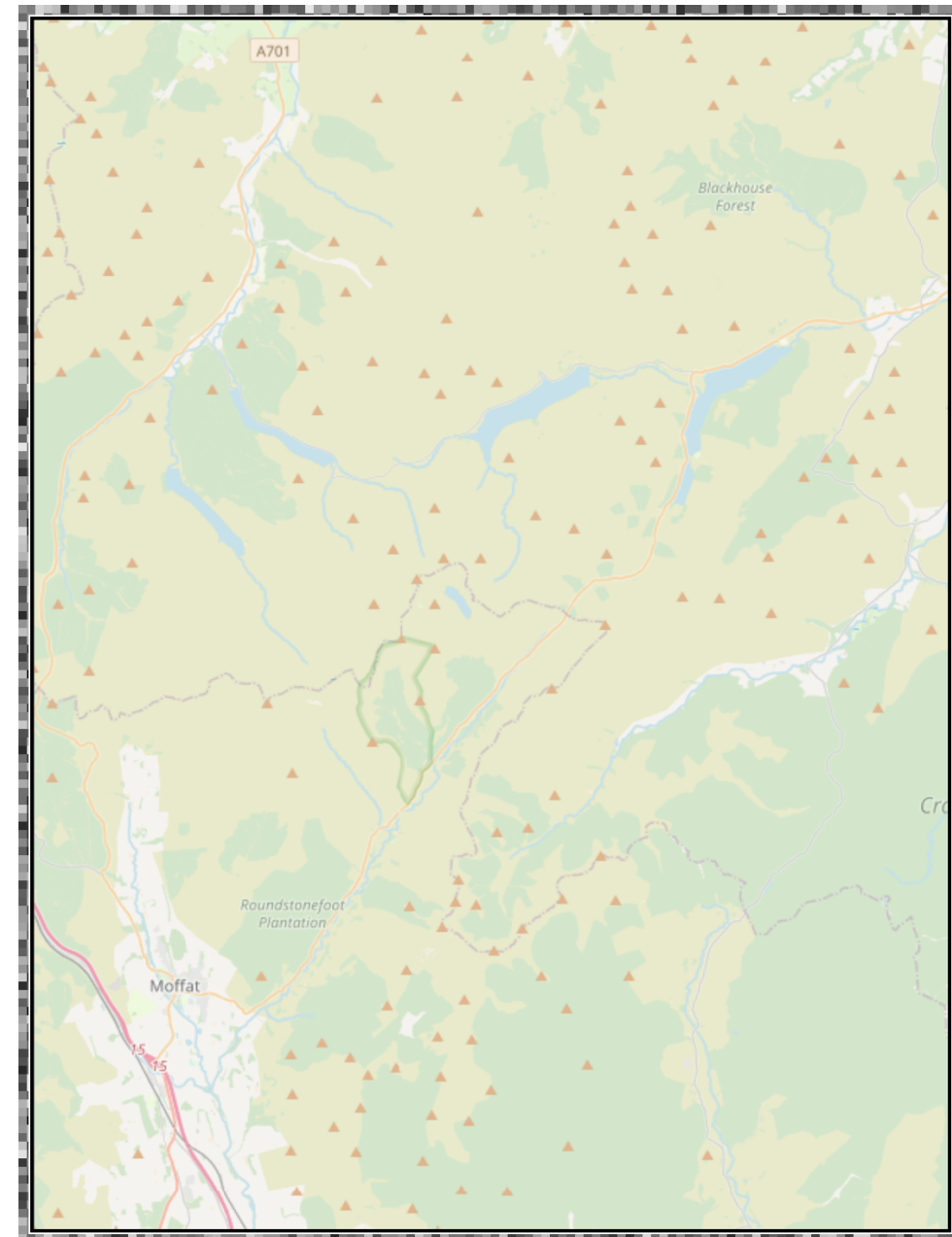




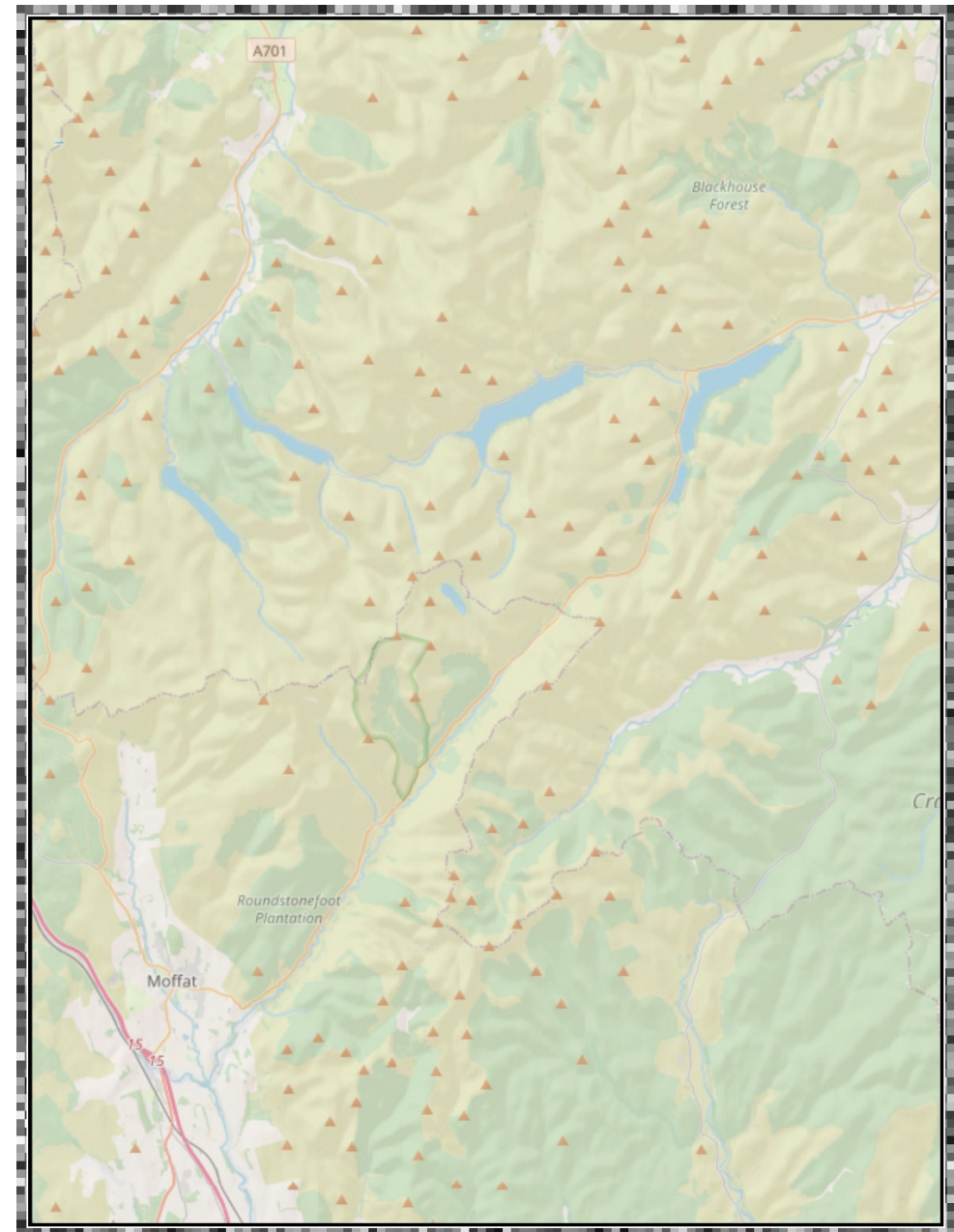
1. Create a map (p2g.py generate)
2. Draw on it & photograph
3. Extract (p2g.py extract)

p2g.py generate

```
python p2g.py generate -a -390704  
-b 7414244 -c -343416 -d 7476887  
-o ./thf-map.png -t True -z 10
```



```
python p2g.py generate -a -390704  
-b 7414244 -c -343416 -d 7476887  
-o ./thf-map.png -t True -z 10  
-s True
```



f9c52610

Paper2GIS Copyright 2023 Dr Jonny Huck: <https://github.com/jonnyhuck/paper2gis>.
Map data Copyright 2023 OpenStreetMap Contributors. Hillshade data Copyright 2023 ESRI, USGS.

