A brief introduction to QGIS

QGIS (short for Quantum GIS) is a user friendly open source Geographic Information System. The QGIS project has been running since 2002 and has tens of thousands of users around the world. Being open source, the software is free to download, distribute and use. It is designed to be available on almost all operating systems with a standard interface. It is a direct competitor to commercial GIS applications such as Arcgis. There is an active developer community working on analytical tool development, and a simple plugin interface that enables users/researchers to write their own 'plugin' tools in the python programming language.

You can read more about the project at the QGIS website (http://www.qgis.org/).

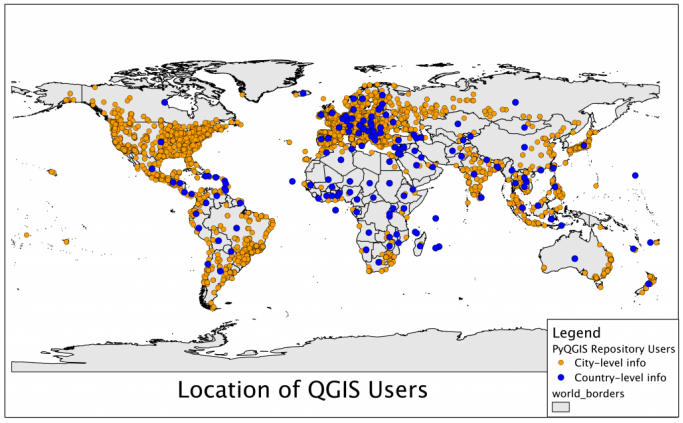

Illustration 1: Global spread of QGIS users - by Gary Sherman (http://spatialgalaxy.net/2011/12/19/qgis-users-around-the-world/)

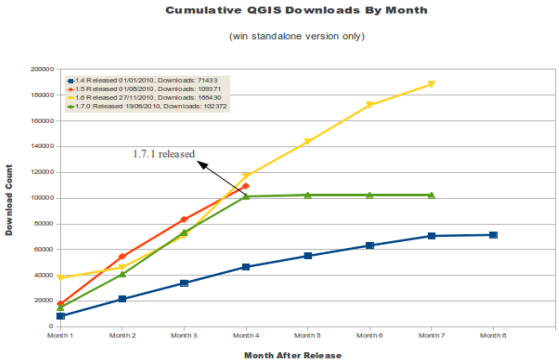

Illustration 2: QGIS downloads per month - by Tim Sutton (http://linfiniti.com/2011/10/qgis-1-7-0-download-stats/)

QGIS resources

The following resources could be useful when starting out with QGIS:

- The QGIS website (http://www.qgis.org/)
- Introduction to QGIS (http://www.qgis.org/en/docs/gentle_gis_introduction/index.html)
- The QGIS manual (http://qgis.org/en/documentation/manuals.html)
- “How do I do that in QGIS?” (http://hub.qgis.org/projects/quantum-gis/wiki/How_do_I_do_that_in_QGIS)
- Tutorials by Chris Yesson (http://www.zsl.org/science/ioz-staff-students/dr-chris-yesson/yessonteaching,1398,AR.html)
- The open source GIS mailing lists (http://osgeo-org.1560.x6.nabble.com/)

Data resources

When using a GIS, you need some GIS data. There are many data available on the web. Here is a summary of some useful sites and the data that is available

Reference

- (http://www.diva-gis.org/Data) DIVA-GIS is a free GIS application, the website has a list of free spatial data and provides links to lots of useful boundary shape files, such as political boundaries, roads, railways, rivers & lakes
- (http://protectedplanet.net/) Protected planet is the new version of the world database of protected areas providing vector files of protected areas for both terrestrial and marine environments

Elevation/bathymetry

- (http://gdem.ersdac.jspacesystems.or.jp/search.jsp) ASTER GDEM provide free digital elevation models at very high resolution, 1"x1" (~30m) for land between ~82ºN and 82ºS
- (http://www2.jpl.nasa.gov/srtm/cbanddataproducts.html) The shuttle radar topography mission provide global elevation data at a local scale up to 3"x3" (~90m)
- (http://topex.ucsd.edu/WWW_html/srtm30_plus.html) The shuttle radar topography mission has combined dem & bathymetry grid at 30"x30" (~1km)
- (http://www.gebco.net/data_and_products/gridded_bathymetry_data/) The general bathymetric chart of the oceans provides gridded bathymetry data for the globe at 30"x30" (~1km). Also available integrated with terrestrial DEM

Environment

- (http://www.worldclim.org/) Worldclim provide raster grids of environmental data such as elevation, surface temperature and precipitation at a variety of resolutions up to 30"x30" (~1km)
- (http://www.nodc.noaa.gov/OC5/WOA09/pr_woa09.html) The world ocean atlas provides temperature, salinity, oxygen and other information on a 3 dimensional grid of the oceans at 1º x 1º x 33 depth levels
- (http://www.aquamaps.org/download/main.php) Aquamaps provide sea-surface and sea bottom grids for temperature, salinity and productivity at 30' x 30'
- (http://meta2.isric.org/geonetwork/srv/en/main.home) World Soil Information
- (http://oceancolor.gsfc.nasa.gov/) Ocean colour web provides data access to satellite data including MODIS and SeaWIFS providing primary productivity and NDVI data for land & sea

Images

- (http://visibleearth.nasa.gov/) Satellite images including blue marble monthly global satellite images