



# Procesamiento de series de tiempo en **GRASS GIS**

## Aplicaciones en Ecología y Ambiente

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# Exercise 1: Getting familiar with GRASS GIS





GRASS GIS

# Overview



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- Revise GRASS GIS database structure



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- Sample dataset "North Carolina"



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- Query raster and vector maps



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GRASS

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- 3D visualization
- Display base maps (WMS servers)



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- Sample dataset "North Carolina"
- Start GRASS GIS and explore GUI
- Display raster and vector maps
- Query raster and vector maps
- 3D visualization
- Display base maps (WMS servers)
- Add map decorations



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- Revise GRASS GIS database structure
- Sample dataset "North Carolina"
- Start GRASS GIS and explore GUI
- Display raster and vector maps
- Query raster and vector maps
- 3D visualization
- Display base maps (WMS servers)
- Add map decorations
- Scatterplots and histograms



# Sample dataset: North Carolina

- Download the **North Carolina full dataset**
- Create a folder in your \$HOME directory (or Documents) and name it grassdata
- Unzip the file nc\_spm\_08\_grass7.zip within grassdata



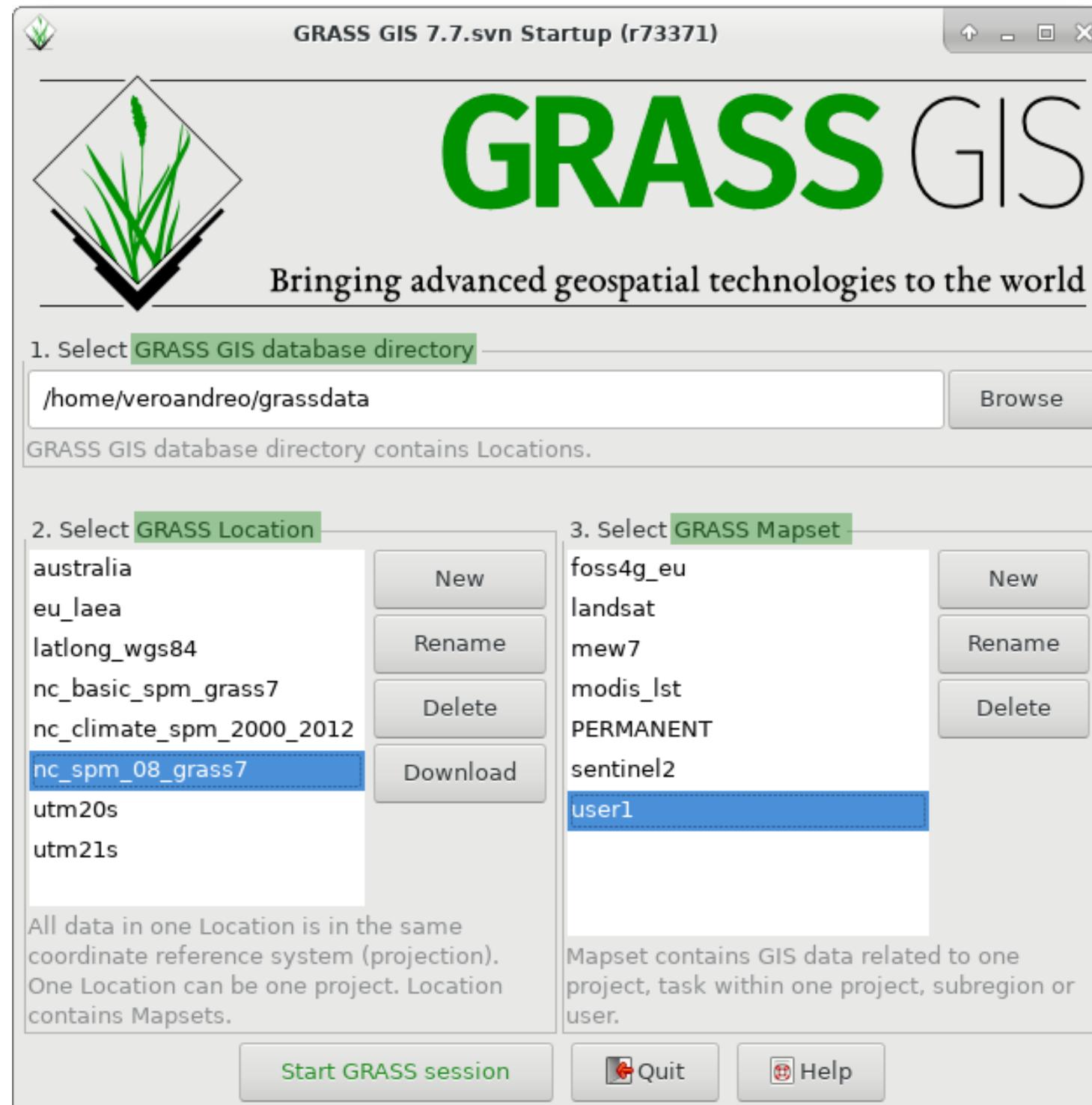
# Let's start GRASS GIS

- Click over the GRASS GIS icon (*MS Windows: Start --> OSGeo4W --> GRASS GIS*)
- Open a terminal or the *OSGeo4W Shell* and type:

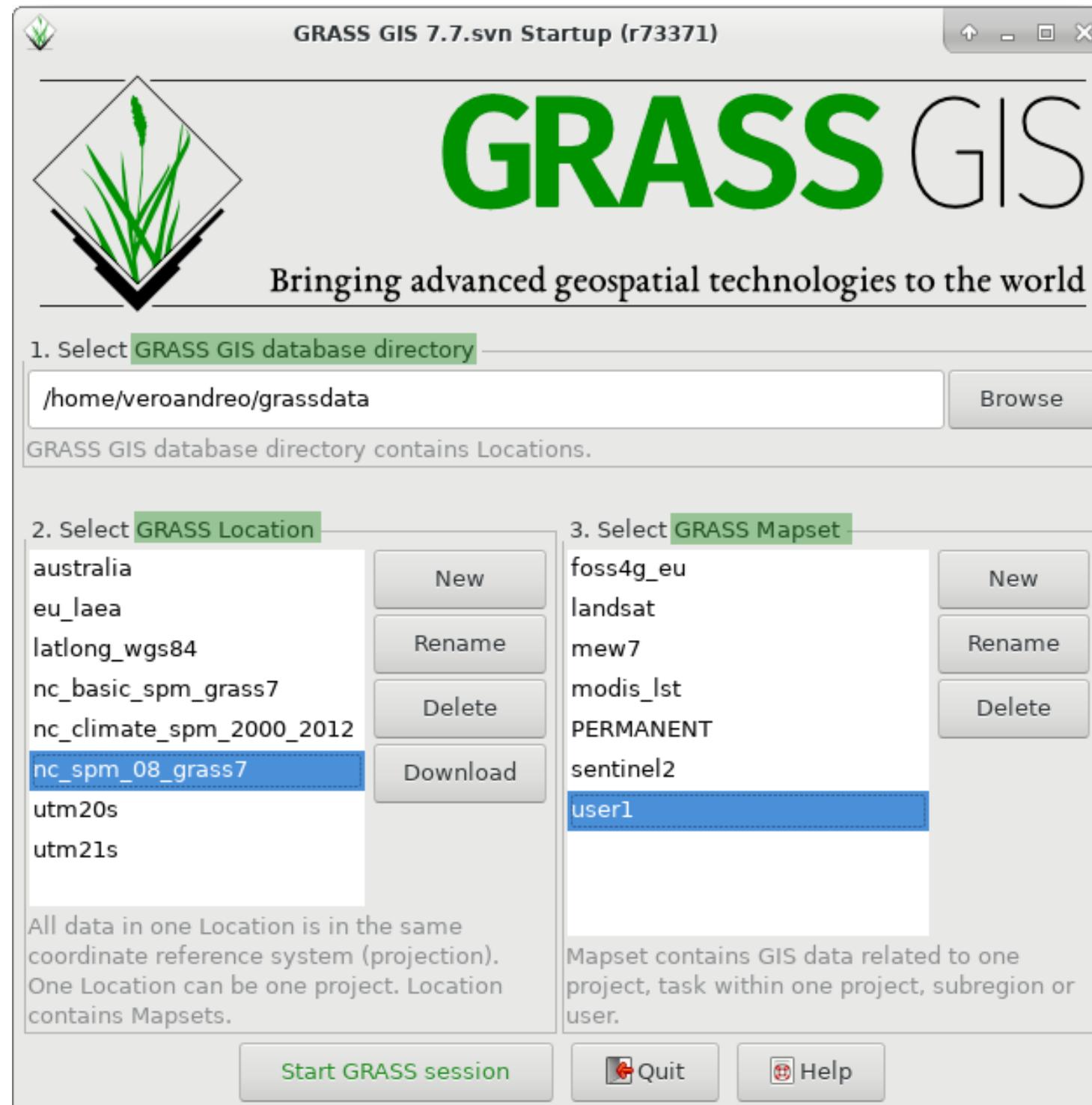
```
# open grass with GUI Location wizard
grass74

# open text mode only
grass74 --text $HOME/grassdata/nc_spm_08_grass7/user1/
```