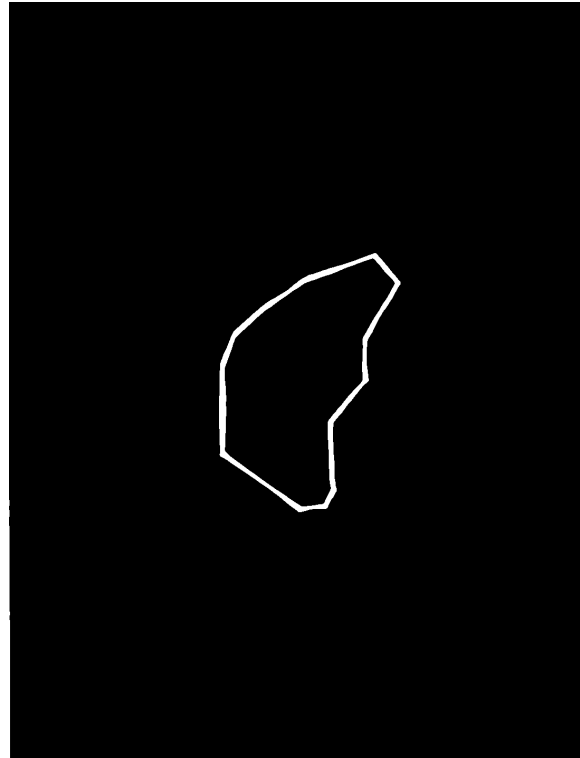
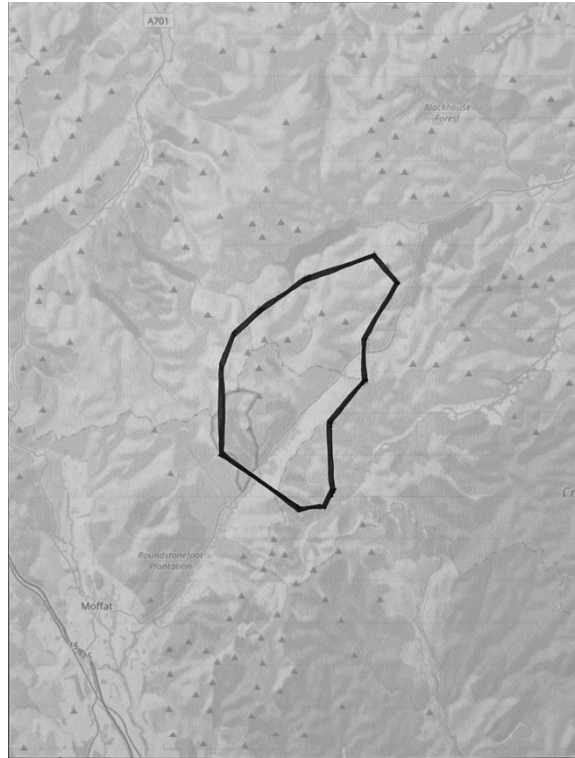


usage: Paper2GIS generate [-h] -a BL_X -b BL_Y -c TR_X -d TR_Y [-e EPSG] [-r RESOLUTION] [-i INPUT] [-o OUTPUT] [-t {True,False}] [-f FADE] [-z ZOOM] [-s {True,False}] [-sa HILLSHADEALPHA]

