

Documentation: Creating Basemaps from Natural Earth Data with QTiles in QGIS

About the project:

This project is part of an internship assignment which aimed at creating tiled basemaps for the KNMI geospatial infrastructure. The data and tools used to create the basemaps are open-source. Therefore, this project and the basemaps are reproducible for everyone who wants to create simple basemaps (raster tiled basemaps) from free vector data!

About Natural Earth:

Natural Earth is a public domain map dataset available at 1:10m, 1:50m, and 1:110 million scales. Featuring tightly integrated vector and raster data, with Natural Earth it is possible to make a variety of visually pleasing, well-crafted maps with cartography or GIS software. In this project, vector datasets were downloaded for styling in a QGIS project before finally generating raster tiles with the QTiles plugin.

Natural Earth Data can be downloaded from the official website: <http://www.naturalearthdata.com/downloads/>

About QTiles plugin in QGIS:

The QTiles plugin generates raster tiles from QGIS project for selected zoom levels and tile naming convention (Slippy Map or TMS). It can package tiles for variety of formats and applications. For instance, it can export tiles in a directory structure or in a MBTiles file. Currently there is no release of QTiles plugin for QGIS 3.0. It was designed for QGIS version 1.9.0 and higher. In this project QGIS 2.18.16 was used on Linux Fedora 26.

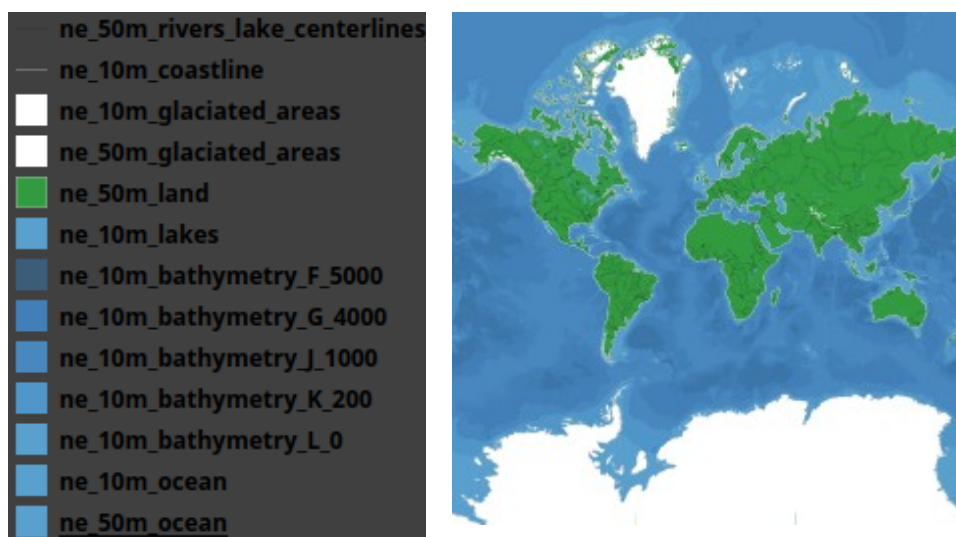
The plugin is available via official repository:

<https://plugins.qgis.org/plugins/qtiles/>

For developers there is also a Github repository:

<https://github.com/nextgis/QTiles>

Basemap 1: WorldMap



Data (shapefiles) used for this basemap:

1) 50m Physical, Rivers + lake centerlines:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip (389.27 KB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #000000, Transparency 90%.

2) 10m Physical, Coastline (includes major islands):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_coastline.zip (2.93 MB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #b8b8b8, Transparency 50%.

3) 10m Physical, Lakes:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip (1.74 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

4) 10m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip (1.57 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

5) 50m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip (211.39 KB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

6) 50m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
(446.45 KB)

Style: Simple Fill, Color: #329b3f. Outline: Solid line, Color: #b8b8b8, Width: 0.260000 millimeter.

7) 10m Physical, Bathymetry 5000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_F_5000.zip (2.72 MB)

Style: Simple Fill, Color: #386f9, Transparency 40%. Set outline to transparent.

8) 10m Physical, Bathymetry 4000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_G_4000.zip (3.43 MB)

Style: Simple Fill, Color: #427fb8. Set outline to transparent.

9) 10m Physical, Bathymetry 1000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_J_1000.zip (741.08 KB)

Style: Simple Fill, Color: #4988be. Set outline to transparent.

10) 10m Physical, Bathymetry 200m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_K_200.zip (1.14 MB)

Style: Simple Fill, Color: #5096c9. Set outline to transparent.

11) 10m Physical, Bathymetry 0m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip (2.86 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

12) 10m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
(3.48 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

13) 50m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
(450.91 KB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

Tutorial WorldMap QTiles:

Step 1: Download Natural Earth data

Download the shapefiles (in .zip format) from the website of Natural Earth: <http://www.naturalearthdata.com/downloads/>. Create a folder “WorldMap” and a subfolder “Data”. Import the downloaded .zip files into the “Data” subfolder. Afterwards, unzip all the .zip files.

```
mkdir -p WorldMap/Data
cd WorldMap/Data
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_coastline.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_F_5000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_G_4000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_J_1000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_K_200.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
unzip ne_50m_rivers_lake_centerlines.zip
unzip ne_10m_coastline.zip
unzip ne_10m_lakes.zip
unzip ne_10m_glaciated_areas.zip
unzip ne_50m_glaciated_areas.zip
unzip ne_50m_land.zip
unzip ne_10m_bathymetry_F_5000.zip
unzip ne_10m_bathymetry_G_4000.zip
unzip ne_10m_bathymetry_J_1000.zip
unzip ne_10m_bathymetry_K_200.zip
unzip ne_10m_bathymetry_L_0.zip
unzip ne_10m_ocean.zip
unzip ne_50m_ocean.zip
```

Step 2: Create a QGIS project

Run QGIS Desktop and create a new project (CTRL+N). Save the project as WorldMap.qgs in the WorldMap folder created earlier.

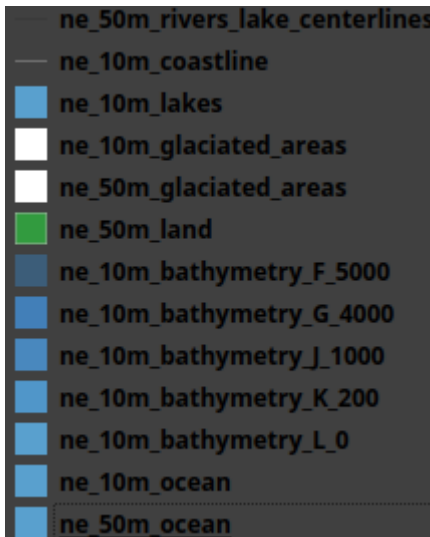
Step 3: Add Layers in the QGIS project

Add all shapefiles to the QGIS project: Layer → Add Layer → Add Vector Layer (CTRL+SHIFT+V). Choose the shapefiles in the “Data” subfolder.