# ... and now what?



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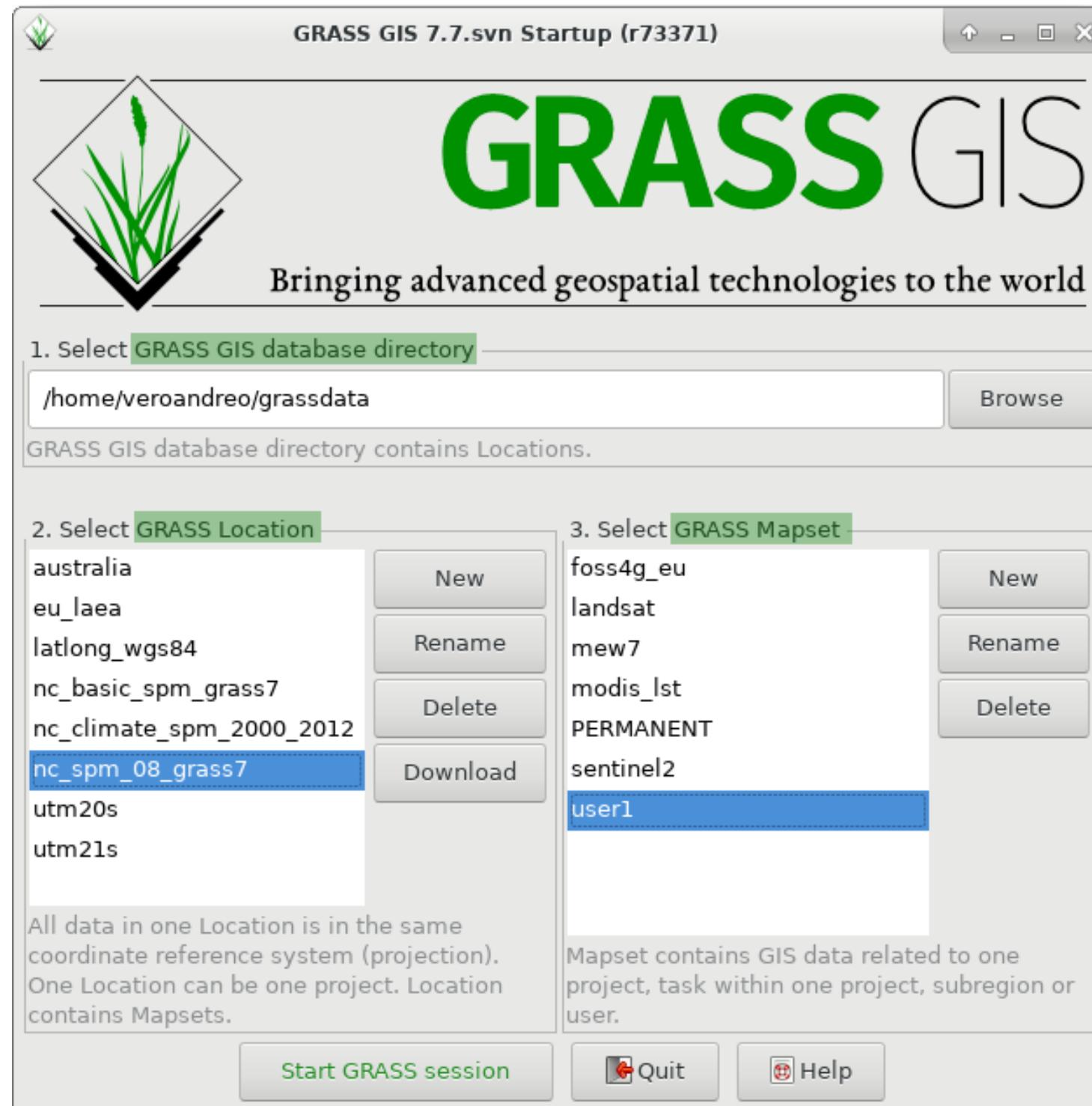


- Select the GRASS database folder



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# ... and now what?

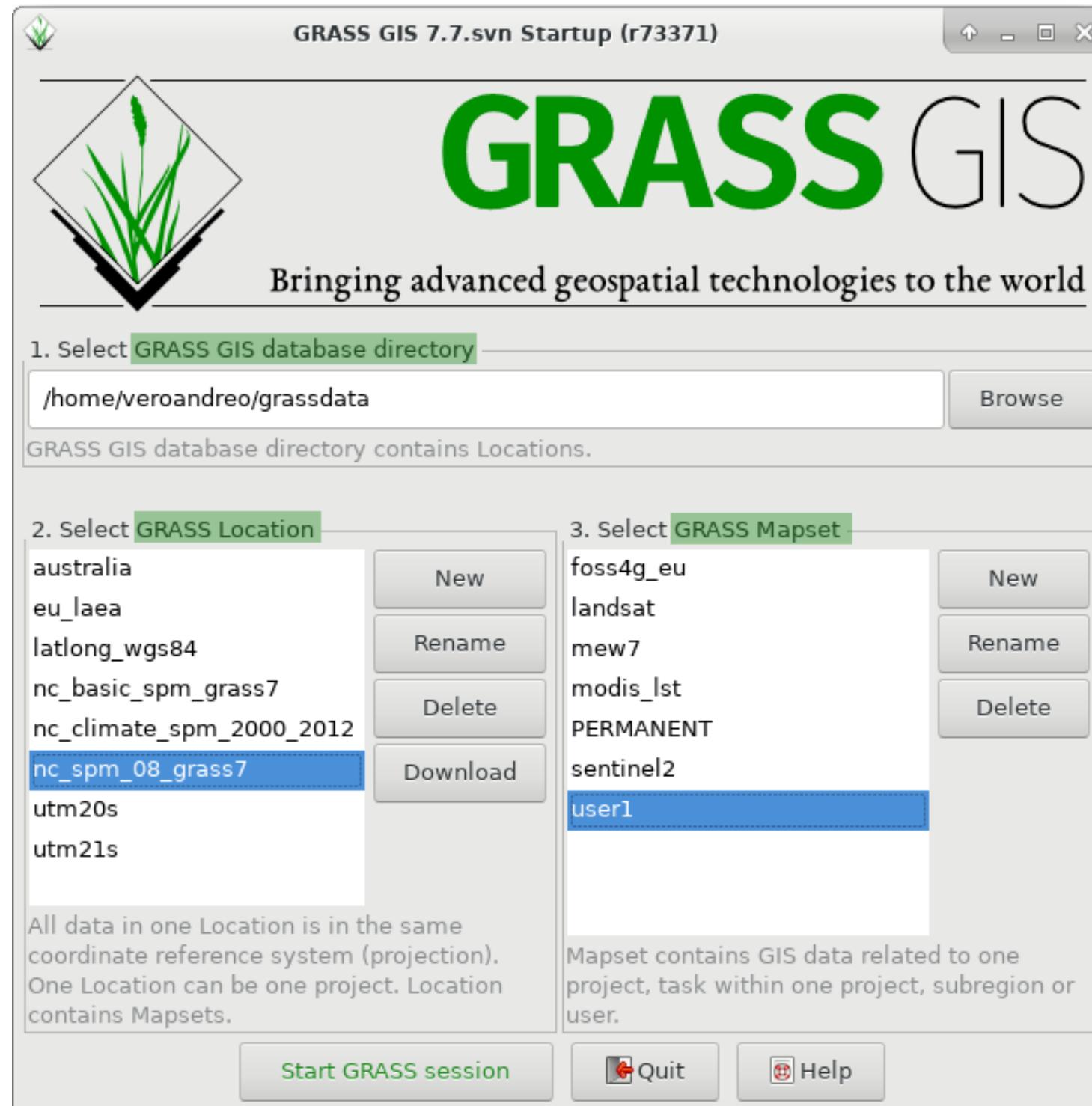


- Select the GRASS database folder
- Select the **nc\_spm\_08\_grass7** location



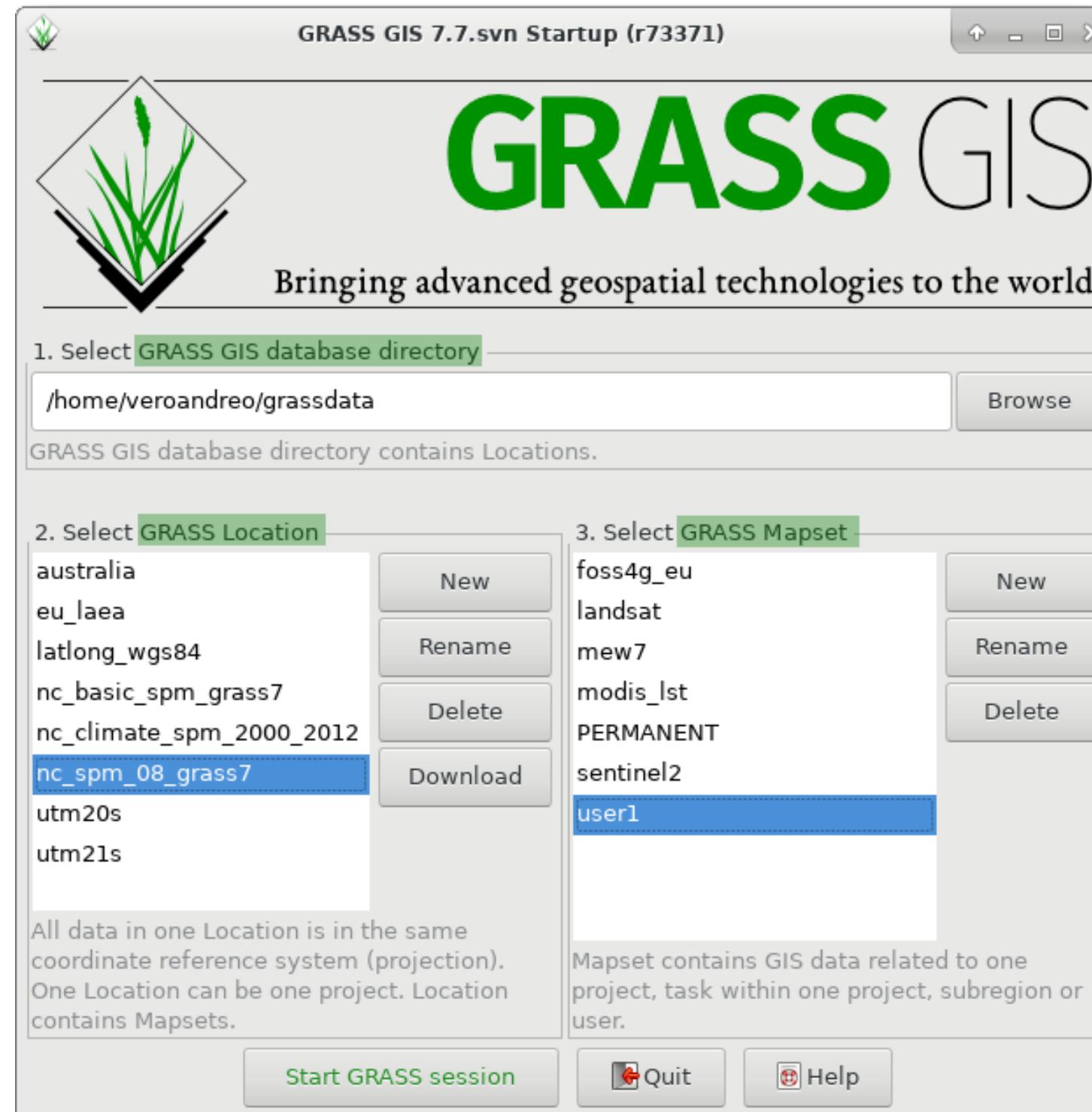
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# ... and now what?



