GRASS GIS 7 workshop

OSGeo-Live
Intro QGIS-Processing-GRASS GIS

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OSGeo Ireland – 1st National Symposium 2017

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http://www.mundialis.de

Session Objectives

- Starting OSGeo-Live
  - ... of GRASS GIS 7
  - ... of QGIS
- Download of related course data
- Using GRASS GIS in QGIS through “Processing”

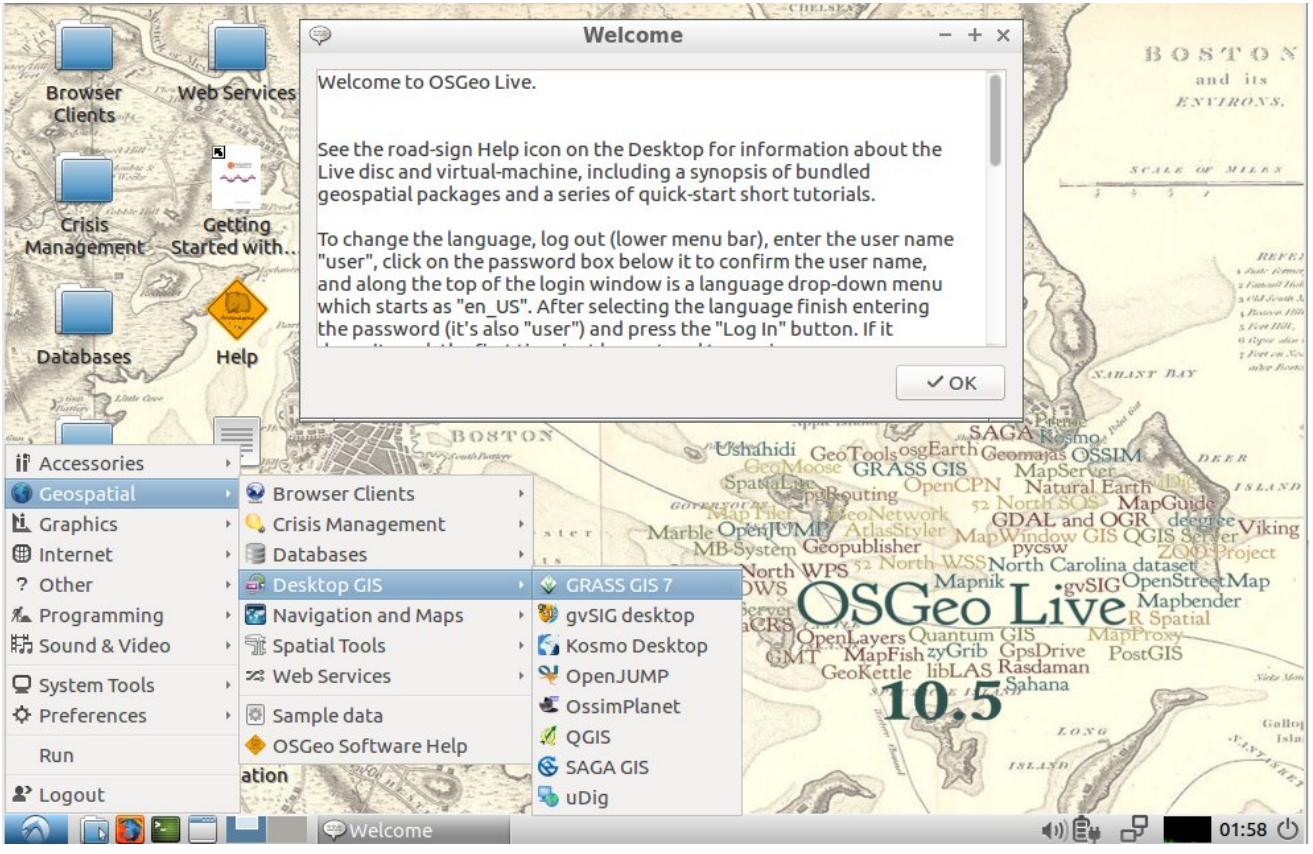
Preparation – Starting OSGeoLive

OSGeo-Live, ISO available from:
http://download.osgeo.org/livedvd

Copy to **DVD or USB flash drive**, then boot from flash drive;
or run it in a **Virtual Machine** environment.

See: https://live.osgeo.org/en/quickstart/osgeolive_quickstart.html

...sit back while the system boots up...



Preparation – Starting OSGeoLive

Optional: Configuration of region settings:
OSGeo-Live Internationalisation Quickstart:

https://live.osgeo.org/en/quickstart/internationalisation_quickstart.html

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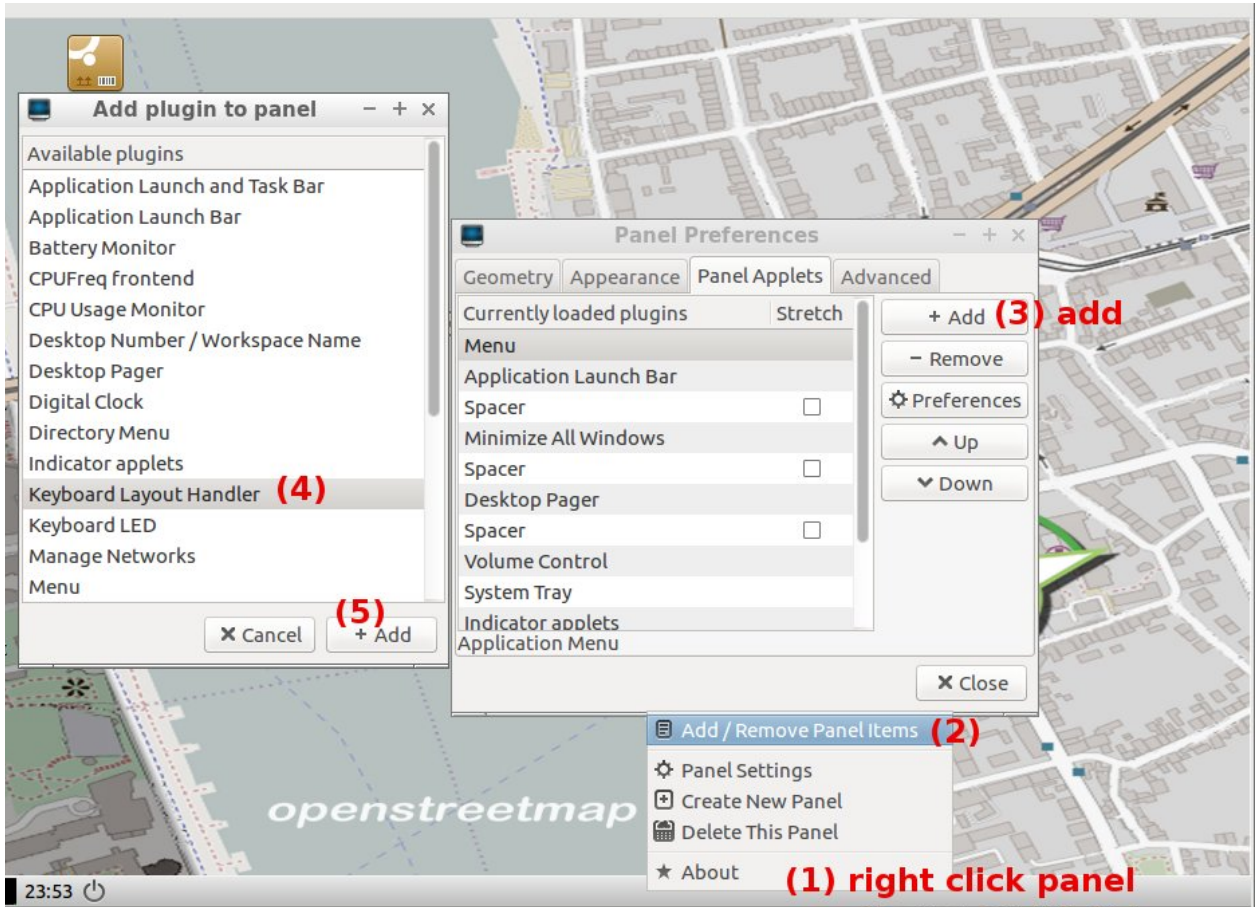
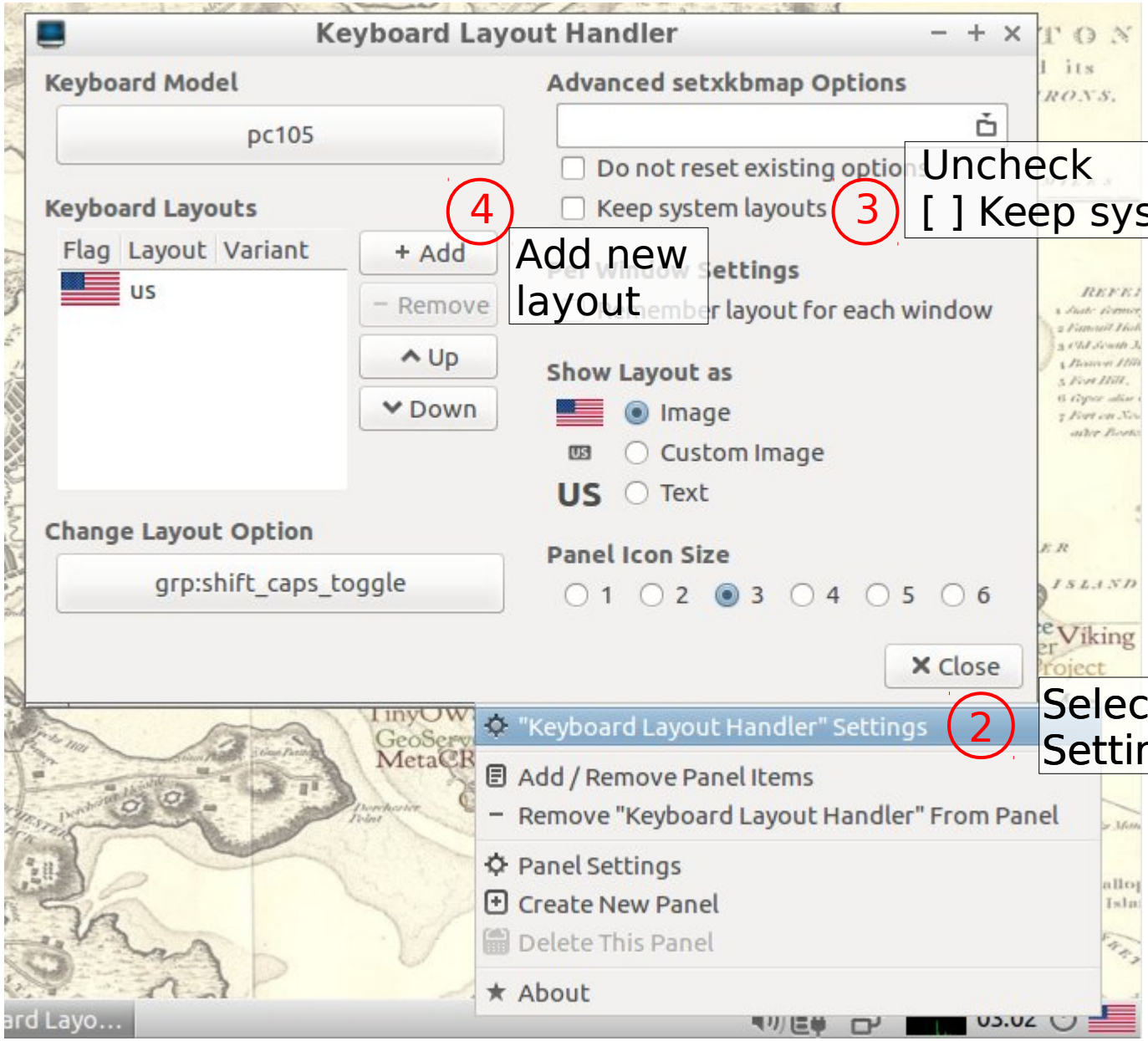
Keyboard layout switcher:

To add a “flag” icon to the lower menu panel, do the following steps:



Preparation – Starting OSGeoLive

Optional: Configuration of **keyboard layout**



Preparation – Starting OSGeoLive

Configuration of region settings if needed:
OSGeo-Live Internationalisation Quickstart (language + keyboard layout):
https://live.osgeo.org/en/quickstart/internationalisation_quickstart.html

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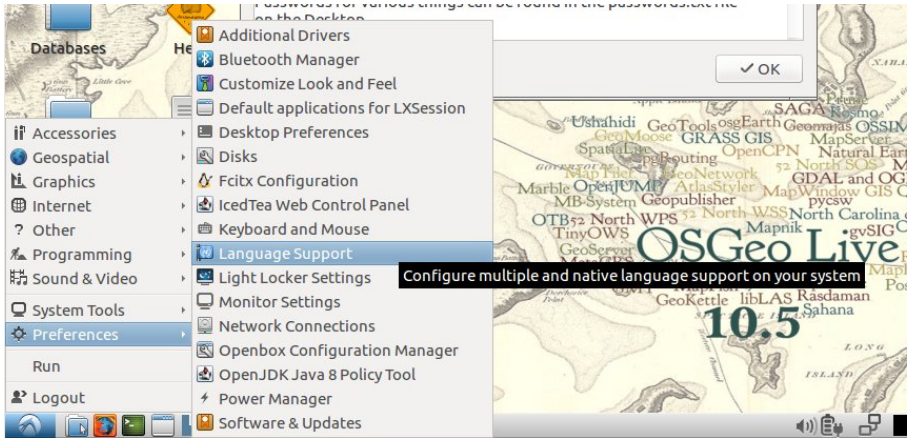
Update of **language settings**:
For the **menus**: Logout > Change language in top menu > Login again.

Authentication:
User: user
Password: user

Missing language?
Set it via the **main applications menu**
Preferences
> Language Support
> Install/Remove languages



Preparation – Web Download of course data sets

Please create a “gis_data” directory for the course data:

```
cd $HOME
mkdir gis_data
```

Download data from:

https://www.mundialis.de/workshops/osgeo_ireland2017/

```
folder: north_carolina/
- nc_zipcodes_wake_SHP.zip          308 KB
- elev_ncstate_500m_tif.zip         1.8 MB
- elev_lid792_1m_tif.zip            1.7 MB
  [...]
```

Save these **3 files** on your computer into the new “gis_data” directory and unpack them.
The other files we'll download later.

The maps are located in North Carolina, USA.