Step 4: Put the Layers in the correct order

Place the layers in the correct order. From top to bottom:

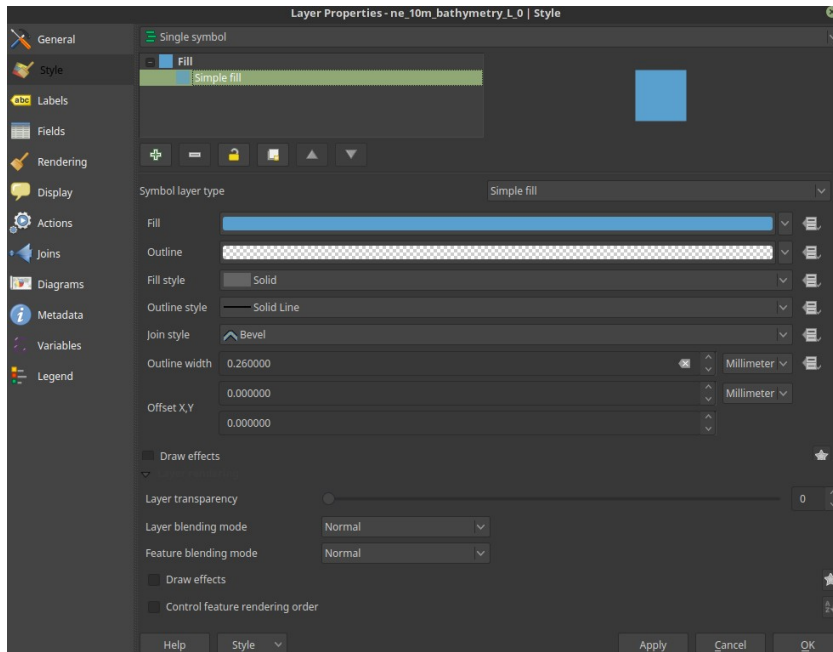
- ne_50m_rivers_lake_centerlines
- ne_10m_coastline
- ne_10m_lakes
- ne_10m_glaciated_areas
- ne_50m_glaciated_areas
- ne_50m_land
- ne_10_bathymetry_F_5000
- ne_10_bathymetry_G_4000
- ne_10_bathymetry_J_1000
- ne_10_bathymetry_K_200
- ne_10_bathymetry_L_0
- ne_10m_ocean4
- ne_50m_ocean



Step 5: Apply styles

Apply styling. Properties → Style. Right click on the layer and select properties, or simply double click on the layer.

- ne_50m_rivers_lake_centerlines: Simple Line, Solid, Width: 0.260000 millimeter, Color: #000000, Transparency 90%.
- ne_10m_coastline: Simple Line, Solid, Width: 0.260000 millimeter, Color: #b8b8b8, Transparency 50%.
- ne_10m_lakes: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_10m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_50m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_50m_land: Simple Fill, Color: #329b3f. Outline: Solid line, Color: #b8b8b8, Width: 0.260000 millimeter.
- ne_10_bathymetry_F_5000: Simple Fill, Color: #386f9, Transparency 40%. Set outline to transparent.
- ne_10_bathymetry_G_4000: Simple Fill, Color: #427fb8. Set outline to transparent.
- ne_10_bathymetry_J_1000: Simple Fill, Color: #4988be. Set outline to transparent.
- ne_10_bathymetry_K_200: Simple Fill, Color: #5096c9. Set outline to transparent.
- ne_10_bathymetry_L_0: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_10m_ocean: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_50m_ocean: Simple Fill, Color: #59a0ce. Set outline to transparent.



Step 6: Generate raster tiles with QTiles plugin

Open the QTiles plugin: Plugins → QTiles (CTRL+T).

Output: Select Directory to export the raster tiles as a directory structure.

Extent: Set desired geographic extent of the map:

Canvas extent — current canvas extent will be used.

Full extent — full extent of all project layers will be used

Layer extent — output extent will be the same as extent of the selected layer

We will select Full extent to take into account all project layers for the generation of the tiles.

Zoom: Set the zoom levels. The more zoomlevels, the more detail on the deeper zoom levels, however more tiles needed which will slow the process and which takes more size. In this case, a maximum zoom of 6 will do (5461 tiles, approximately: 54 MB). A zoom level of 9 will give a better user experience, however the total size of the tiles is approximately 1 GB.

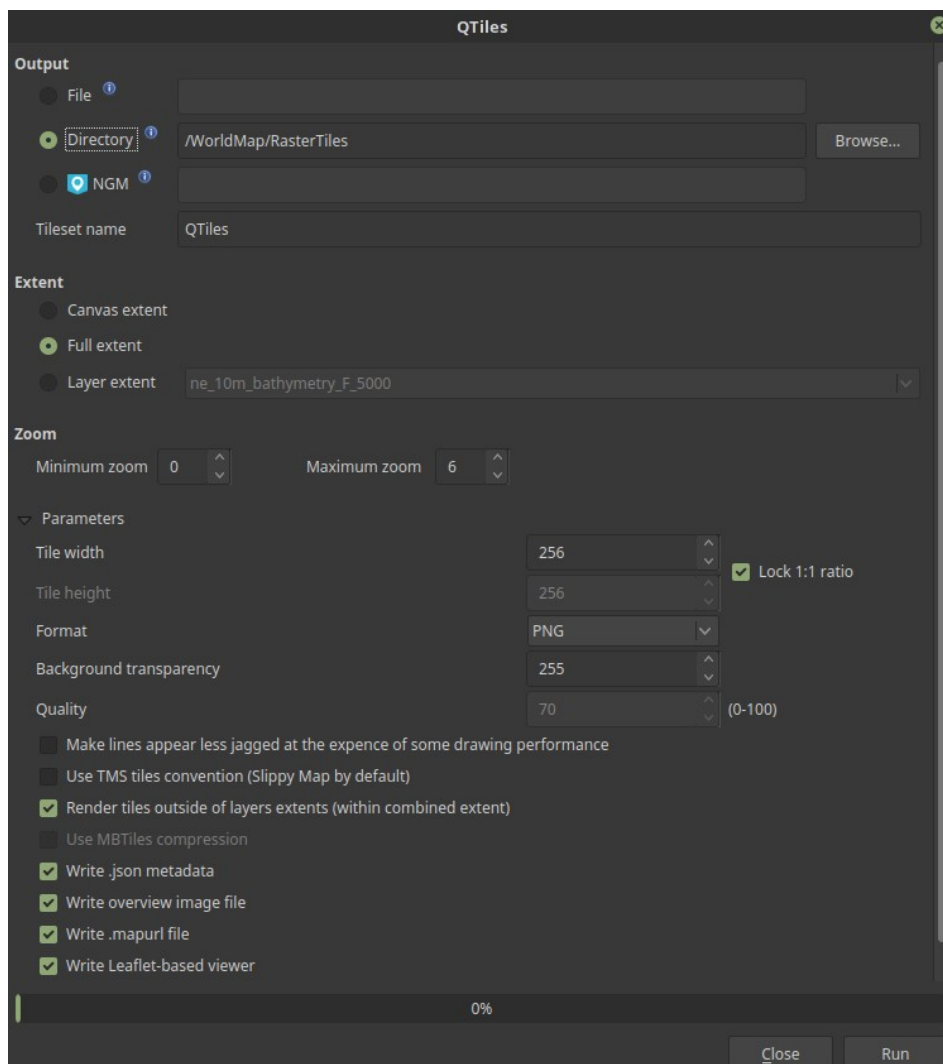
More about zoomlevels: https://wiki.openstreetmap.org/wiki/Zoom_levels

Parameters: Set the tile size. 256X256 pixels is used for slippy maps. Choose the format: PNG. Select other wished options.