- Select the GRASS database folder
- Select the **nc\_spm\_08\_grass7** location
- Select **user1** mapset

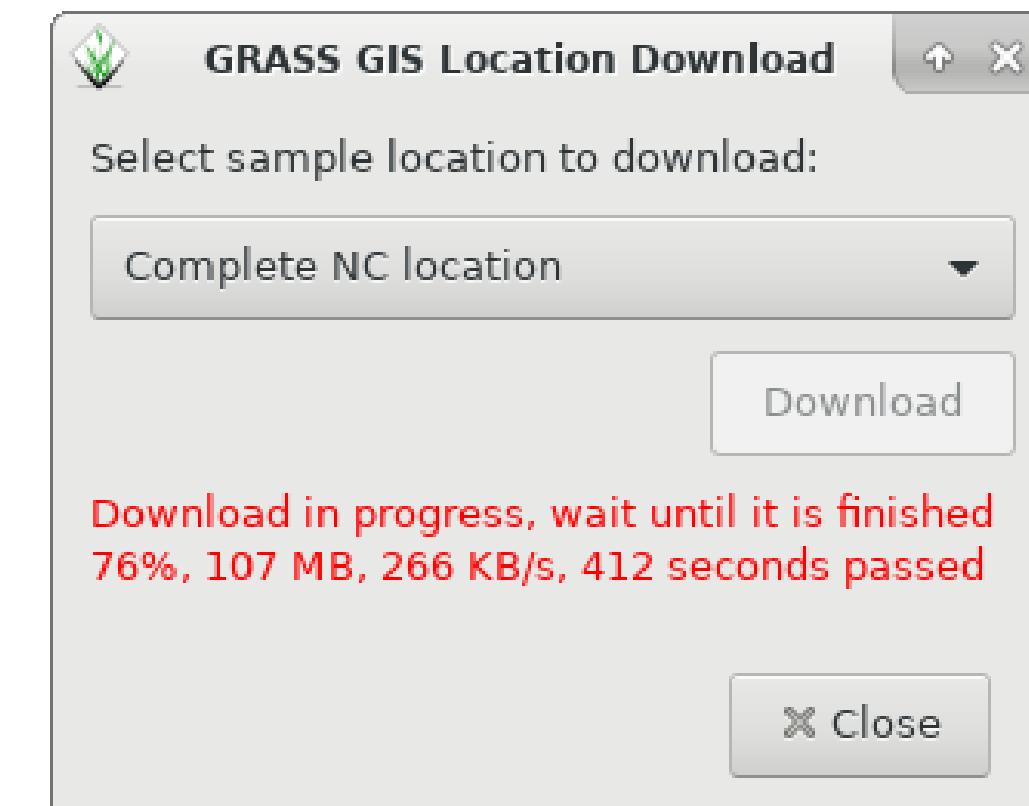
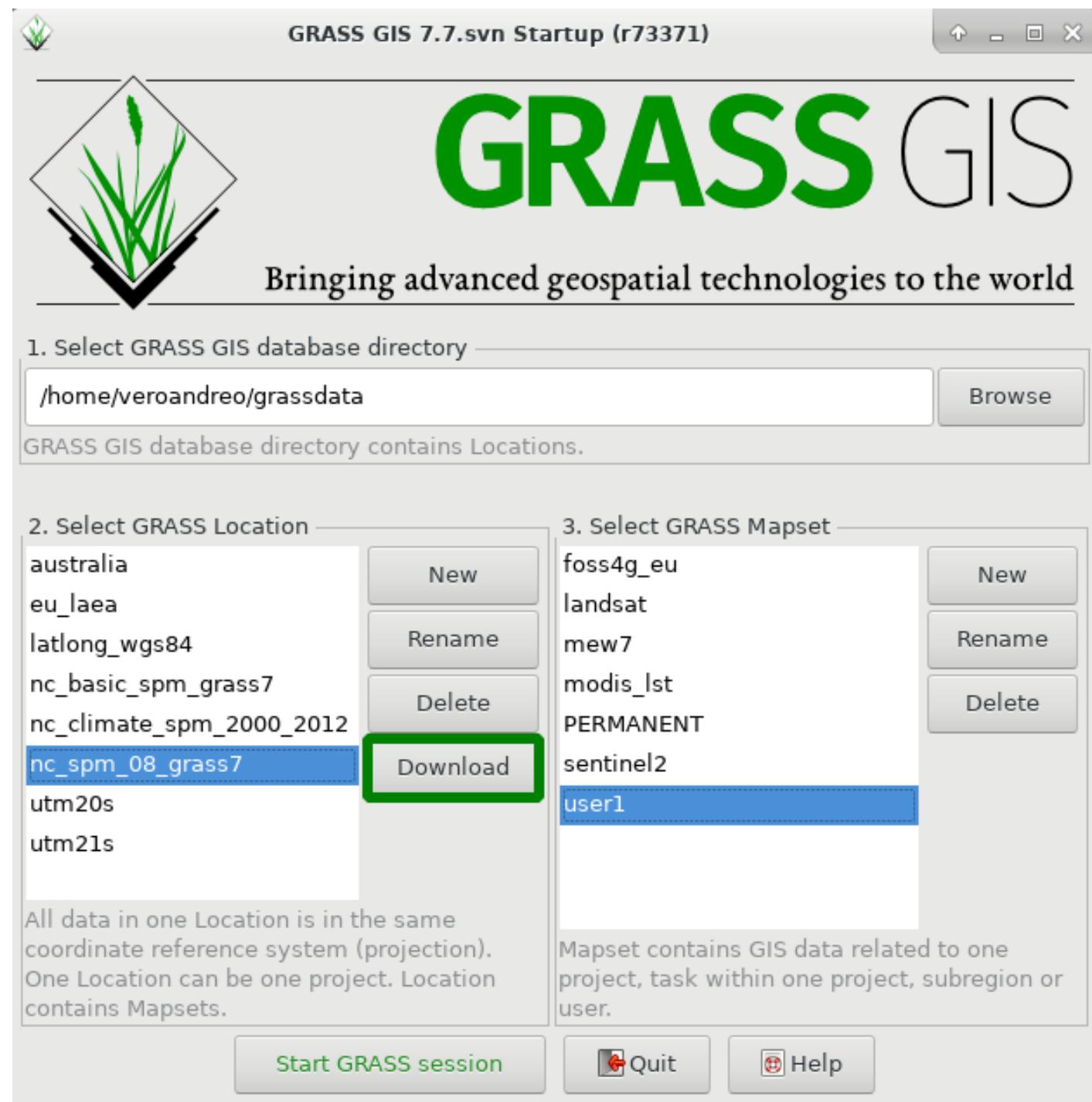
# ... and now what?



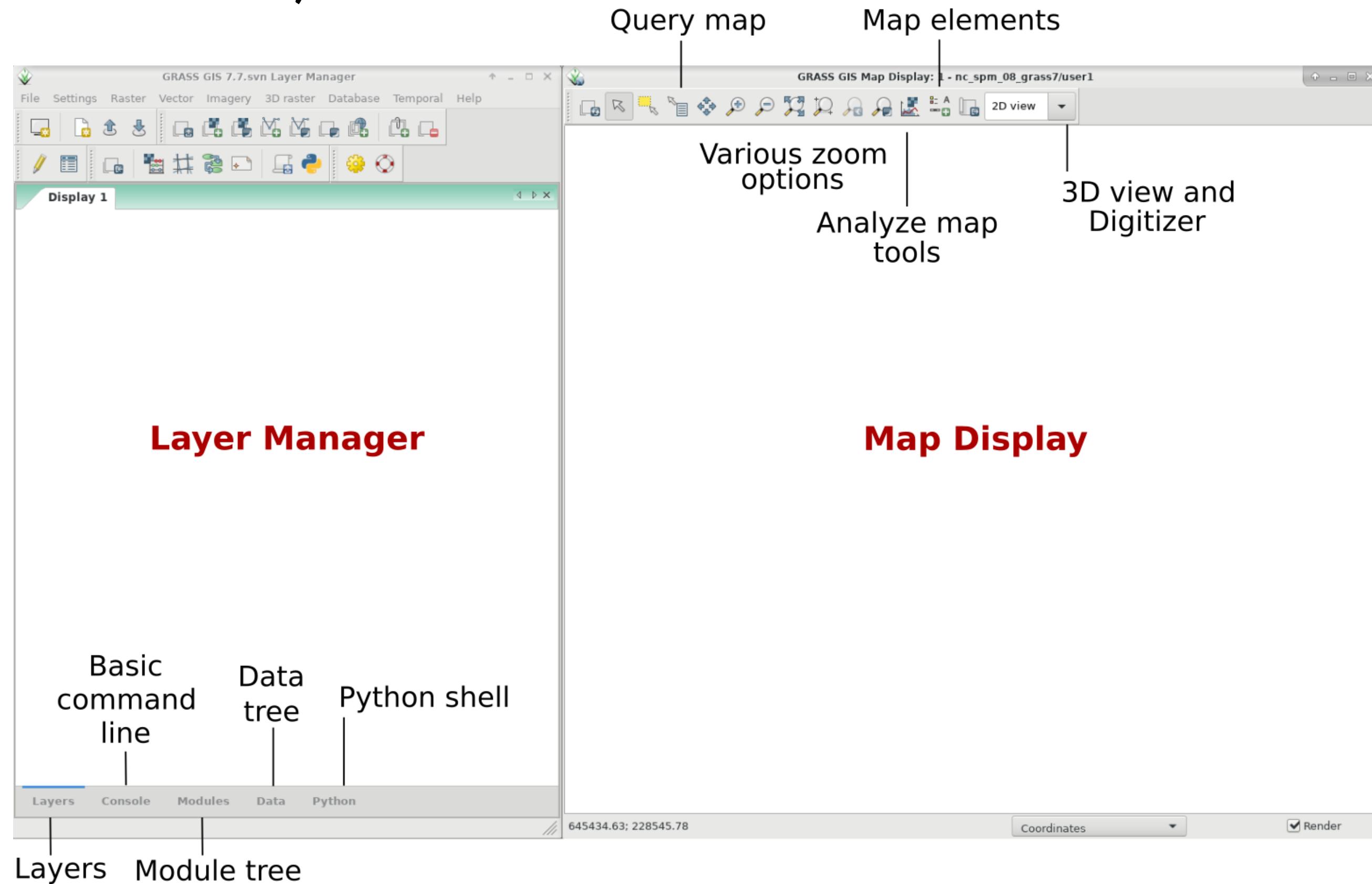
- Select the GRASS database folder
- Select the **nc\_spm\_08\_grass7** location
- Select **user1** mapset
- Hit Start GRASS session