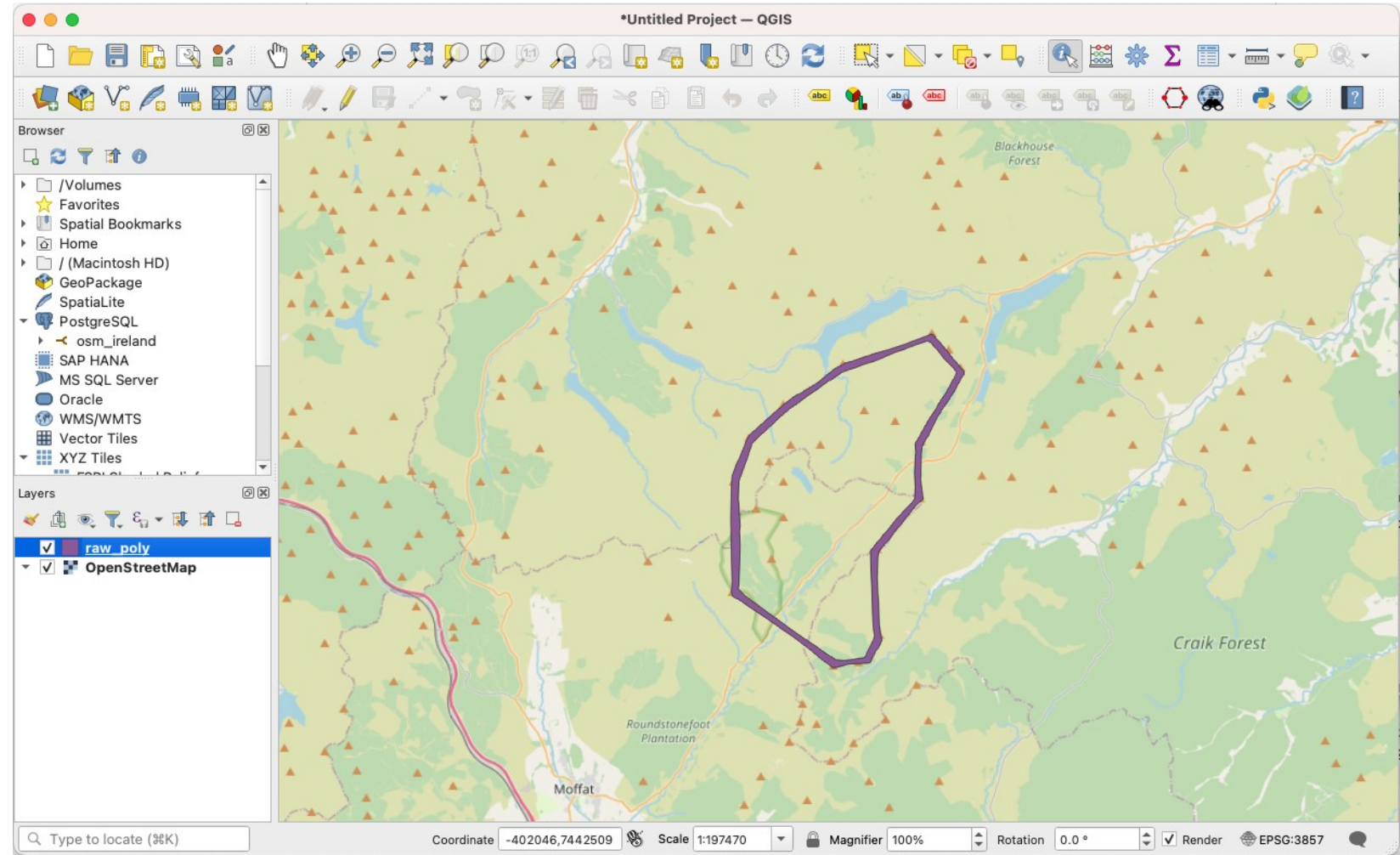
options:

- h, --help show this help message and exit
- a BL_X, --bl_x BL_X bottom left x coord
- b BL_Y, --bl_y BL_Y bottom left y coord
- c TR_X, --tr_x TR_X top right x coord
- d TR_Y, --tr_y TR_Y top right y coord
- e EPSG, --epsg EPSG EPSG code for the map CRS
- r RESOLUTION, --resolution RESOLUTION
Resolution of the input map image (dpi)
- i INPUT, --input INPUT
the input map image (file path) - this is ignored if --tiles=True
- o OUTPUT, --output OUTPUT
the output data file (file path)
- t {True,False}, --tiles {True,False}
create a OSM map (ignores --input)
- f FADE, --fade FADE intensity of the white filter over the tiles (0-255)
- z ZOOM, --zoom ZOOM requested zoom level of OSM tiles (necessary if using tiles)
- s {True,False}, --hillshade {True,False}
add hillshade to generated OSM map
- sa HILLSHADEALPHA, --hillshadealpha HILLSHADEALPHA
the alpha value for the hillshade layer