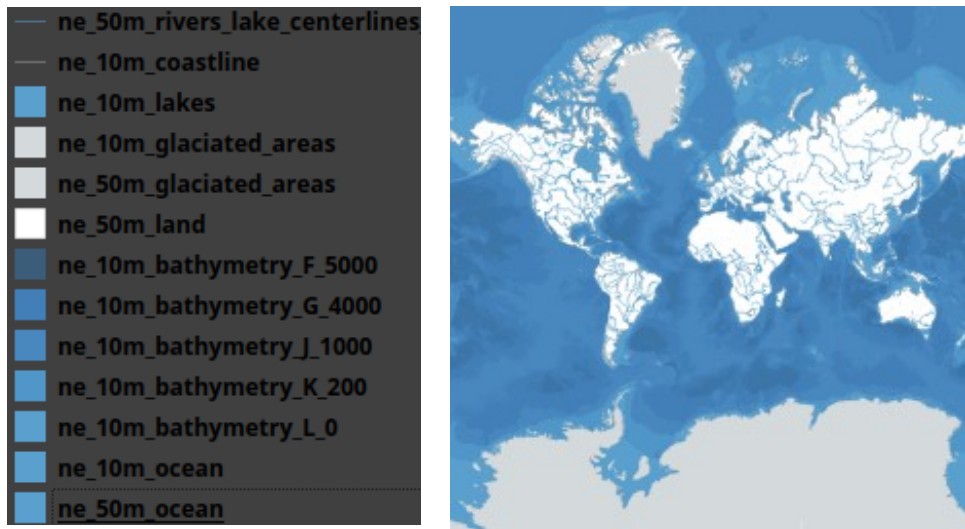
Recommended is to write Leaflet-based viewer to check the result once the tiles are created.

More about slippy maps: https://en.wikipedia.org/wiki/Tiled_web_map/

Press Run to start the tile generation. Once the process is completed, open the leaflet-based viewer QTiles.html in the browser to check if the tiles are rendered correctly.



Basemap 2: WorldMap_Light



Data (shapefiles) used for this basemap:

1) 50m Physical, Rivers + lake centerlines:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip (389.27 KB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #000000, Transparency 90%.

2) 10m Physical, Coastline (includes major islands):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_coastline.zip (2.93 MB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #b8b8b8, Transparency 50%.

3) 10m Physical, Lakes:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip (1.74 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

4) 10m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip (1.57 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

5) 50m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip (211.39 KB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

6) 50m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
(446.45 KB)

Style: Simple Fill, Color: #329b3f. Outline: Solid line, Color: #b8b8b8, Width: 0.260000 millimeter.

7) 10m Physical, Bathymetry 5000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_F_5000.zip (2.72 MB)

Style: Simple Fill, Color: #386f9, Transparency 40%. Set outline to transparent.

8) 10m Physical, Bathymetry 4000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_G_4000.zip (3.43 MB)

Style: Simple Fill, Color: #427fb8. Set outline to transparent.

9) 10m Physical, Bathymetry 1000m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_J_1000.zip (741.08 KB)

Style: Simple Fill, Color: #4988be. Set outline to transparent.

10) 10m Physical, Bathymetry 200m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_K_200.zip (1.14 MB)

Style: Simple Fill, Color: #5096c9. Set outline to transparent.

11) 10m Physical, Bathymetry 0m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip (2.86 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

12) 10m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
(3.48 MB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

13) 50m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
(450.91 KB)

Style: Simple Fill, Color: #59a0ce. Set outline to transparent.

Tutorial Basemap 2: WorldMap_Light QTiles:

Step 1: Download Natural Earth data

Download the shapefiles (in .zip format) from the website of Natural Earth: <http://www.naturalearthdata.com/downloads/>. Create a folder “WorldMap_Light” and a subfolder “Data”. Import the downloaded .zip files into the “Data” subfolder. Afterwards, unzip all the .zip files.

```
mkdir -p WorldMap_Light/Data
cd WorldMap_Light/Data
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_coastline.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_F_5000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_G_4000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_J_1000.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_K_200.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
unzip ne_50m_rivers_lake_centerlines.zip
unzip ne_10m_coastline.zip
unzip ne_10m_lakes.zip
unzip ne_10m_glaciated_areas.zip
unzip ne_50m_glaciated_areas.zip
unzip ne_50m_land.zip
unzip ne_10m_bathymetry_F_5000.zip
unzip ne_10m_bathymetry_G_4000.zip
unzip ne_10m_bathymetry_J_1000.zip
unzip ne_10m_bathymetry_K_200.zip
unzip ne_10m_bathymetry_L_0.zip
unzip ne_10m_ocean.zip
unzip ne_50m_ocean.zip
```

Step 2: Create a QGIS project

Run QGIS Desktop and create a new project (CTRL+N). Save the project as WorldMap_Light.qgs in the WorldMap_Light folder created earlier.

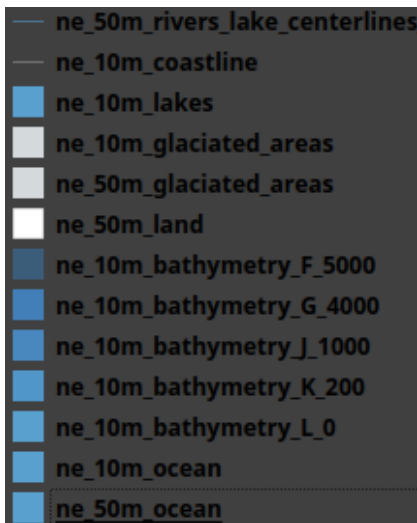
Step 3: Add Layers in the QGIS project

Add all shapefiles to the QGIS project: Layer → Add Layer → Add Vector Layer (CTRL+SHIFT+V). Choose the shapefiles in the “Data” subfolder.

Step 4: Put the Layers in the correct order

Place the layers in the correct order. From top to bottom:

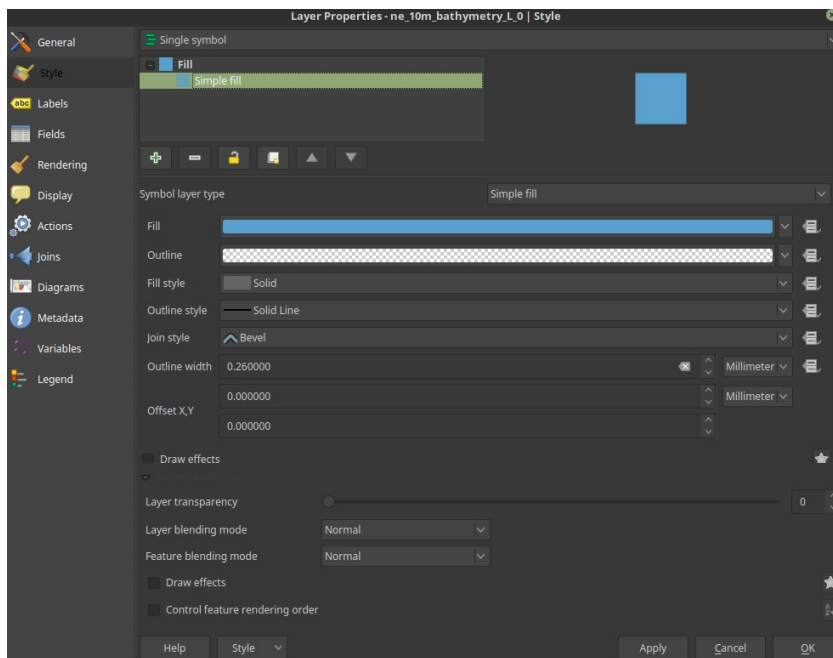
- ne_50m_rivers_lake_centerlines
- ne_10m_coastline
- ne_10m_lakes
- ne_10m_glaciated_areas
- ne_50m_glaciated_areas
- ne_50m_land
- ne_10_bathymetry_F_5000
- ne_10_bathymetry_G_4000
- ne_10_bathymetry_J_1000
- ne_10_bathymetry_K_200
- ne_10_bathymetry_L_0
- ne_10m_ocean
- ne_50m_ocean