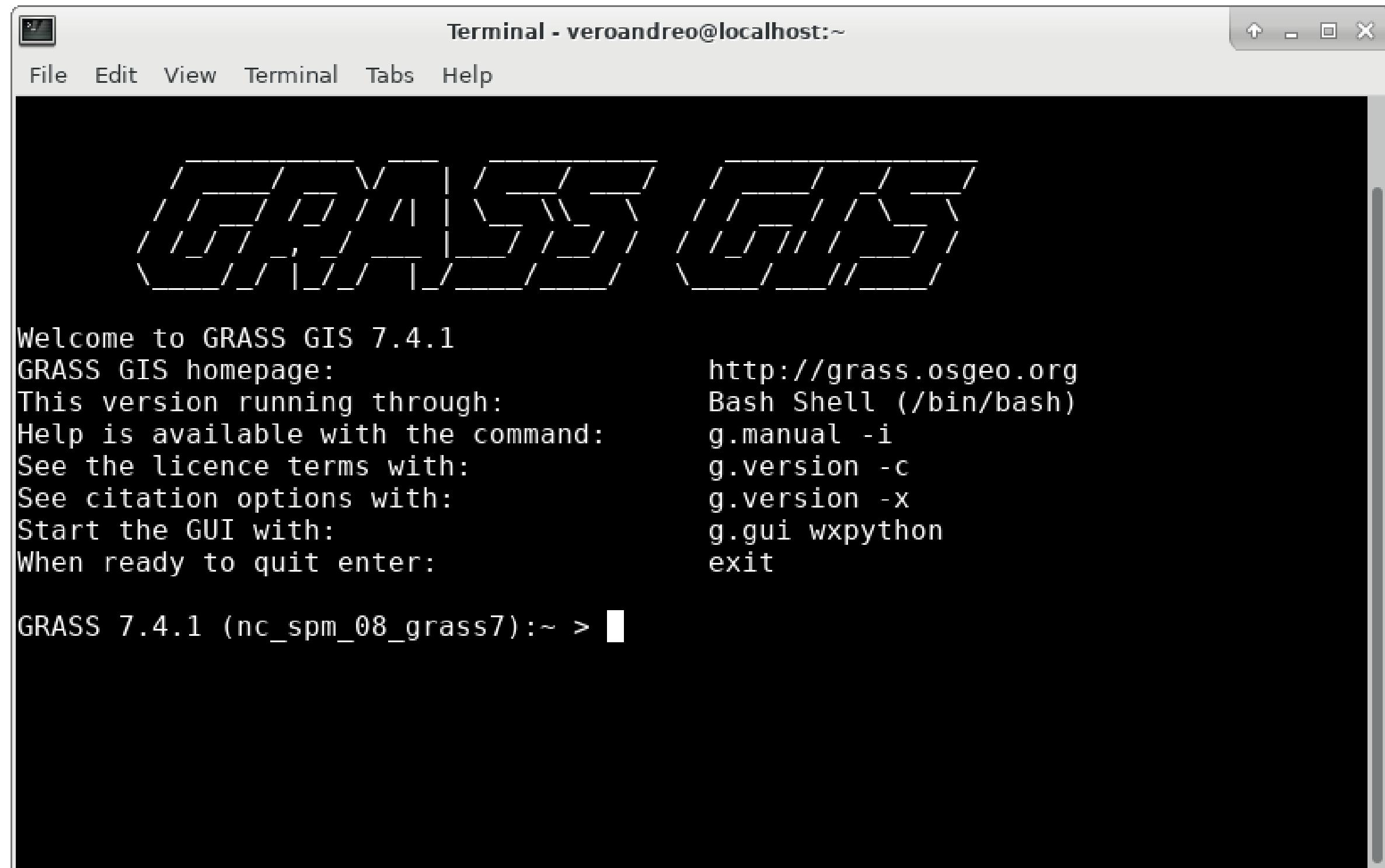
# If you haven't downloaded NC location yet... No problem!



# Here we are :)



# ... and the Terminal



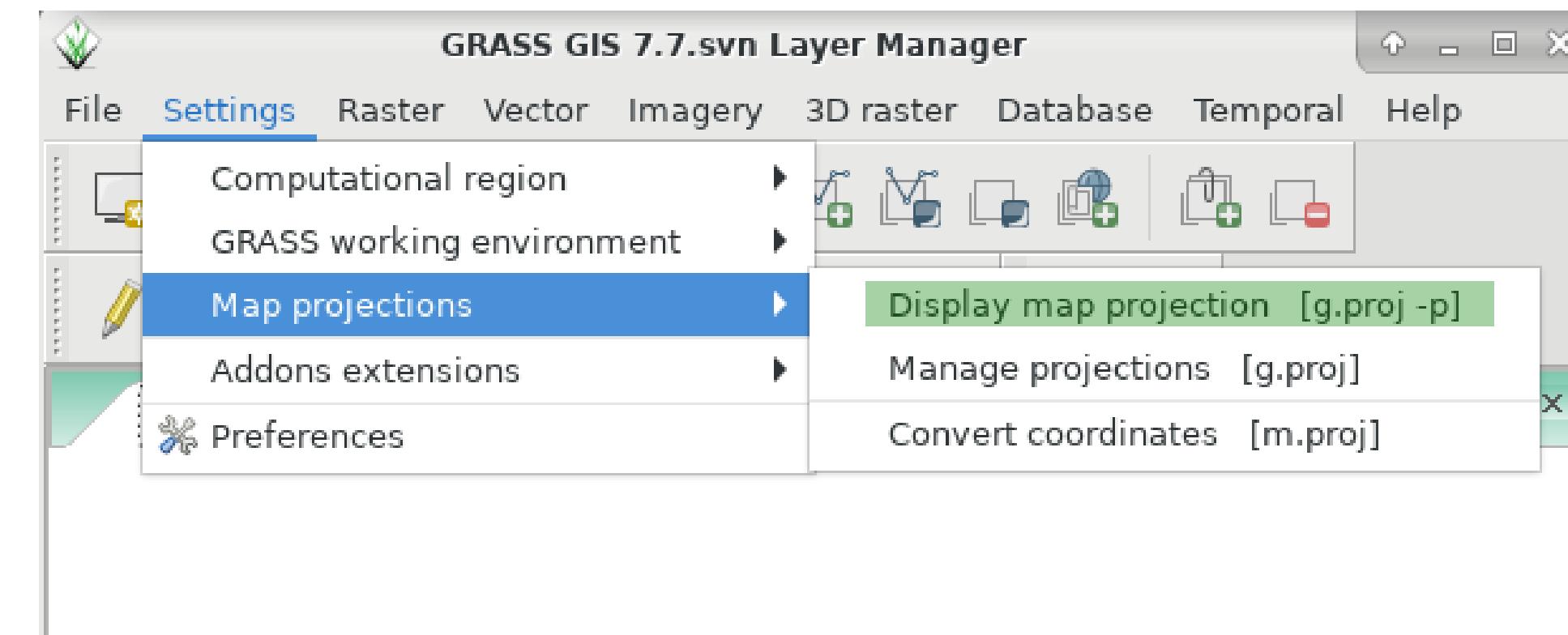
A screenshot of a terminal window titled "Terminal - veroandreo@localhost:~". The window has a standard title bar with icons for minimize, maximize, and close. Below the title bar is a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The main area of the terminal shows the GRASS GIS 7.4.1 startup message. It starts with two large, stylized, blocky tree icons. Below the icons, the text reads:

```
Welcome to GRASS GIS 7.4.1
GRASS GIS homepage: http://grass.osgeo.org
This version running through: Bash Shell (/bin/bash)
Help is available with the command: g.manual -i
See the licence terms with: g.version -c
See citation options with: g.version -x
Start the GUI with: g.gui wxpython
When ready to quit enter: exit

GRASS 7.4.1 (nc_spm_08_grass7):~ > █
```

The terminal window is set against a light gray background.

# Get information about the CRS



or just type in the terminal

```
g.proj -p
```

# Display raster and vector maps

Many different options:

- Go to File --> Map display --> Add raster|vector
- Toolbar icons in the Layer Manager
- Type the commands in the Console tab
- Double-click over a map in the Data tab
- From command line in the black terminal



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# Display raster and vector maps

**Task:** Give a look to the *General Capabilities* presentation and practice different ways of displaying raster & vector maps

# Calling GRASS GIS commands

- From the GUI:
  - Main menu in GRASS GIS Layer Manager,
  - Console tab,
  - Modules tab
- From the terminal:
  - type first letter or some letters + <tab><tab>