p2g.py extract

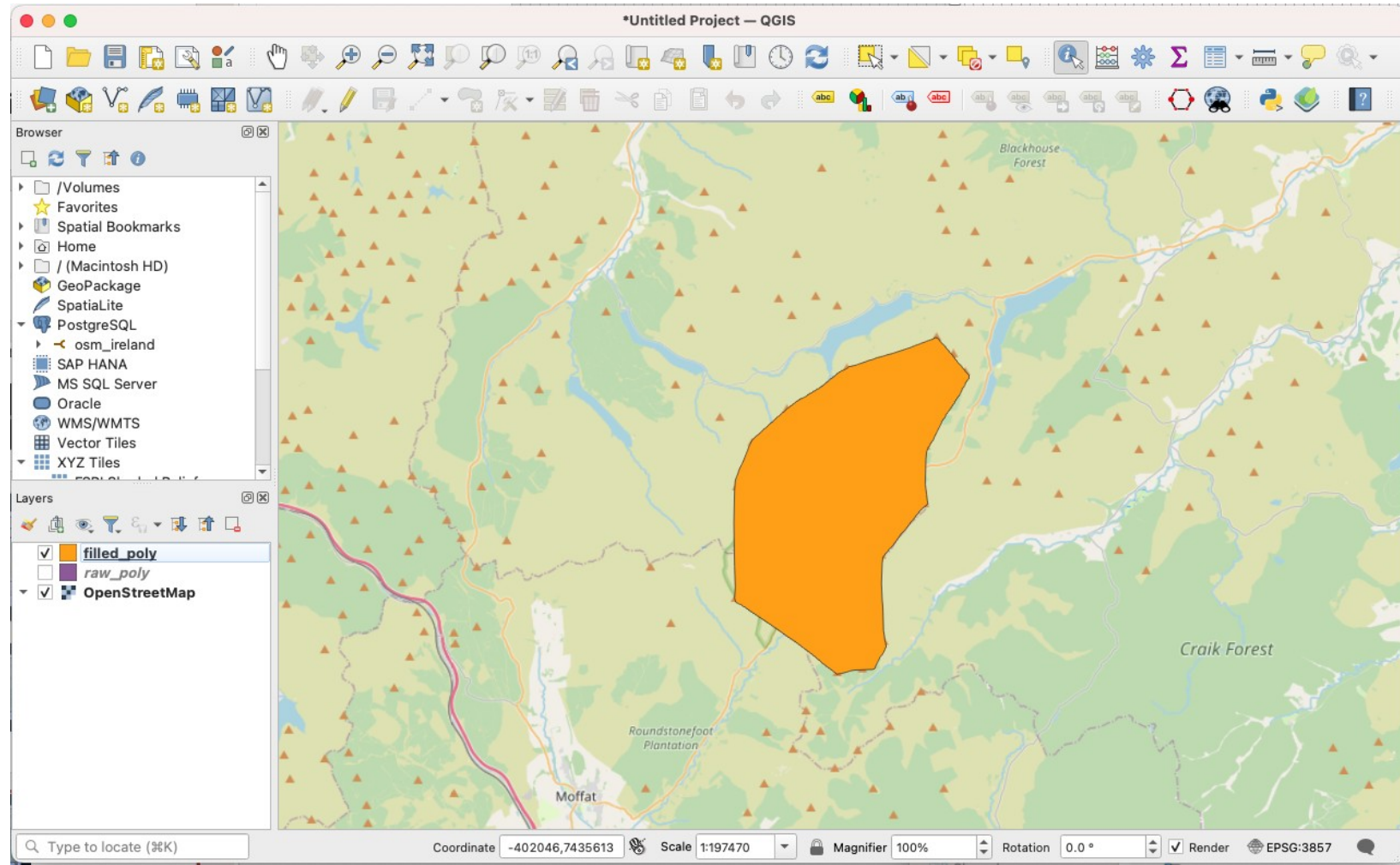
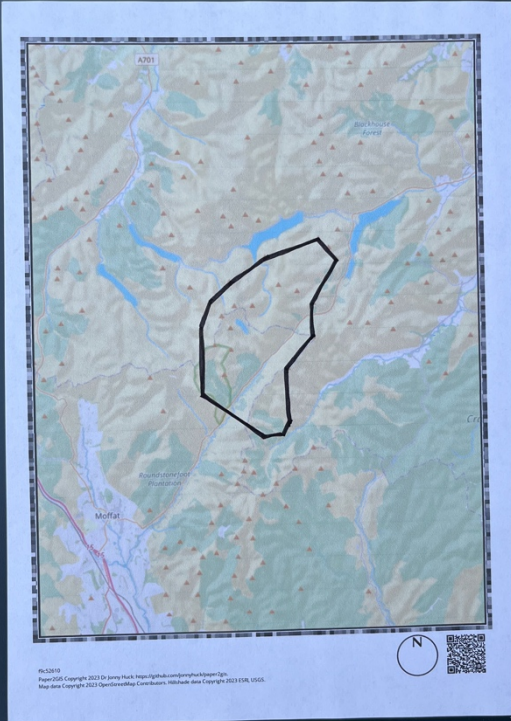


```
python p2g.py extract -r thf-map.png -t  
IMG_3116.jpg -o out/raw_poly.shp -a  
250000
```