Step 5: Apply styles

Apply styling. Properties → Style. Right click on the layer and select properties, or simply double click on the layer.

- ne_50m_rivers_lake_centerlines: Simple Line, Solid, Width: 0.260000 millimeter, Color: #59a0ce, Transparency 40%.
- ne_10m_coastline: Simple Line, Solid, Width: 0.260000 millimeter, Color: #b8b8b8, Transparency 50%.
- ne_10m_lakes: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_10m_glaciated_areas: Simple Fill, Color: #d4d9dc. Set outline to transparent.
- ne_50m_glaciated_areas: Simple Fill, Color: #d4d9dc. Set outline to transparent.
- ne_50m_land : Simple Fill, Color: #ffffff. Outline: Solid line, Color: #b8b8b8, Width: 0.260000 millimeter.
- ne_10_bathymetry_F_5000: Simple Fill, Color: #386f9, Transparency 40%. Set outline to transparent.
- ne_10_bathymetry_G_4000: Simple Fill, Color: #427fb8. Set outline to transparent.
- ne_10_bathymetry_J_1000: Simple Fill, Color: #4988be. Set outline to transparent.
- ne_10_bathymetry_K_200: Simple Fill, Color: #5096c9. Set outline to transparent.
- ne_10_bathymetry_L_0: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_10m_ocean: Simple Fill, Color: #59a0ce. Set outline to transparent.
- ne_50m_ocean: Simple Fill, Color: #59a0ce. Set outline to transparent.



Step 6: Generate raster tiles with QTiles plugin

Open the QTiles plugin: Plugins → QTiles (CTRL+T).

Output: Select Directory to export the raster tiles as a directory structure.

Extent: Set desired geographic extent of the map:

Canvas extent — current canvas extent will be used.

Full extent — full extent of all project layers will be used

Layer extent — output extent will be the same as extent of the selected layer

We will select Full extent to take into account all project layers for the generation of the tiles.

Zoom: Set the zoom levels. The more zoomlevels, the more detail on the deeper zoom levels, however more tiles needed which will slow the process and which takes more size. In this case, a maximum zoom of 6 will do (5461 tiles, approximately: 54 MB). A zoom level of 9 will give a better user experience, however the total size of the tiles is approximately 1 GB.

More about zoomlevels: https://wiki.openstreetmap.org/wiki/Zoom_levels

Parameters: Set the tile size. 256X256 pixels is used for slippy maps. Choose the format: PNG. Select other wished options.

Recommended is to write Leaflet-based viewer to check the result once the tiles are created.

More about slippy maps: https://en.wikipedia.org/wiki/Tiled_web_map/

Press Run to start the tile generation. Once the process is completed, open the leaflet-based viewer QTiles.html in the browser to check if the tiles are rendered correctly.

QTiles

Output

File

Directory

NGM

/WorldMap_Light/RasterTiles

Browse...

Tileset name

QTiles

Extent

Canvas extent

Full extent

Layer extent

ne_10m_bathymetry_F_5000

Zoom

Minimum zoom

0

Maximum zoom

6

Parameters

Tile width

256

Tile height

256

Format

PNG

Background transparency

255

Quality

70

Lock 1:1 ratio

(0-100)

Make lines appear less jagged at the expence of some drawing performance

Use TMS tiles convention (Slippy Map by default)

Render tiles outside of layers extents (within combined extent)

Use MBTiles compression

Write .json metadata

Write overview image file

Write .mapurl file

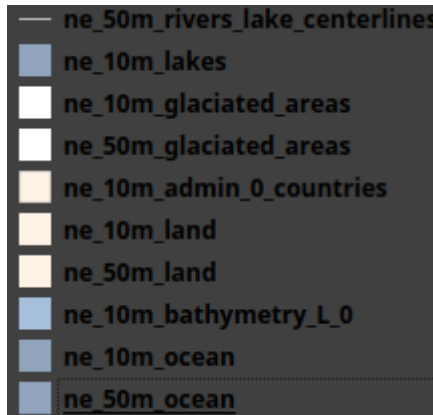
Write Leaflet-based viewer

0%

Close

Run

Basemap 3: WorldMap_Canvas



Data (shapefiles) used for this basemap:

1) 50m Physical, Rivers + lake centerlines:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip (389.27 KB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc.

2) 10m Physical, Lakes:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip (1.74 MB)

Style: Simple Fill, Color: #a5bfdd, Transparency 20%.

3) 10m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip (1.57 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

4) 50m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip (211.39 KB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

5) 10m Cultural, Admin 0 – Countries:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip (5.12 MB)

Style: Simple Fill, Color: #fff2e6. Outline: Solid line, Color: #b3b3b3, Width: 0.260000 millimeter.

6) 10m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
(3.32 MB)

Style: Simple Fill, Color: #fff2e6. Set outline transparent.

7) 50m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
(446.45 KB)

Style: Simple Fill, Color: #fff2e6. Set outline transparent.

8) 10m Physical, Bathymetry 0m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip (2.86 MB)

Style: Simple Fill, Color: #a5bfdd. Set outline to transparent.

9) 10m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
(3.48 MB)

Style: Simple Fill, Color: #a5bfdd. Set outline to transparent.

10) 50m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
(450.91 KB)

Style: Simple Fill, Color: #a5bfdd. Set outline to transparent.

Tutorial Basemap 3: WorldMap_Canvas QTiles:

Step 1: Download Natural Earth data

Download the shapefiles (in .zip format) from the website of Natural Earth: <http://www.naturalearthdata.com/downloads/>. Create a folder “WorldMap_Canvas” and a subfolder “Data”. Import the downloaded .zip files into the “Data” subfolder. Afterwards, unzip all the .zip files.

```
mkdir -p WorldMap_Canvas/Data
cd WorldMap_Canvas/Data
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
unzip ne_50m_rivers_lake_centerlines.zip
unzip ne_10m_lakes.zip
unzip ne_10m_glaciated_areas.zip
unzip ne_50m_glaciated_areas.zip
unzip ne_10m_admin_0_countries.zip
unzip ne_10m_land.zip
unzip ne_50m_land.zip
unzip ne_10m_bathymetry_L_0.zip
unzip ne_10m_ocean.zip
unzip ne_50m_ocean.zip
```

Step 2: Create a QGIS project

Run QGIS Desktop and create a new project (CTRL+N). Save the project as WorldMap_Canvas.qgs in the WorldMap_Canvas folder created earlier.