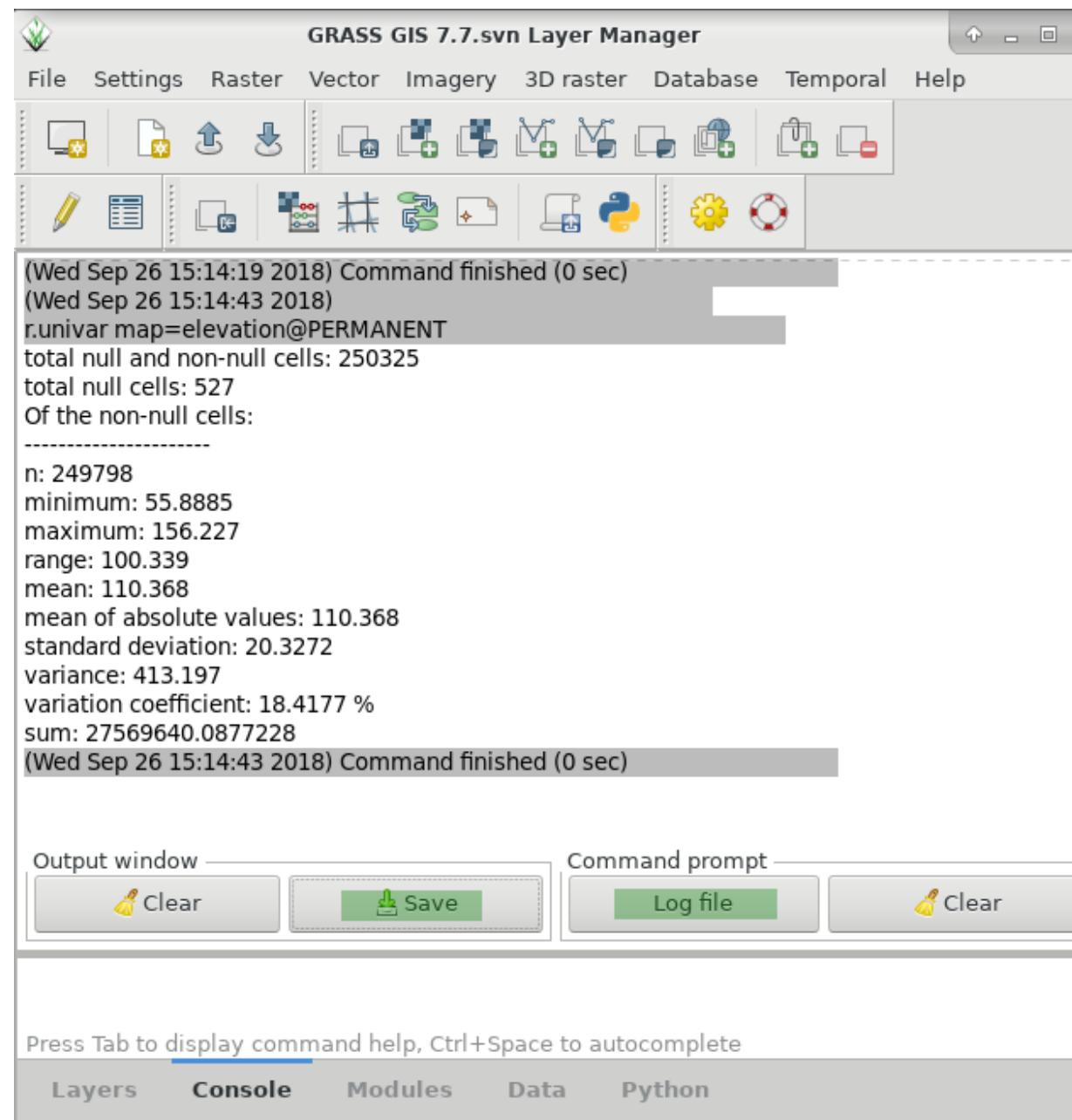
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# Calling GRASS GIS commands

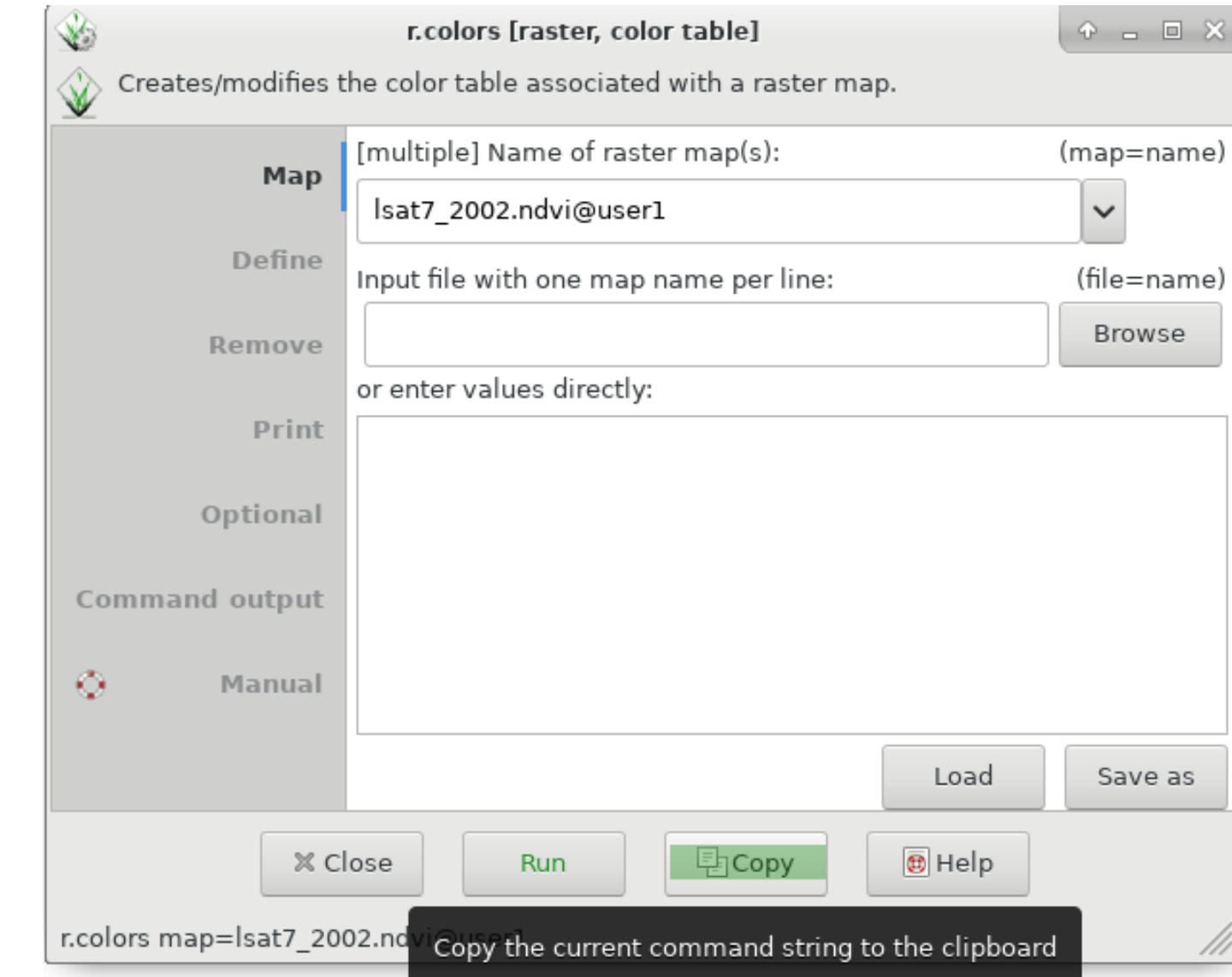
## Task:

- Run *r.univar map=elevation* from the main GUI  
(Raster --> Reports and statistics)
- Run *r.univar map=elevation* from the Console tab
- Type *r.un* in the black terminal and hit *<tab>* twice.  
Then hit *<Enter>*
- Run *r.univar map=elevation* in the black terminal