OSGeo-live: North Carolina sample data set

Create a “gis_data” directory for the course data (this or file manager):

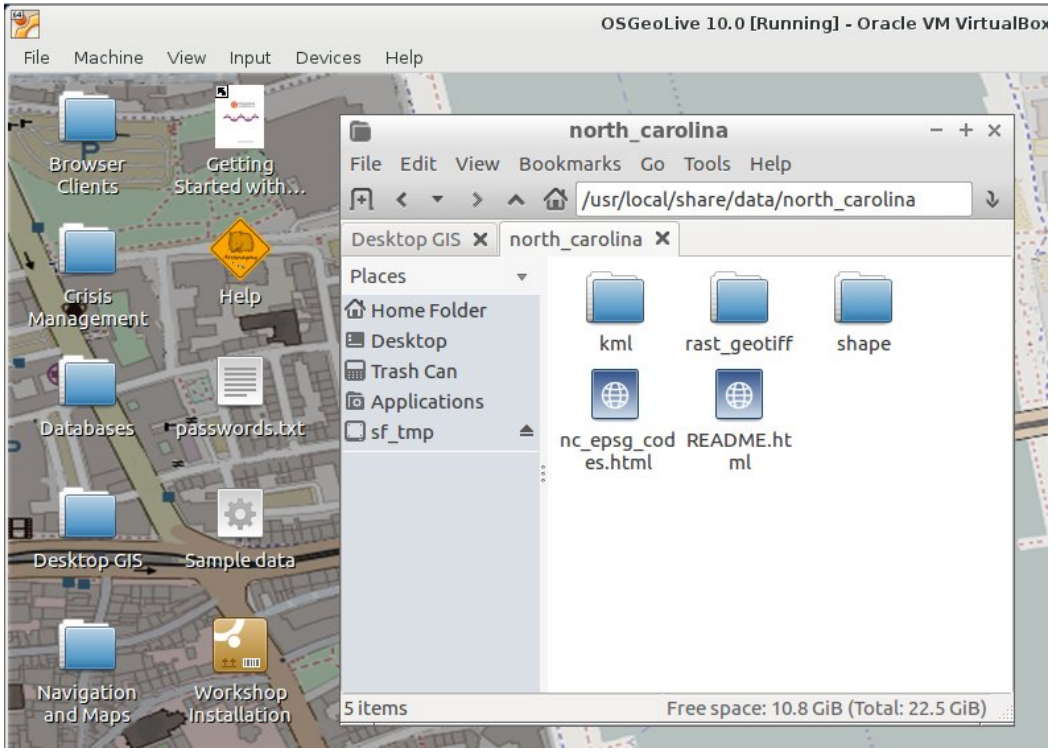
```
cd $HOME
mkdir gis_data
```

Data files in OSGeo-live:

Stored in /usr/local/share/data/north_carolina/

- zipcodes_wake.shp (.dbf, .prj, .shx)
- elev_state_500m.tif
- elev_lid792_1m.tif

Find these **3 datasets** and copy them into the new “gis_data” directory.
The maps are located in North Carolina, USA.



Preparation – Unpacking the course data set

Unpacking of the `nc_zipcodes_wake_SHP.zip|.tar.gz`
(ZIP codes map of Wake county in North Carolina)

Linux:

- Create a directory “gis_data” in your home directory and unpack the file therein as follows (or use a graphical program):

```
mkdir $HOME/gis_data
cd $HOME/gis_data
tar xvfz /path/to/nc_zipcodes_wake_SHP.tar.gz
```

Mac OSX:

- Create a directory “gis_data” in your home directory and unpack the `nc_zipcodes_wake_SHP.zip` file therein.

MS-Windows:

- Create a directory “gis_data” in your home directory and unpack the `nc_zipcodes_wake_SHP.zip` file therein
- Note: avoid white space in the path as well as non-ASCII characters (it may work, though)

QGIS: “GRASS Toolbox” versus “Processing”

Two ways of using GRASS GIS from QGIS

GRASS Toolbox

Processing (formerly SEXTANTE) → GRASS GIS provider

The choice is up to the user. The differences are... (next slide)

QGIS: “GRASS Toolbox” versus “Processing”

GRASS Toolbox

- “traditional” GRASS GIS support in QGIS
- Connects directly to GRASS: uses region information and reads/writes GRASS data format directly

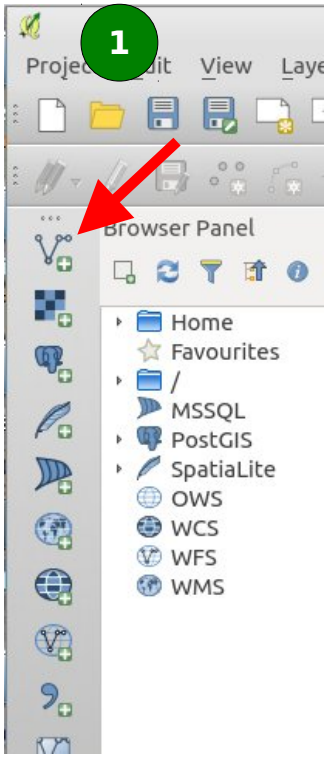
Processing (formerly SEXTANTE) → GRASS GIS provider

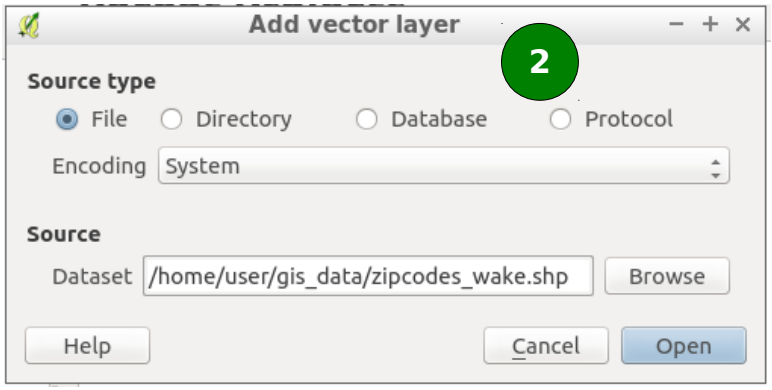
- “new” GRASS GIS support
- Runs GRASS GIS in a temporary session for each calculation
- … using GRASS GIS from QGIS (internal batch job mode)