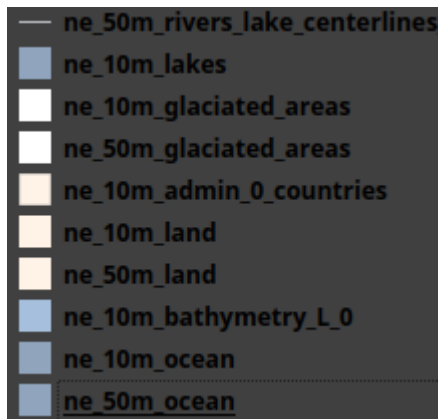
Step 3: Add Layers in the QGIS project

Add all shapefiles to the QGIS project: Layer → Add Layer → Add Vector Layer (CTRL+SHIFT+V). Choose the shapefiles in the “Data” subfolder.

Step 4: Put the Layers in the correct order

Place the layers in the correct order. From top to bottom:

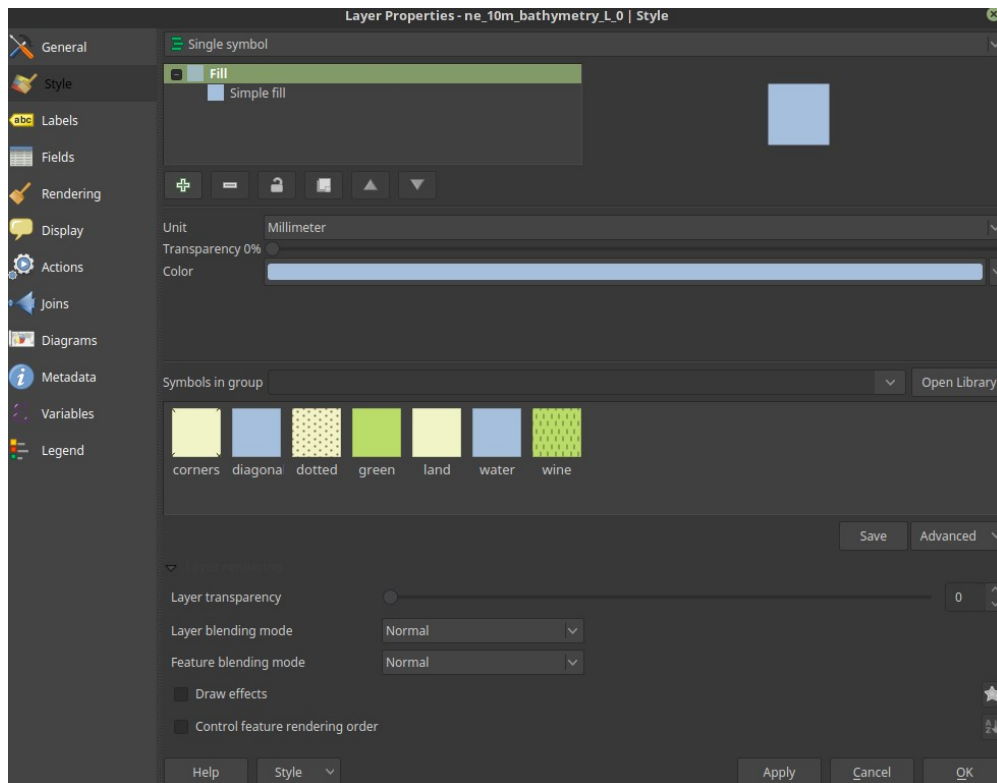
- ne_50m_rivers_lake_centerlines
- ne_10m_lakes
- ne_10m_glaciated_areas
- ne_50m_glaciated_areas
- ne_10m_admin_0_countries
- ne_10m_land
- ne_50m_land
- ne_10_bathymetry_L_0
- ne_10m_ocean
- ne_50m_ocean



Step 5: Apply styles

Apply styling. Properties → Style. Right click on the layer and select properties, or simply double click on the layer.

- ne_50m_rivers_lake_centerlines: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc.
- ne_10m_lakes: Simple Fill, Color: #a5bfdd, Transparency 20%.
- ne_10m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_50m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_10m_admin_0_countries: Simple Fill, Color: #fff2e6. Outline: Solid line, Color: #b3b3b3, Width: 0.260000 millimeter.
- ne_10m_land: Simple Fill, Color: #fff2e6. Set outline transparent.
- ne_50m_land: Simple Fill, Color: #fff2e6. Set outline transparent.
- ne_10_bathymetry_L_0: Simple Fill, Color: #a5bfdd. Set outline to transparent.
- ne_10m_ocean: Simple Fill, Color: #a5bfdd. Set outline to transparent.
- ne_50m_ocean: Simple Fill, Color: #a5bfdd. Set outline to transparent.



Step 6: Generate raster tiles with QTiles plugin

Open the QTiles plugin: Plugins → QTiles (CTRL+T).

Output: Select Directory to export the raster tiles as a directory structure.

Extent: Set desired geographic extent of the map:

Canvas extent — current canvas extent will be used.

Full extent — full extent of all project layers will be used

Layer extent — output extent will be the same as extent of the selected layer

We will select Full extent to take into account all project layers for the generation of the tiles.

Zoom: Set the zoom levels. The more zoomlevels, the more detail on the deeper zoom levels, however more tiles needed which will slow the process and which takes more size. In this case, a maximum zoom of 6 will do (5461 tiles, approximately: 54 MB). A zoom level of 9 will give a better user experience, however the total size of the tiles is approximately 1 GB.