# 2 things to note in the GUI:



*Log file and Save in the GUI console*



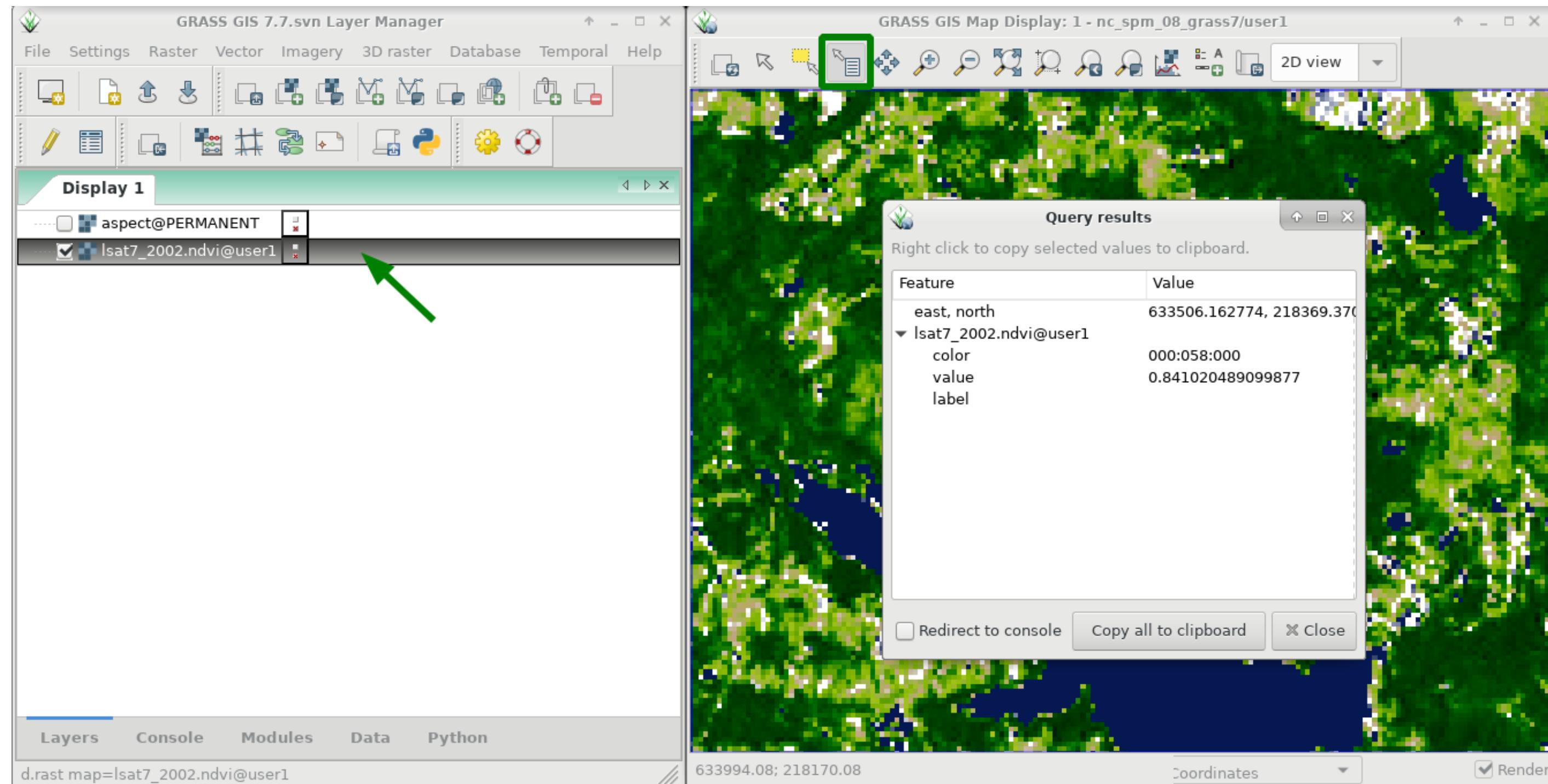
**Copy button in commands' GUI**

# Getting Help

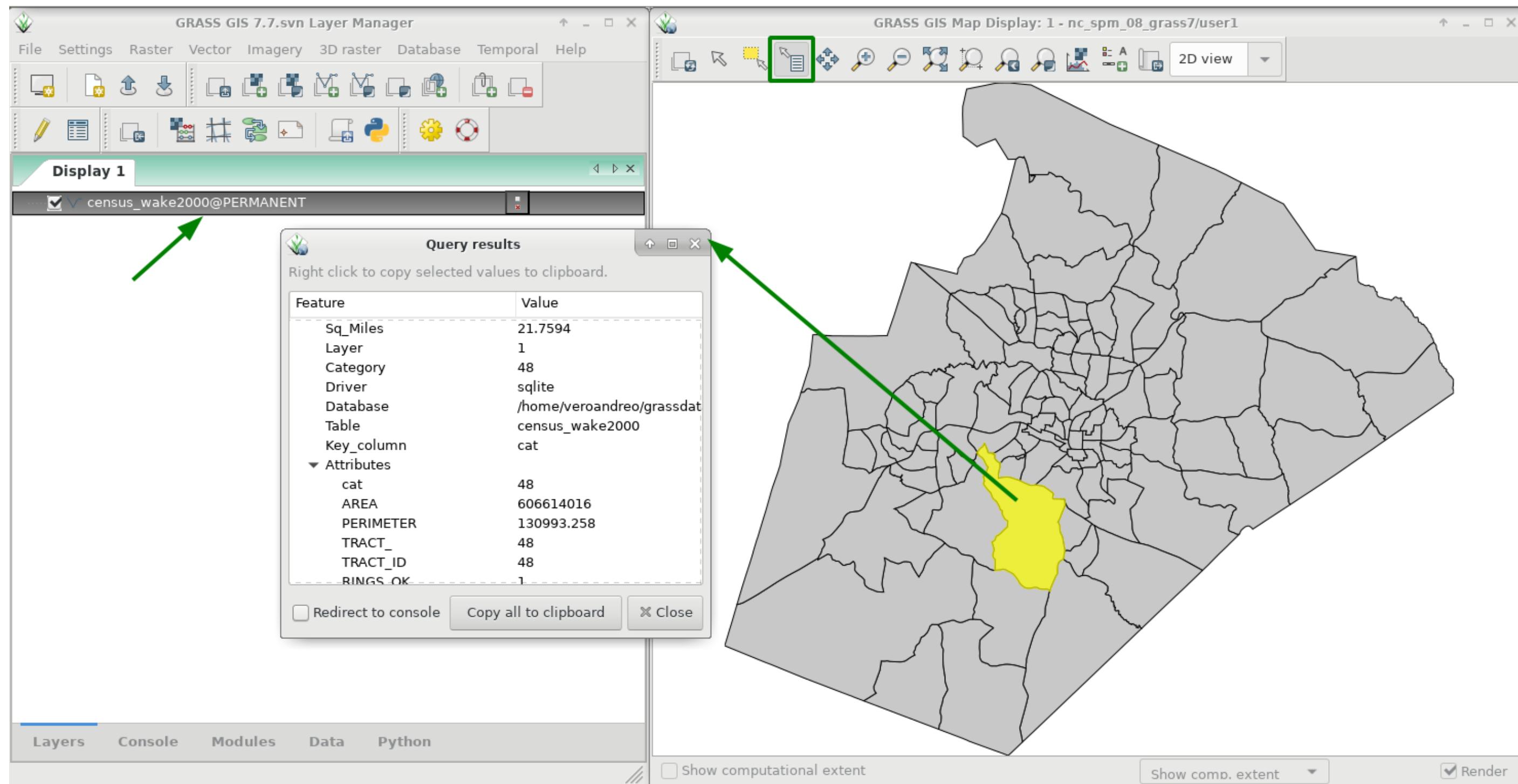
- From the Main menu Help
- In the GUI of every command
- Typing `<command> --help` in the terminal
- Using `g.manual <command>` to see the online manual page

***Task:*** Now try yourself. Get help for `r.info` and `v.what.stats`.

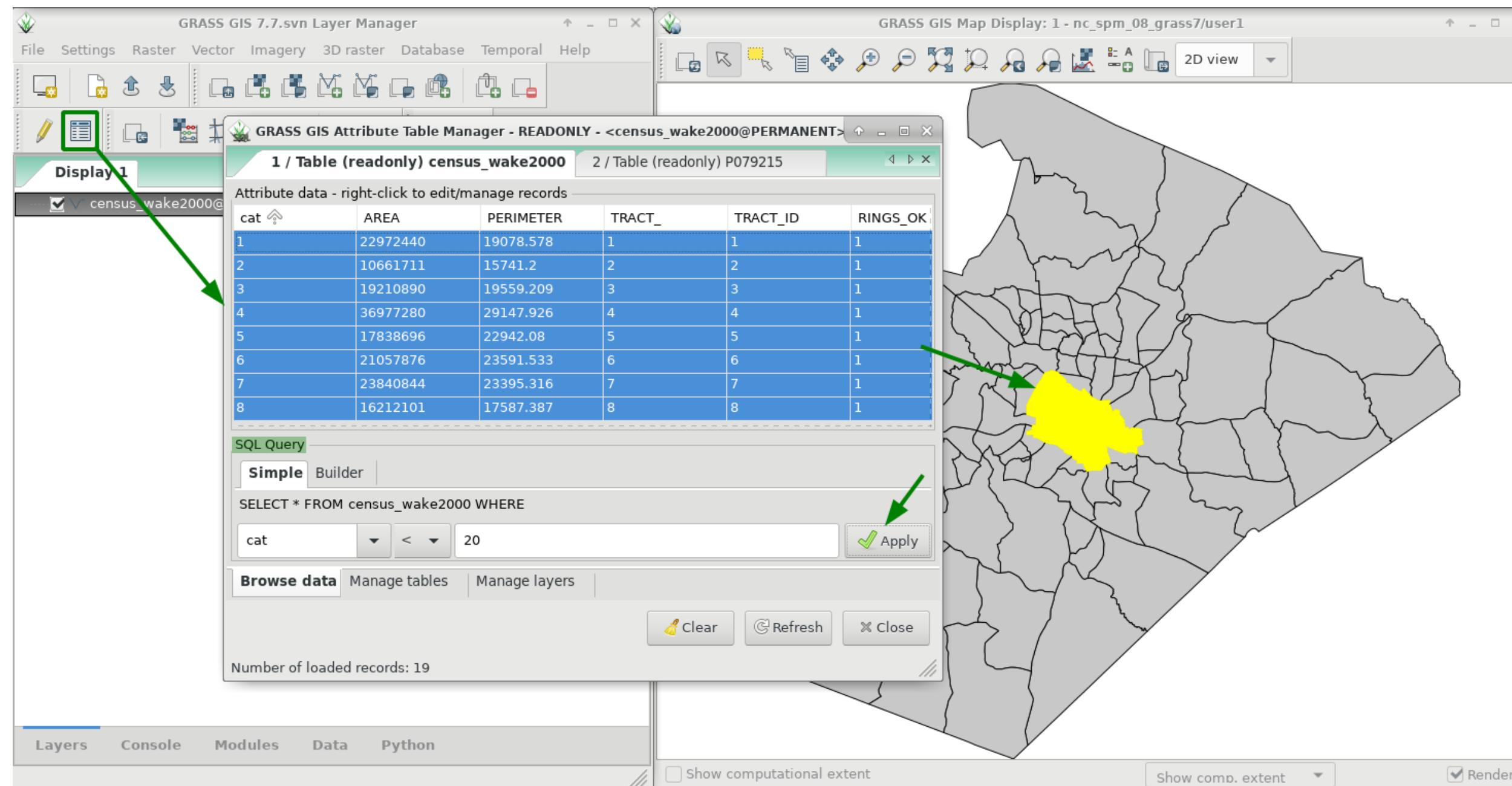
# Query raster and vector maps



# Query raster and vector maps



# Vector's attribute table(s)



# Vector's attribute table(s)

## Task:

- *Change color of areas*
- *Display only boundaries with a different color*
- *Show only cat 1-40*
- *Build an SQL SELECTION query with at least 2 conditions*

# Exploring the sample dataset and region settings

```
# list of raster maps
g.list rast
# list of vector maps
g.list vect
# print region settings
g.region -p
```

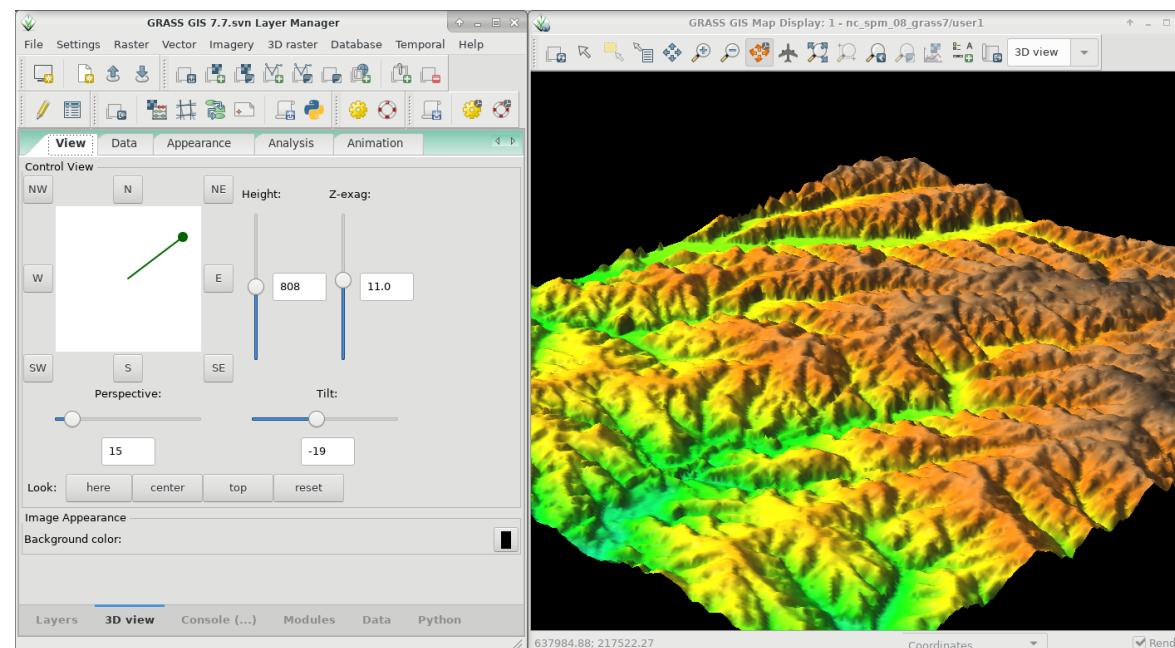
## Tasks:

- *Explore r.info and v.info help and get basic information about a raster and a vector map*
- *Change the current region to a vector map and print the new settings*
- *Align the region resolution to a raster map and print it to check*

# 3D visualization

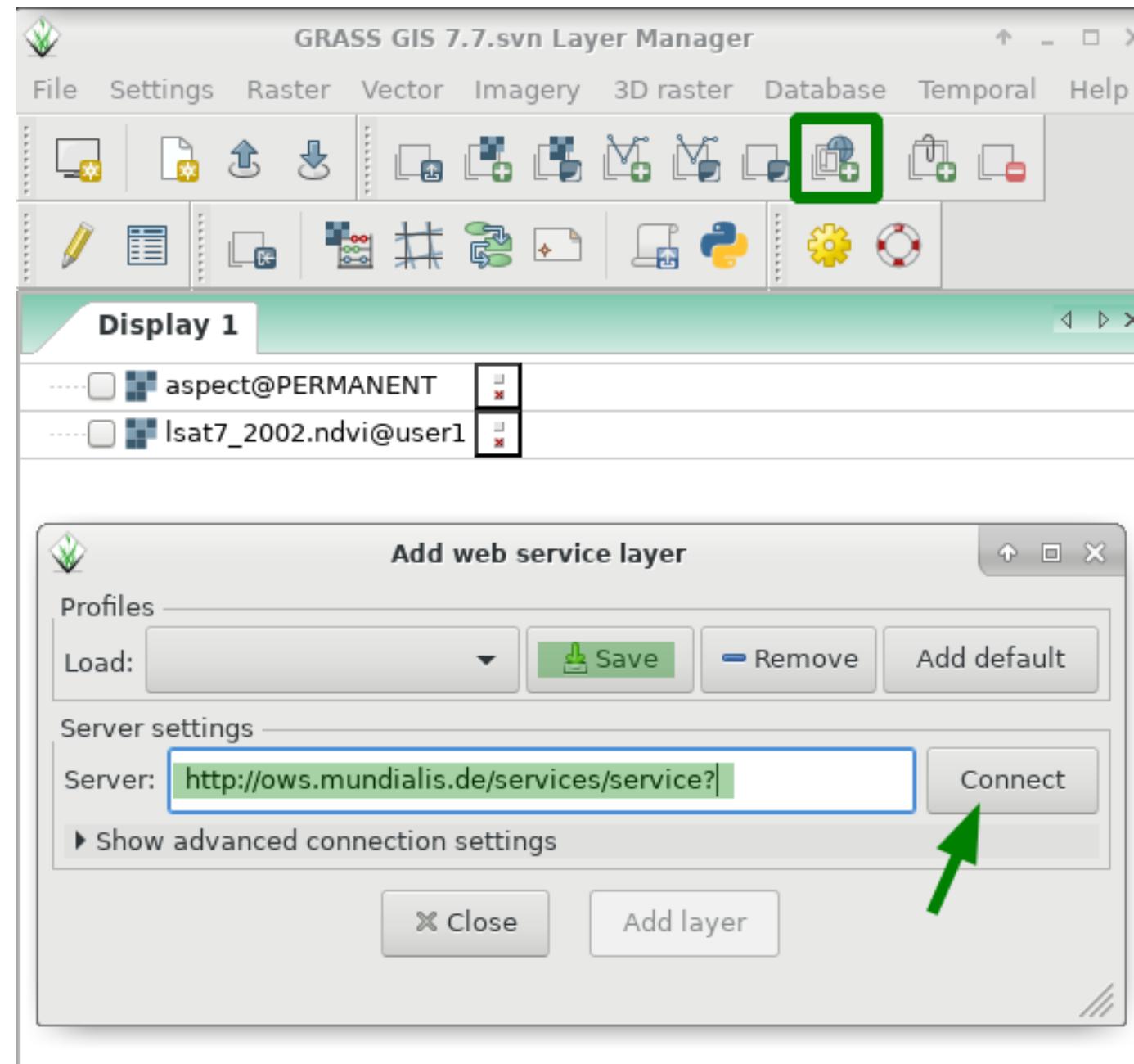
## Task:

- *Display the elevation raster map*
- *Change to 3D view in the Map Display window*
- *Explore the options available in the new 3D tab that appears in the Layer Manager*