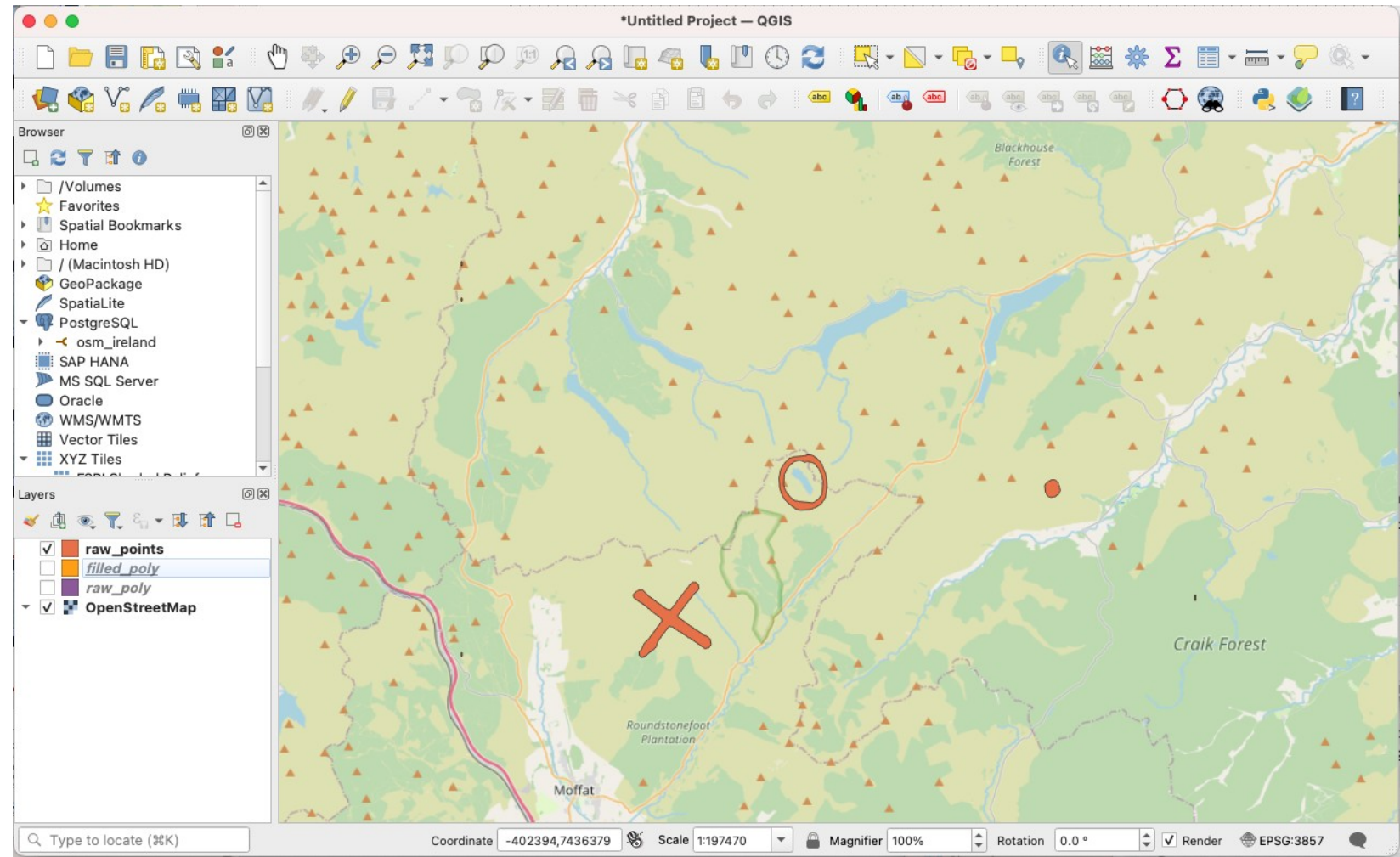



```
python p2g.py extract -r thf-map.png -t  
IMG_3116.jpg -o out/raw_poly.shp -a  
250000
```