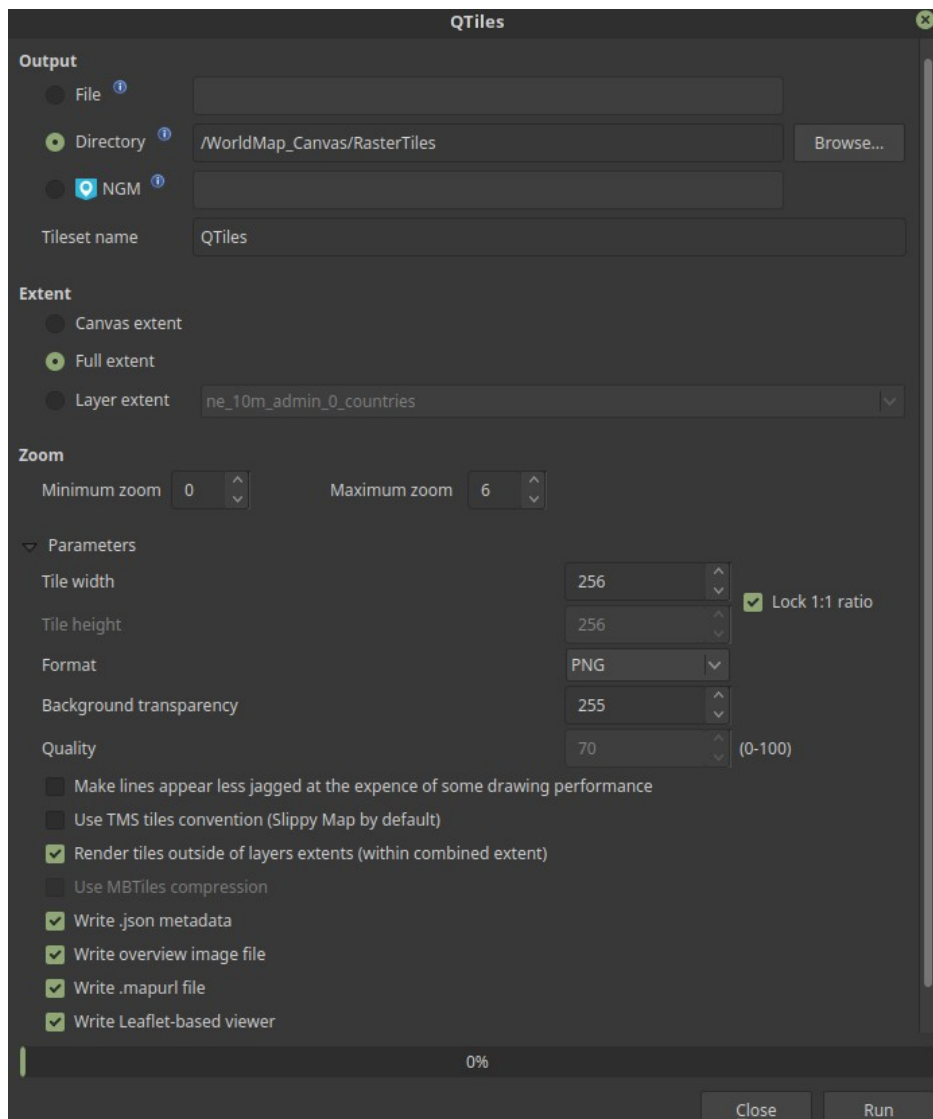
More about zoomlevels: https://wiki.openstreetmap.org/wiki/Zoom_levels

Parameters: Set the tile size. 256X256 pixels is used for slippy maps. Choose the format: PNG. Select other wished options.

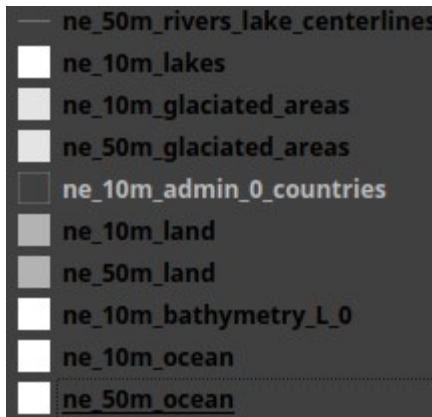
Recommended is to write Leaflet-based viewer to check the result once the tiles are created.

More about slippy maps: https://en.wikipedia.org/wiki/Tiled_web_map/

Press Run to start the tile generation. Once the process is completed, open the leaflet-based viewer QTiles.html in the browser to check if the tiles are rendered correctly.



Basemap 4: WorldMap_GreyCanvas



Data (shapefiles) used for this basemap:

1) 50m Physical, Rivers + lake centerlines:

http://www.natureearthdata.com/http://www.natureearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip (389.27 KB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc, Transparency 60%.

2) 10m Physical, Lakes:

http://www.natureearthdata.com/http://www.natureearthdata.com/download/10m/physical/ne_10m_lakes.zip (1.74 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

3) 10m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.natureearthdata.com/http://www.natureearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip (1.57 MB)

Style: Simple Fill, Color: #e4e4e4. Set outline to transparent.

4) 50m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.natureearthdata.com/http://www.natureearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip (211.39 KB)

Style: Simple Fill, Color: #e4e4e4. Set outline to transparent.

5) 10m Cultural, Admin 0 – Countries:

http://www.natureearthdata.com/http://www.natureearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip (5.12 MB)

Style: Simple Fill: Transparent. Outline: Solid line, Color: #848484, Width: 0.260000 millimeter.

6) 10m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
(3.32 MB)

Style: Simple Fill, Color: #b3b3b3. Set outline transparent.

7) 50m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
(446.45 KB)

Style: Simple Fill, Color: #b3b3b3. Set outline transparent.

8) 10m Physical, Bathymetry 0m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip (2.86 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

9) 10m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
(3.48 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

10) 50m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
(450.91 KB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

Tutorial Basemap 4: WorldMap_GreyCanvas QTiles:

Step 1: Download Natural Earth data

Download the shapefiles (in .zip format) from the website of Natural Earth: <http://www.naturalearthdata.com/downloads/>. Create a folder “WorldMap_GreyCanvas” and a subfolder “Data”. Import the downloaded .zip files into the “Data” subfolder. Afterwards, unzip all the .zip files.

```
mkdir -p WorldMap_GreyCanvas/Data
cd WorldMap_GreyCanvas/Data
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
unzip ne_50m_rivers_lake_centerlines.zip
unzip ne_10m_lakes.zip
unzip ne_10m_glaciated_areas.zip
unzip ne_50m_glaciated_areas.zip
unzip ne_10m_admin_0_countries.zip
unzip ne_10m_land.zip
unzip ne_50m_land.zip
unzip ne_10m_bathymetry_L_0.zip
unzip ne_10m_ocean.zip
unzip ne_50m_ocean.zip
```

Step 2: Create a QGIS project

Run QGIS Desktop and create a new project (CTRL+N). Save the project as WorldMap_GreyCanvas.qgs in the WorldMap_GreyCanvas folder created earlier.

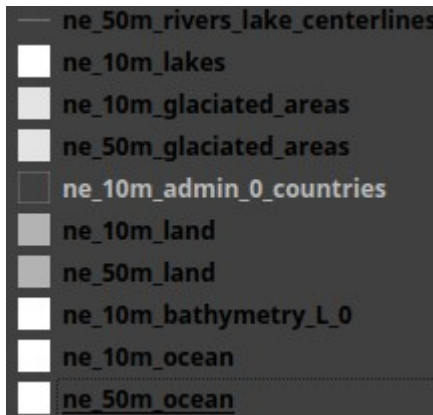
Step 3: Add Layers in the QGIS project

Add all shapefiles to the QGIS project: Layer → Add Layer → Add Vector Layer (CTRL+SHIFT+V). Choose the shapefiles in the “Data” subfolder.