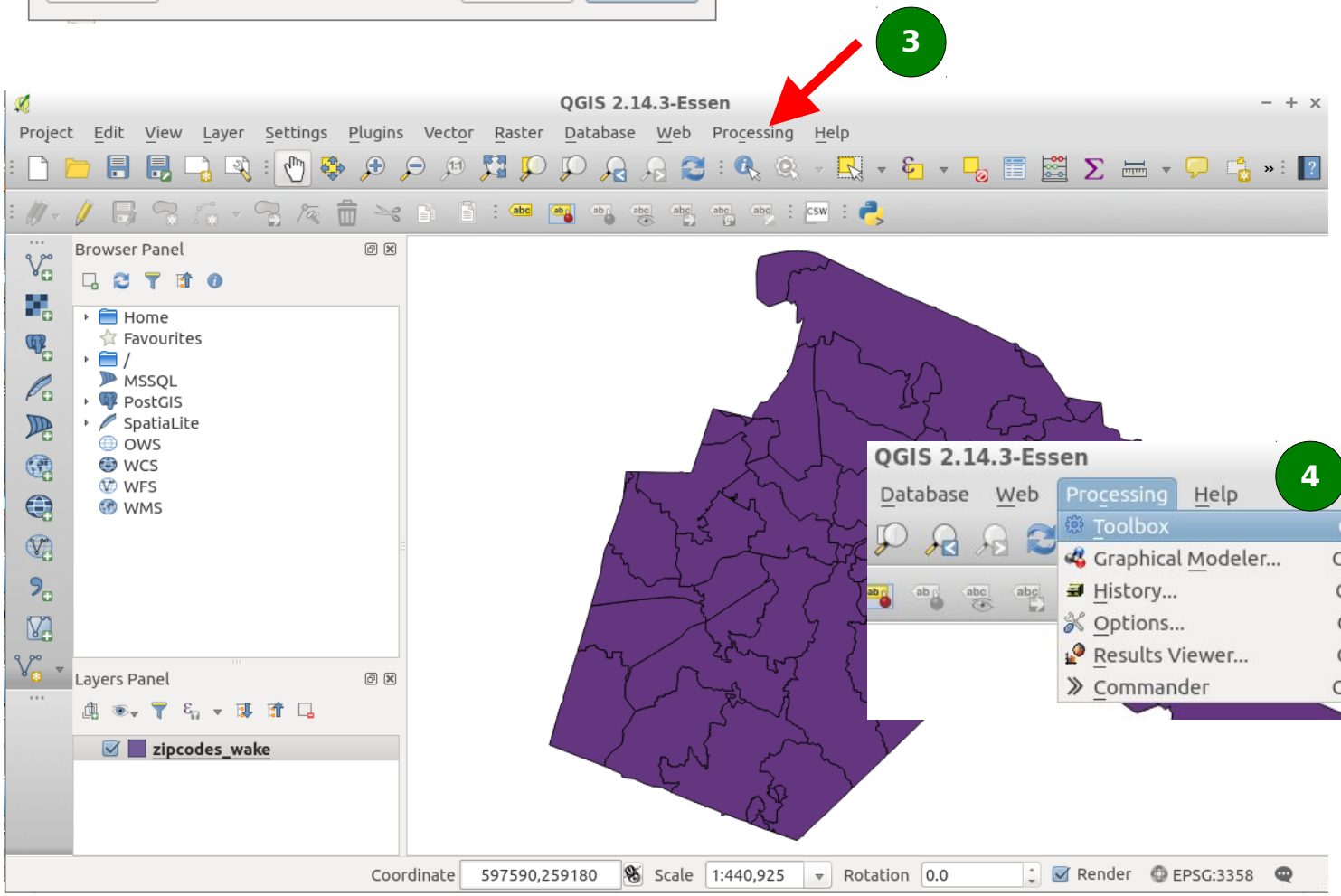
So, which one? We will now use “Processing”!

Start QGIS from “Desktop GIS” in OSGeoLive

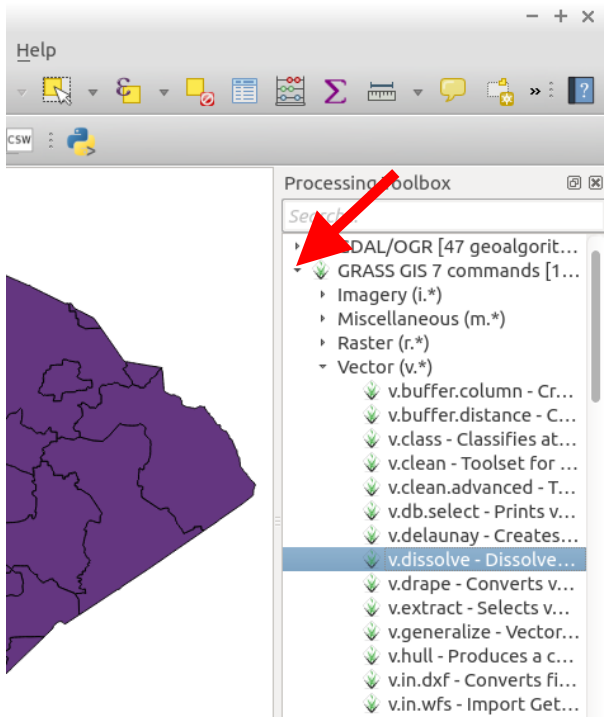
QGIS-Processing – Using QGIS and Processing