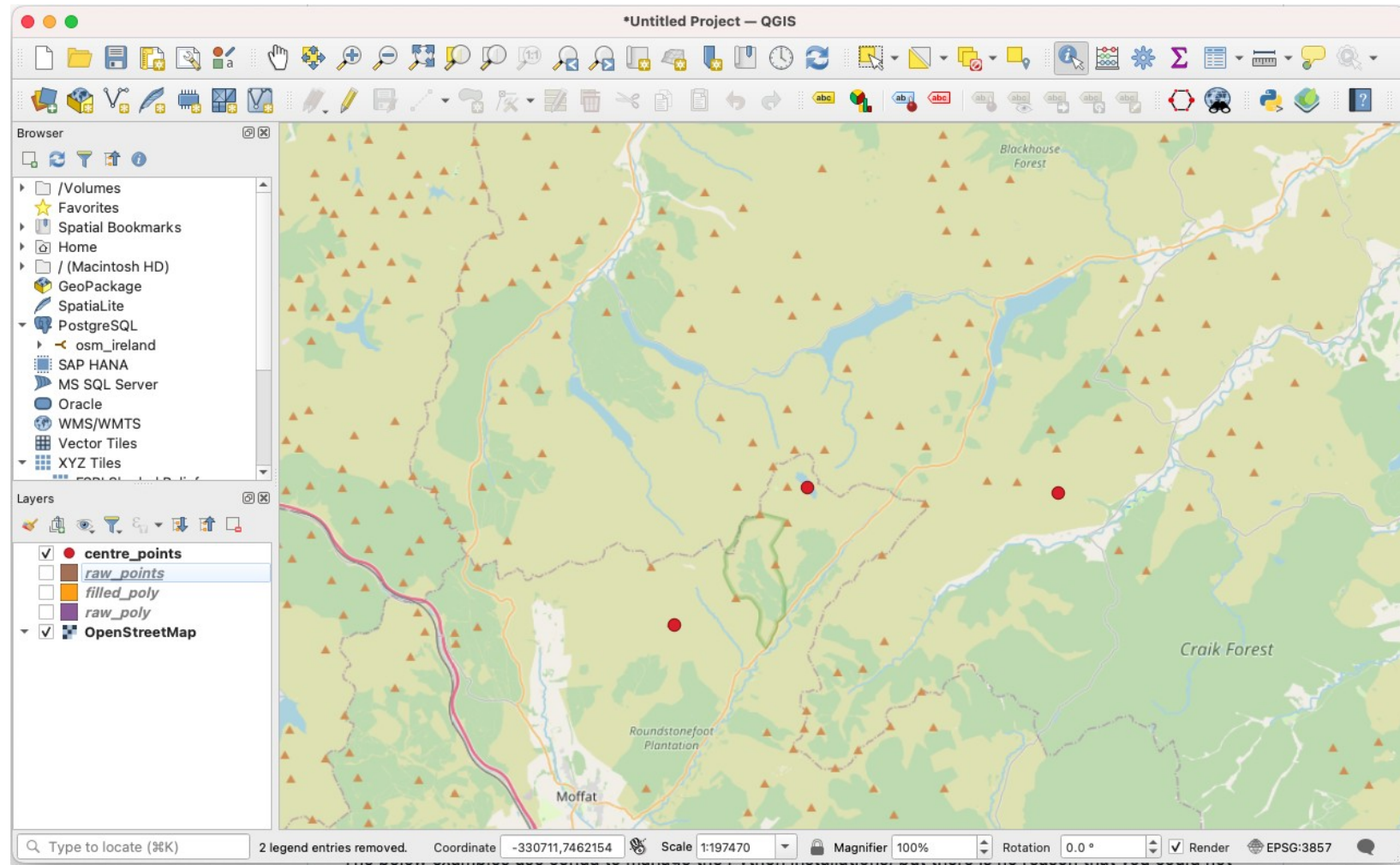
-ce True



```
python p2g.py extract -r thf-map.png -t
IMG_3117.jpg -o out/raw_points.shp -a
80000
```



```
python p2g.py extract -r thf-map.png -t  
IMG_3117.jpg -o out/raw_points.shp -a  
80000 -cx True
```