Step 4: Put the Layers in the correct order

Place the layers in the correct order. From top to bottom:

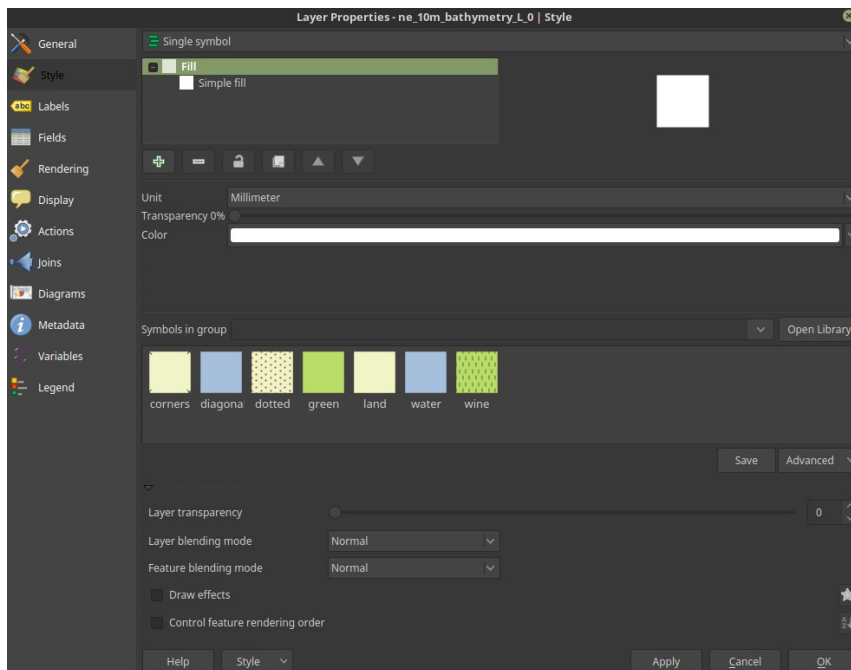
- ne_50m_rivers_lake_centerlines
- ne_10m_lakes
- ne_10m_glaciated_areas
- ne_50m_glaciated_areas
- ne_10m_admin_0_countries
- ne_10m_land
- ne_50m_land
- ne_10_bathymetry_L_0
- ne_10m_ocean
- ne_50m_ocean



Step 5: Apply styles

Apply styling. Properties → Style. Right click on the layer and select properties, or simply double click on the layer.

- ne_50m_rivers_lake_centerlines: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc, Transparency 60%.
- ne_10m_lakes: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_10m_glaciated_areas: Simple Fill, Color: #e4e4e4. Set outline to transparent.
- ne_50m_glaciated_areas: Simple Fill, Color: #e4e4e4. Set outline to transparent.
- ne_10m_admin_0_countries: Simple Fill: Transparent. Outline: Solid line, Color: #848484, Width: 0.260000 millimeter.
- ne_10m_land: Simple Fill, Color: #b3b3b3. Set outline transparent.
- ne_50m_land: Simple Fill, Color: #b3b3b3. Set outline transparent.
- ne_10m_bathymetry_L_0: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_10m_ocean: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_50m_ocean: Simple Fill, Color: #ffffff. Set outline to transparent.



Step 6: Generate raster tiles with QTiles plugin

Open the QTiles plugin: Plugins → QTiles (CTRL+T).

Output: Select Directory to export the raster tiles as a directory structure.

Extent: Set desired geographic extent of the map:

Canvas extent — current canvas extent will be used.

Full extent — full extent of all project layers will be used

Layer extent — output extent will be the same as extent of the selected layer

We will select Full extent to take into account all project layers for the generation of the tiles.

Zoom: Set the zoom levels. The more zoomlevels, the more detail on the deeper zoom levels, however more tiles needed which will slow the process and which takes more size. In this case, a maximum zoom of 6 will do (5461 tiles, approximately: 54 MB). A zoom level of 9 will give a better user experience, however the total size of the tiles is approximately 1 GB.

More about zoomlevels: https://wiki.openstreetmap.org/wiki/Zoom_levels

Parameters: Set the tile size. 256X256 pixels is used for slippy maps. Choose the format: PNG. Select other wished options. Recommended is to write Leaflet-based viewer to check the result once the tiles are created.

More about slippy maps: https://en.wikipedia.org/wiki/Tiled_web_map/

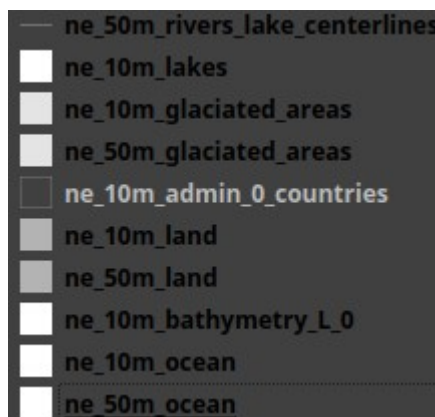
Press Run to start the tile generation. Once the process is completed, open the leaflet-based viewer QTiles.html in the browser to check if the tiles are rendered correctly.

The screenshot shows the QTiles application window with the following settings:

- Output:**
 - ☐ File
 - ☒ Directory: /WorldMap_GreyCanvas/RasterTiles (with a Browse... button)
 - ☐ NGM
 - Tilesset name: QTiles
- Extent:**
 - ☐ Canvas extent
 - ☒ Full extent
 - ☐ Layer extent: ne_10m_admin_0_countries
- Zoom:**
 - Minimum zoom: 0
 - Maximum zoom: 6
- Parameters:**
 - Tile width: 256
 - Tile height: 256
 - Format: PNG
 - Background transparency: 255
 - Quality: 70 (0-100)
 - ☐ Make lines appear less jagged at the expense of some drawing performance
 - ☐ Use TMS tiles convention (Slippy Map by default)
 - ☒ Render tiles outside of layers extents (within combined extent)
 - ☐ Use MBTiles compression
 - ☒ Write .json metadata
 - ☒ Write overview image file
 - ☒ Write .mapurl file
 - ☒ Write Leaflet-based viewer

At the bottom, there is a progress bar at 0% and two buttons: Close and Run.

Basemap 5: WorldMap_LightGreyCanvas



Data (shapefiles) used for this basemap:

1) 50m Physical, Rivers + lake centerlines:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip (389.27 KB)

Style: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc, Transparency 50%.

2) 10m Physical, Lakes:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip (1.74 MB)

Style: Simple Fill, Color: #d4d9dc. Set outline to transparent.

3) 10m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip (1.57 MB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

4) 50m Physical, Glaciated areas (includes glaciers and recently de-glaciated areas):

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip (211.39 KB)

Style: Simple Fill, Color: #ffffff. Set outline to transparent.

5) 10m Cultural, Admin 0 – Countries:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip (5.12 MB)

Style: Simple Fill, Color: #fafaf8, Transparency: 40%. Outline: Solid line, Color: #d4d9dc, Width: 0.260000 millimeter.

6) 10m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
(3.32 MB)

Style: Simple Fill, Color: #fafaf8, Transparency: 40%. Set outline transparent.

7) 50m Physical, Land:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
(446.45 KB)

Style: Simple Fill, Color: #fafaf8, Transparency: 40%. Set outline transparent.

8) 10m Physical, Bathymetry 0m:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip (2.86 MB)

Style: Simple Fill, Color: #d4d9dc. Set outline to transparent.

9) 10m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
(3.48 MB)

Style: Simple Fill, Color: #d4d9dc. Set outline to transparent.

10) 50m Physical, Ocean:

http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
(450.91 KB)

Style: Simple Fill, Color: #d4d9dc. Set outline to transparent.