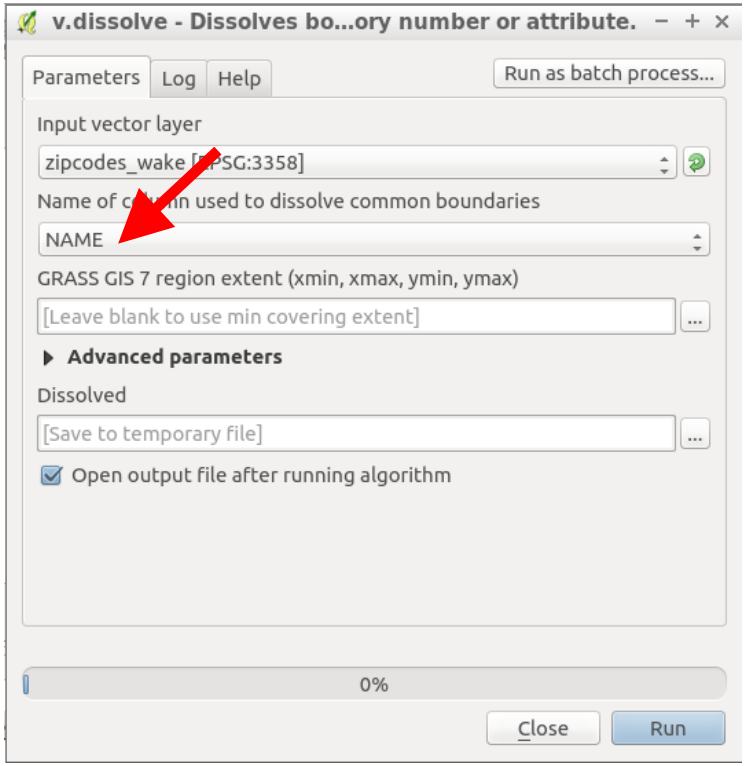






QGIS-Processing – Vector exercise: dissolve

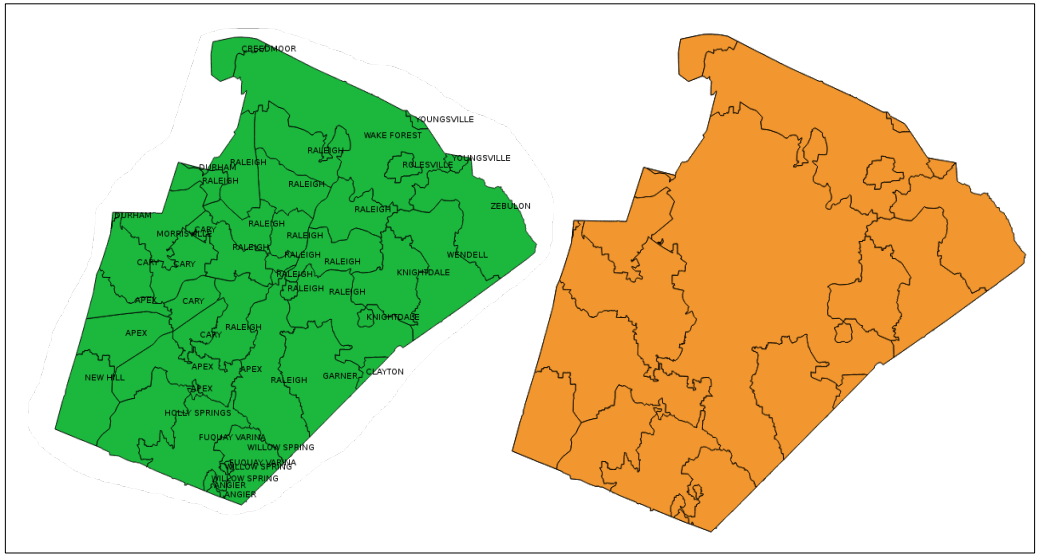




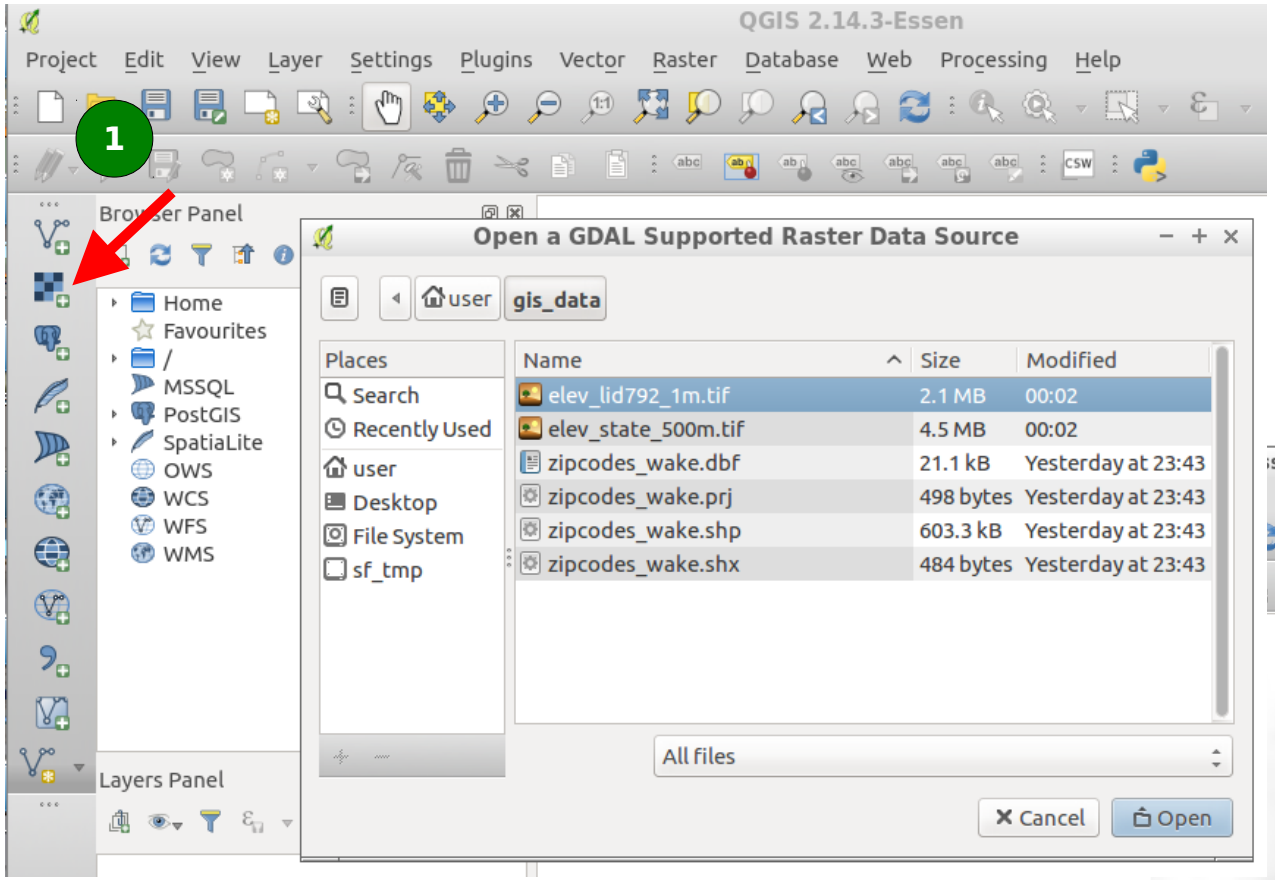