usage: Paper2GIS extract [-h] -r REFERENCE -t TARGET [-o OUTPUT] [-l LOWE_DISTANCE] [-k KERNEL] [-i THRESHOLD] [-m HOMO_MATCHES] [-f FRAME] [-a MIN_AREA] [-x MIN_RATIO] [-b BUFFER] [-cc {True,False}] [-cx {True,False}] [-cr {True,False}] [-ce {True,False}] [-ci {True,False}] [-d {True,False}]

options:

- h, --help show this help message and exit
- r REFERENCE, --reference REFERENCE
the reference image
- t TARGET, --target TARGET
the target image
- o OUTPUT, --output OUTPUT
the name of the output file
- l LOWE_DISTANCE, --lowe_distance LOWE_DISTANCE
the lowe distance threshold
- k KERNEL, --kernel KERNEL
the size of the kernel used for opening the image
- i THRESHOLD, --threshold THRESHOLD
the threshold the target image
- m HOMO_MATCHES, --homo_matches HOMO_MATCHES
the number of matches required for homography
- f FRAME, --frame FRAME
a frame to add round the image if the map is too close to the edge
- a MIN_AREA, --min_area MIN_AREA
the area below which features will be rejected
- x MIN_RATIO, --min_ratio MIN_RATIO
the ratio (long/short) below which features will be rejected
- b BUFFER, --buffer BUFFER
buffer around the edge used for data cleaning

```
-cc {True,False}, --convex_hull {True,False}
    store convex hulls of extracted shapes?
-cx {True,False}, --centroid {True,False}
    store centroids of extracted shapes?
-cr {True,False}, --representative_point {True,False}
    store representative points of extracted shapes?
-ce {True,False}, --exterior {True,False}
    extract polygons from boundaries by extracting the outer ring
-ci {True,False}, --interior {True,False}
    extract polygons from boundaries by extracting the inner rings
-d {True,False}, --demo {True,False}
    the output data file
```

ToDo List:

- GUI (or QGIS Plugin?)
- Installers (Linux, Mac, Windows)
- Better layout handling in map generator
- More cartographic options in map generator
- Handling for HEIC images
- Many more...

<https://github.com/jonnyhuck/Paper2GIS#future-development>

I am very open to pull requests!



OpenCV



also: fiona (OGR interface), rasterio (GDAL interface),
shapely (GEOS interface), numpy, cartopy, qrcode,
zbar,
ESRI Shaded Relief.

formerly: mapnik

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