Tutorial Basemap 5: WorldMap_LightGreyCanvas QTiles:

Step 1: Download Natural Earth data

Download the shapefiles (in .zip format) from the website of Natural Earth: <http://www.naturalearthdata.com/downloads/>. Create a folder “WorldMap_LightGreyCanvas” and a subfolder “Data”. Import the downloaded .zip files into the “Data” subfolder. Afterwards, unzip all the .zip files.

```
mkdir -p WorldMap_LightGreyCanvas/Data
cd WorldMap_LightGreyCanvas/Data
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_rivers_lake_centerlines.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_lakes.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_glaciated_areas.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_admin_0_countries.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_land.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_bathymetry_L_0.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/physical/ne_10m_ocean.zip
wget http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/50m/physical/ne_50m_ocean.zip
unzip ne_50m_rivers_lake_centerlines.zip
unzip ne_10m_lakes.zip
unzip ne_10m_glaciated_areas.zip
unzip ne_50m_glaciated_areas.zip
unzip ne_10m_admin_0_countries.zip
unzip ne_10m_land.zip
unzip ne_50m_land.zip
unzip ne_10m_bathymetry_L_0.zip
unzip ne_10m_ocean.zip
unzip ne_50m_ocean.zip
```

Step 2: Create a QGIS project

Run QGIS Desktop and create a new project (CTRL+N). Save the project as WorldMap_LightGreyCanvas.qgs in the WorldMap_LightGreyCanvas folder created earlier.

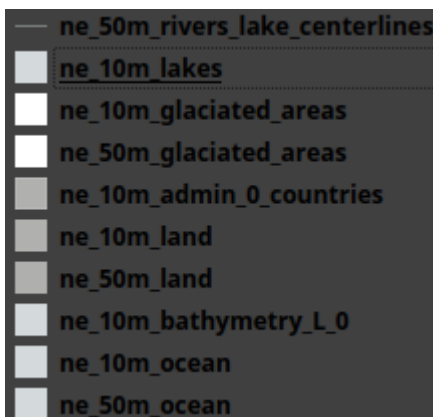
Step 2: Add Layers in the QGIS project

Add all shapefiles to the QGIS project: Layer → Add Layer → Add Vector Layer (CTRL+SHIFT+V). Choose the shapefiles in the “Data” subfolder.

Step 3: Put the Layers in the correct order

Place the layers in the correct order. From top to bottom:

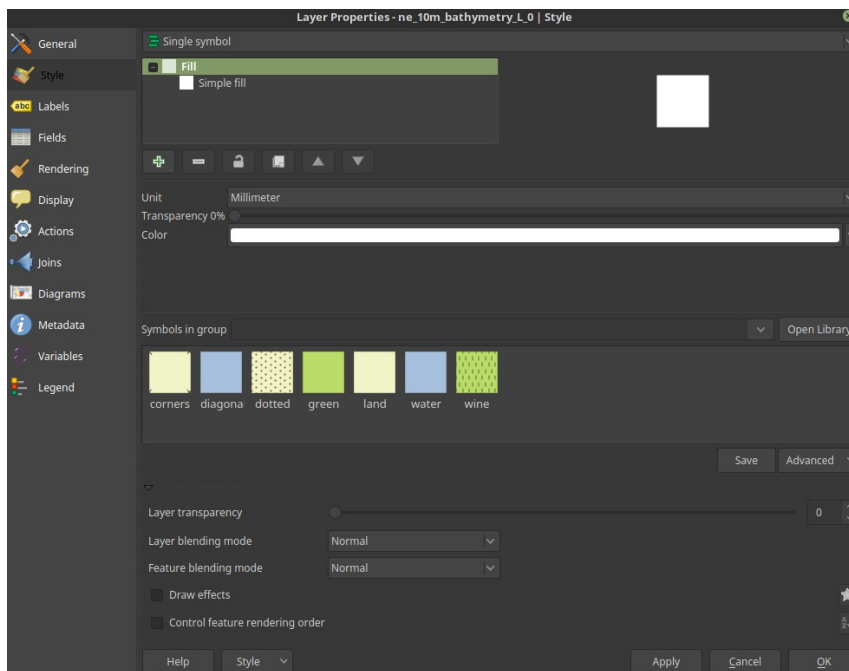
- ne_50m_rivers_lake_centerlines
- ne_10m_lakes
- ne_10m_glaciated_areas
- ne_50m_glaciated_areas
- ne_10m_admin_0_countries
- ne_10m_land
- ne_50m_land
- ne_10_bathymetry_L_0
- ne_10m_ocean
- ne_50m_ocean



Step 4: Apply styles

Apply styling. Properties → Style. Right click on the layer and select properties, or simply double click on the layer.

- ne_50m_rivers_lake_centerlines: Simple Line, Solid, Width: 0.260000 millimeter, Color: #d4d9dc, Transparency 50%.
- ne_10m_lakes: Simple Fill, Color: #d4d9dc. Set outline to transparent.
- ne_10m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_50m_glaciated_areas: Simple Fill, Color: #ffffff. Set outline to transparent.
- ne_10m_admin_0_countries: Simple Fill, Color: #fafaf8, Transparency: 40%. Outline: Solid line, Color: #d4d9dc, Width: 0.260000 millimeter.
- ne_10m_land: Simple Fill, Color: #fafaf8, Transparency: 40%. Set outline transparent.
- ne_50m_land: Simple Fill, Color: #fafaf8, Transparency: 40%. Set outline transparent.
- ne_10_bathymetry_L_0: Simple Fill, Color: #d4d9dc. Set outline to transparent.
- ne_10m_ocean: Simple Fill, Color: #d4d9dc. Set outline to transparent.
- ne_50m_ocean: Simple Fill, Color: #d4d9dc. Set outline to transparent.



Step 5: Generate raster tiles with QTiles plugin

Open the QTiles plugin: Plugins → QTiles (CTRL+T).

Output: Select Directory to export the raster tiles as a directory structure.

Extent: Set desired geographic extent of the map:

Canvas extent — current canvas extent will be used.

Full extent — full extent of all project layers will be used

Layer extent — output extent will be the same as extent of the selected layer

We will select Full extent to take into account all project layers for the generation of the tiles.

Zoom: Set the zoom levels. The more zoomlevels, the more detail on the deeper zoom levels, however more tiles needed which will slow the process and which takes more size. In this case, a maximum zoom of 6 will do (5461 tiles, approximately: 54 MB). A zoom level of 9 will give a better user experience, however the total size of the tiles is approximately 1 GB.

More about zoomlevels: https://wiki.openstreetmap.org/wiki/Zoom_levels

Parameters: Set the tile size. 256X256 pixels is used for slippy maps. Choose the format: PNG. Select other wished options. Recommended is to write Leaflet-based viewer to check the result once the tiles are created.

More about slippy maps: https://en.wikipedia.org/wiki/Tiled_web_map/

Press Run to start the tile generation. Once the process is completed, open the leaflet-based viewer QTiles.html in the browser to check if the tiles are rendered correctly.

QTiles

Output

File

Directory

/WorldMap_LightGreyCanvas/RasterTiles

Browse...

NGM

Tileset name

QTiles

Extent

Canvas extent

Full extent

Layer extent

ne_10m_admin_0_countries

Zoom

Minimum zoom

0

Maximum zoom

6

Parameters

Tile width

256

Tile height

256

Format

PNG

Background transparency

255

Quality

70

(0-100)

Lock 1:1 ratio

Make lines appear less jagged at the expeance of some drawing performance

Use TMS tiles convention (Slippy Map by default)

Render tiles outside of layers extents (within combined extent)

Use MBTiles compression

Write .json metadata

Write overview image file

Write .mapurl file

Write Leaflet based viewer

0%

Close

Run