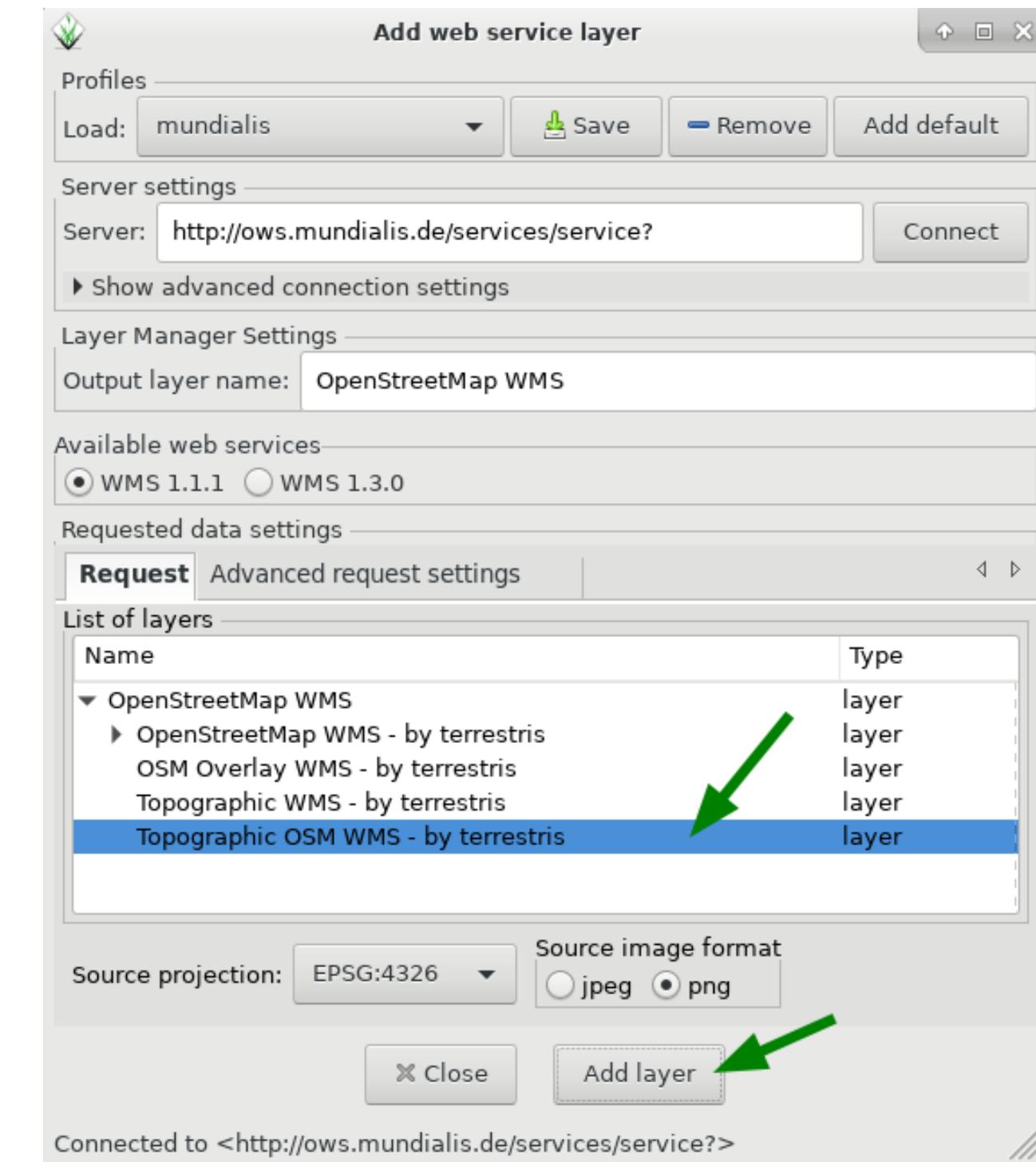


# Display base maps from WMS servers

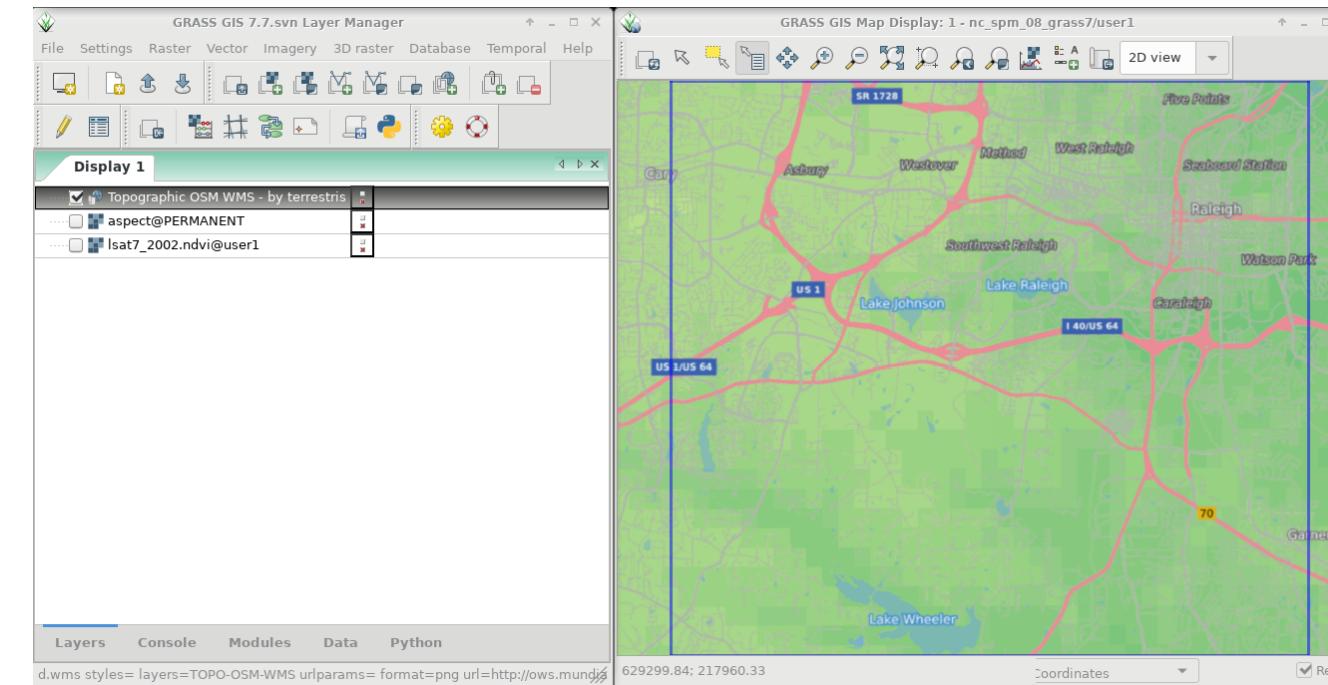
## Step 1



## Step 2



# Display base maps from WMS servers



## Task:

- *Explore the area, zoom in, zoom out*
- *Display a vector map over the WMS layer (Hint: adjust opacity of the vector map)*

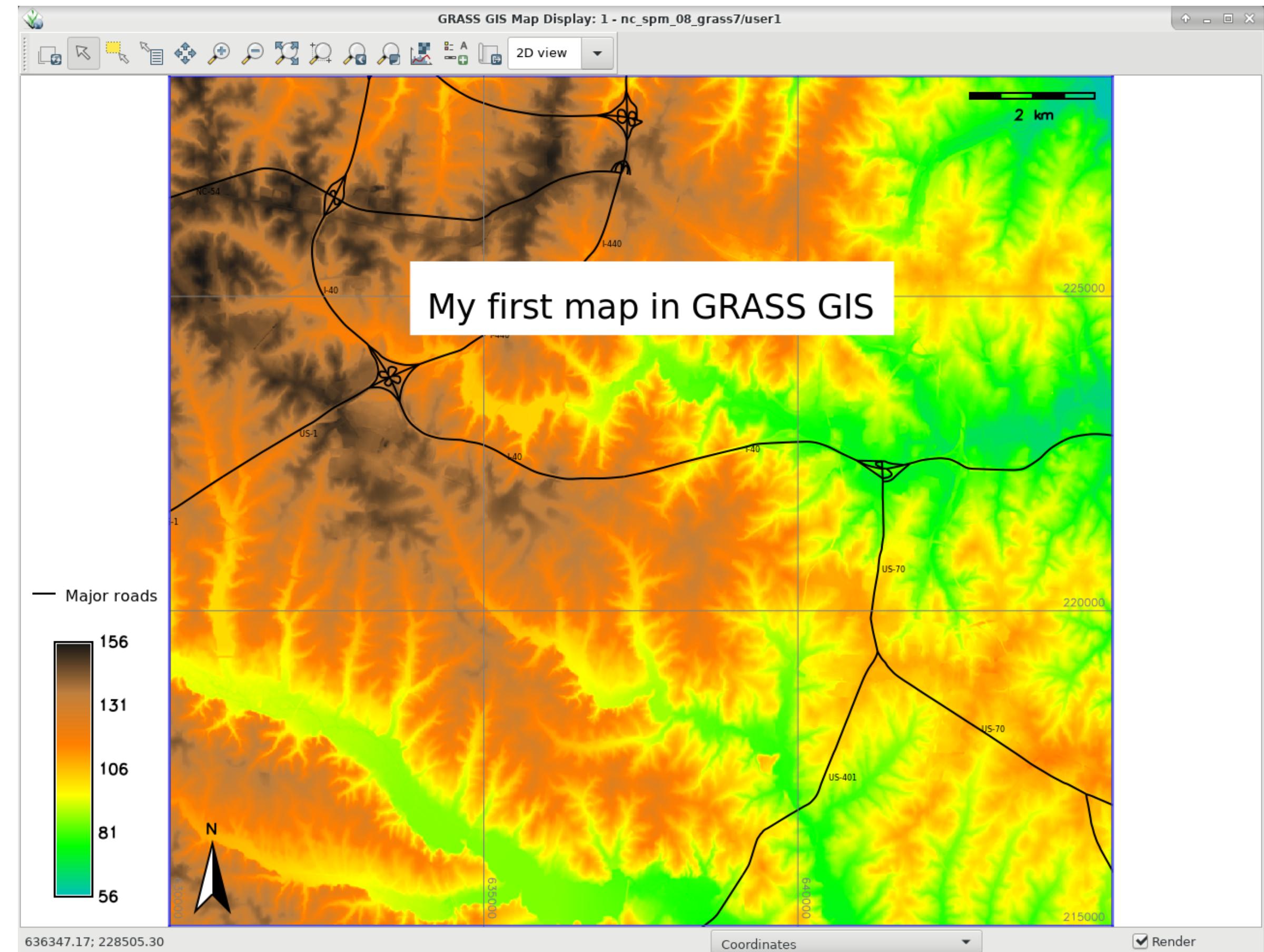
# Adding map decorations

## Task:

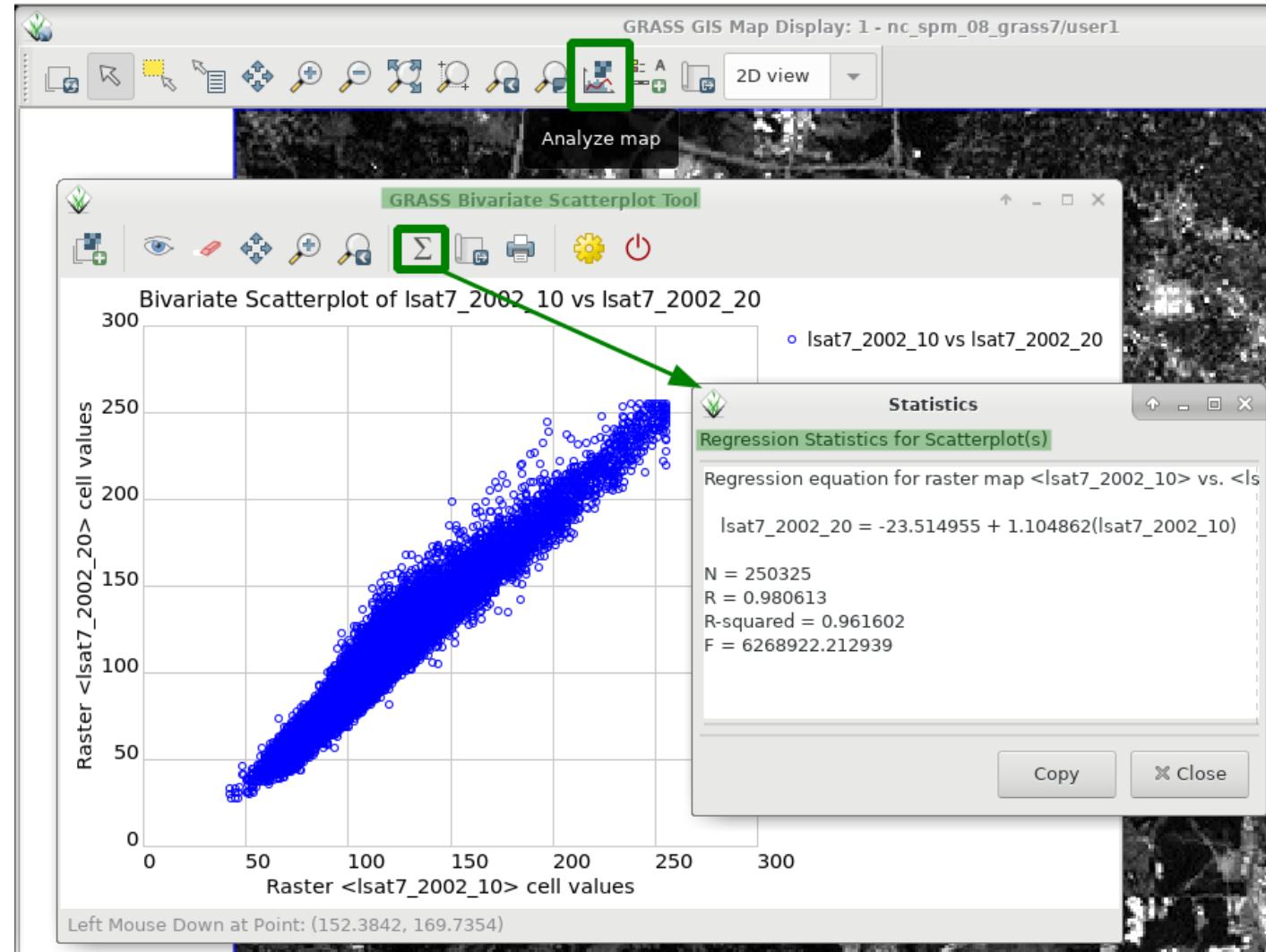
- *Display elevation and roads major maps*
- *Add grid over map*
- *Add roads labels (hint: right click over the map name in the Layer Manager)*
- *Add raster and vector legend*
- *Add scale bar*
- *Add North arrow*
- *Add a title*



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# Bivariate Scatter Plots



- Click over *Analyze map*
- Select *Bivariate scatterplot*
- Select 2 raster maps
- Explore the relationship among map values



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# Histograms

*Task: Explore the histogram tools on your own*

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**Thanks for your attention!!**





Now go to:  
Exercise 2: Create a new location and mapset

Presentation powered by