Dissolving geometry by string column attributes:

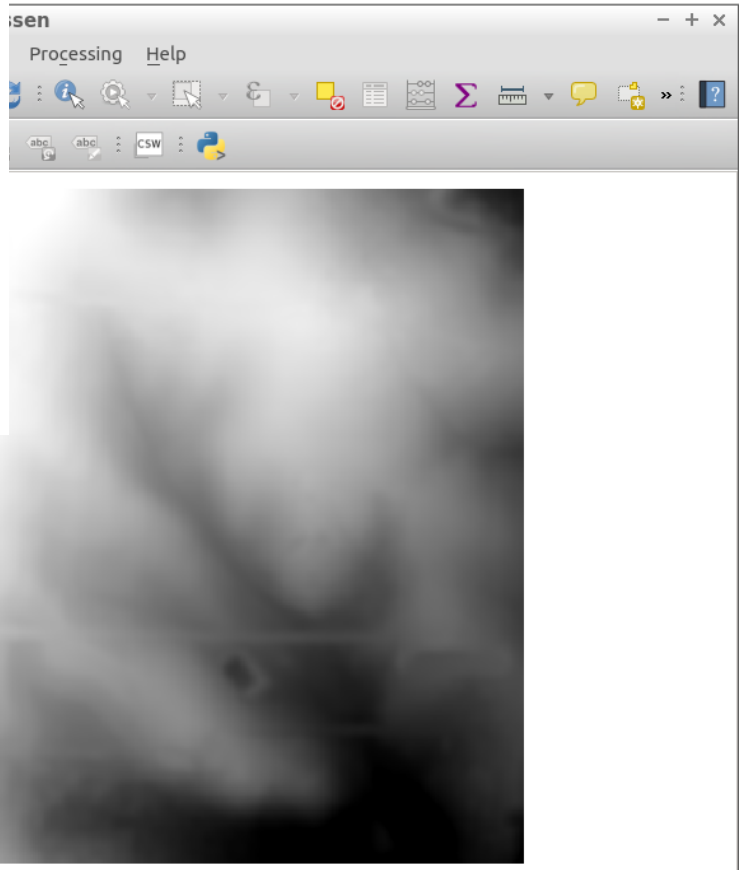
- **SHAPE file is preselected according to legend**
- **Select “NAME” column for dissolving**
- **Run**

Processing calls GRASS GIS in a temporal session which deliver the result back (here: SHAPE file)

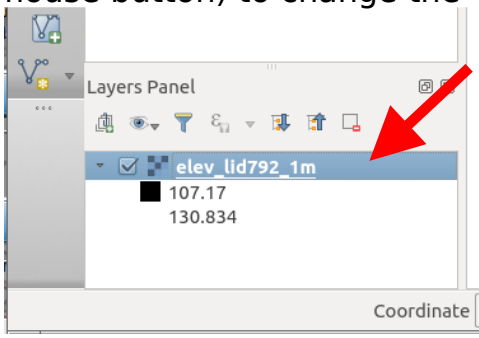


QGIS: Raster data: loading a 1m LiDAR map

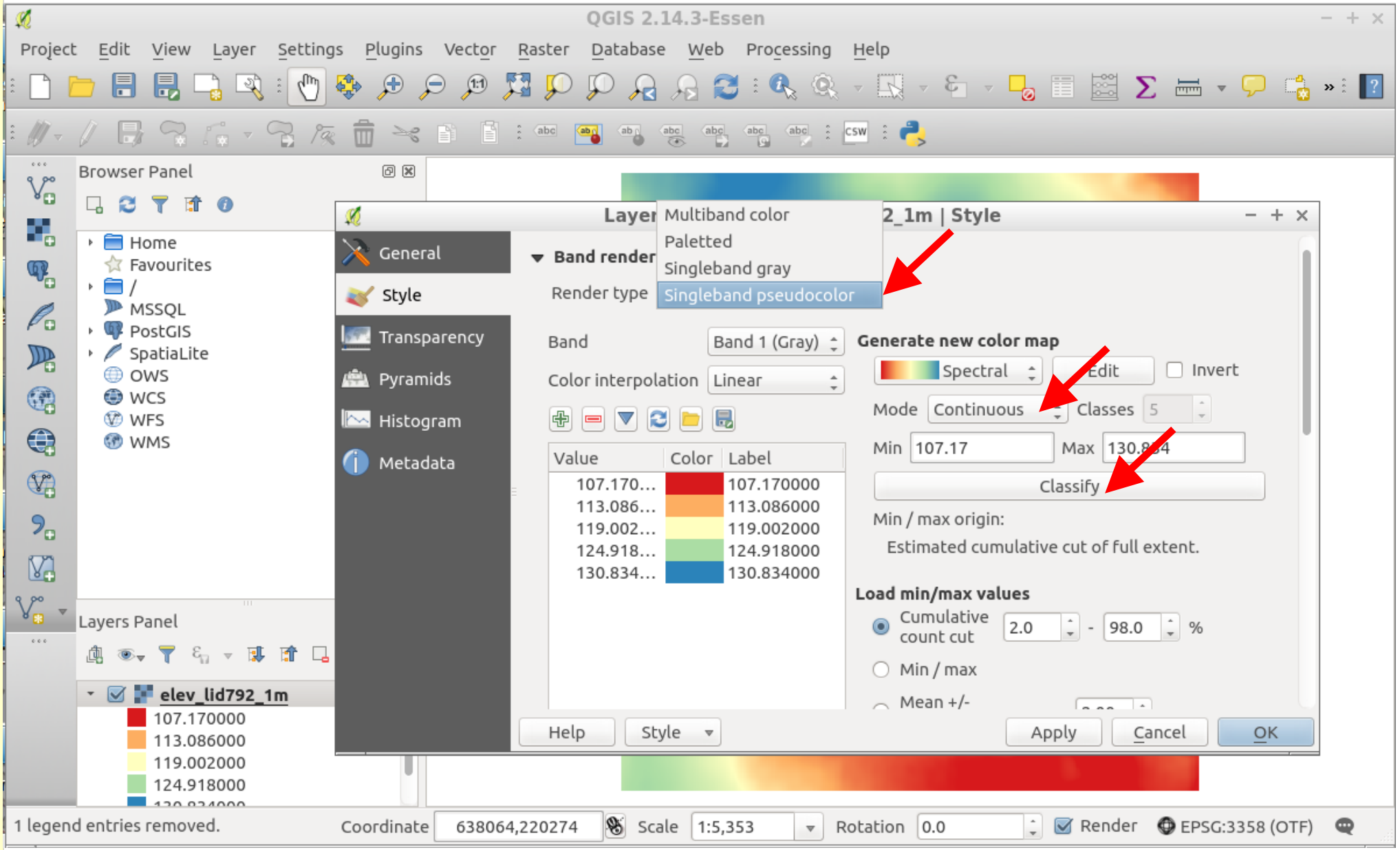




Once you see the map, select “Properties” in the legend entry of “elev_lidar792_1m” (right mouse button) to change the color style



QGIS: Raster data: styling the elevation map



QGIS: Raster data: hillshading

Please try yourself...