

GRASS GIS

Overview Workshop

3 Feb 2012

CS 426/628



Topics

- GRASS GIS Overview
 - History
 - High level data structure and permissions
- Workshop
 - Gently interface overview
 - Otters, practical example



GRASS GIS

- Open Source GIS software
 - <http://grass.fbk.eu/>
- Tutorial
 - http://www.ing.unitn.it/~grass/docs/tutorial_64_en/htdocs/esercitazione/index.html
- General Presentation
 - [Reference/GRASS_geostat_landau_2011_intro.pdf](#)
- Textbook
 - Open Source GIS, A GRASS GIS Approach <http://www.grassbook.org/>
- Goal for first starting GRASS project?

History

- CERL: US Army Construction Engineering Research Laboratory
- Military land management
 - Locate new weapon firing ranges or vehicle training routes
 - Constraints:
 - Other potential uses (wildlife management, forestry, agriculture)
 - Endangered species/habitats
 - Noise impacts
 - Contaminants
- Differentiation
 - Raster
 - Image processing



Introduction to GRASS GIS

Geostat 2011, Landau, Germany

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<http://grass.osgeo.org>
<http://www.grassbook.org>

Fondazione E. Mach,
S. Michele all'Adige, Italy
<http://gis.cri.fmach.it/>





What's GRASS GIS?

<http://grass.osgeo.org>

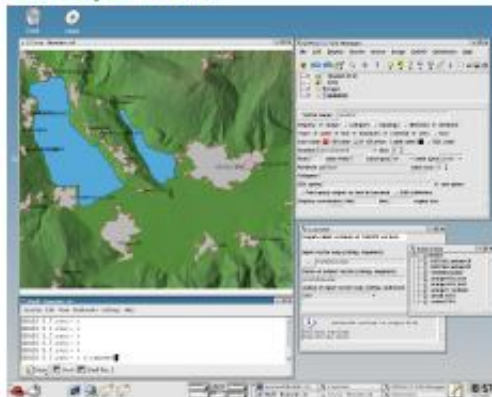
- **Geographic Resources Analysis Support System**
- **Open Source GIS**, developed since 1984, since 1999 GNU GPL
- **Portable code** (multi-OS, 32/64bit)
- Your **GIS backbone** – linked to:



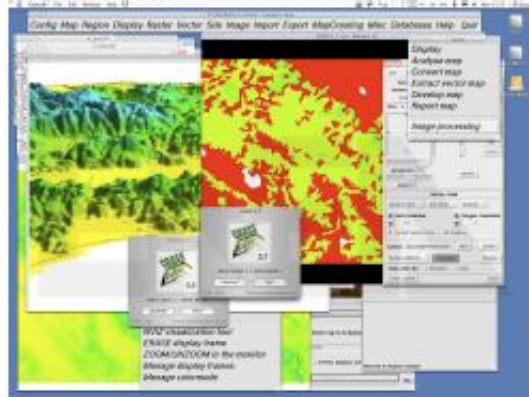
ZOO
<http://zoo-project.org>



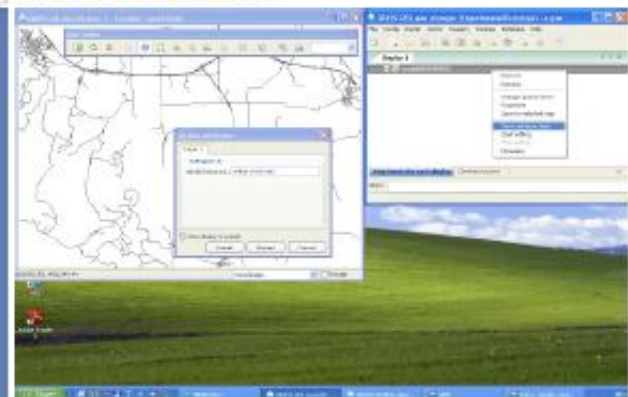
GNU/Linux



MacOSX

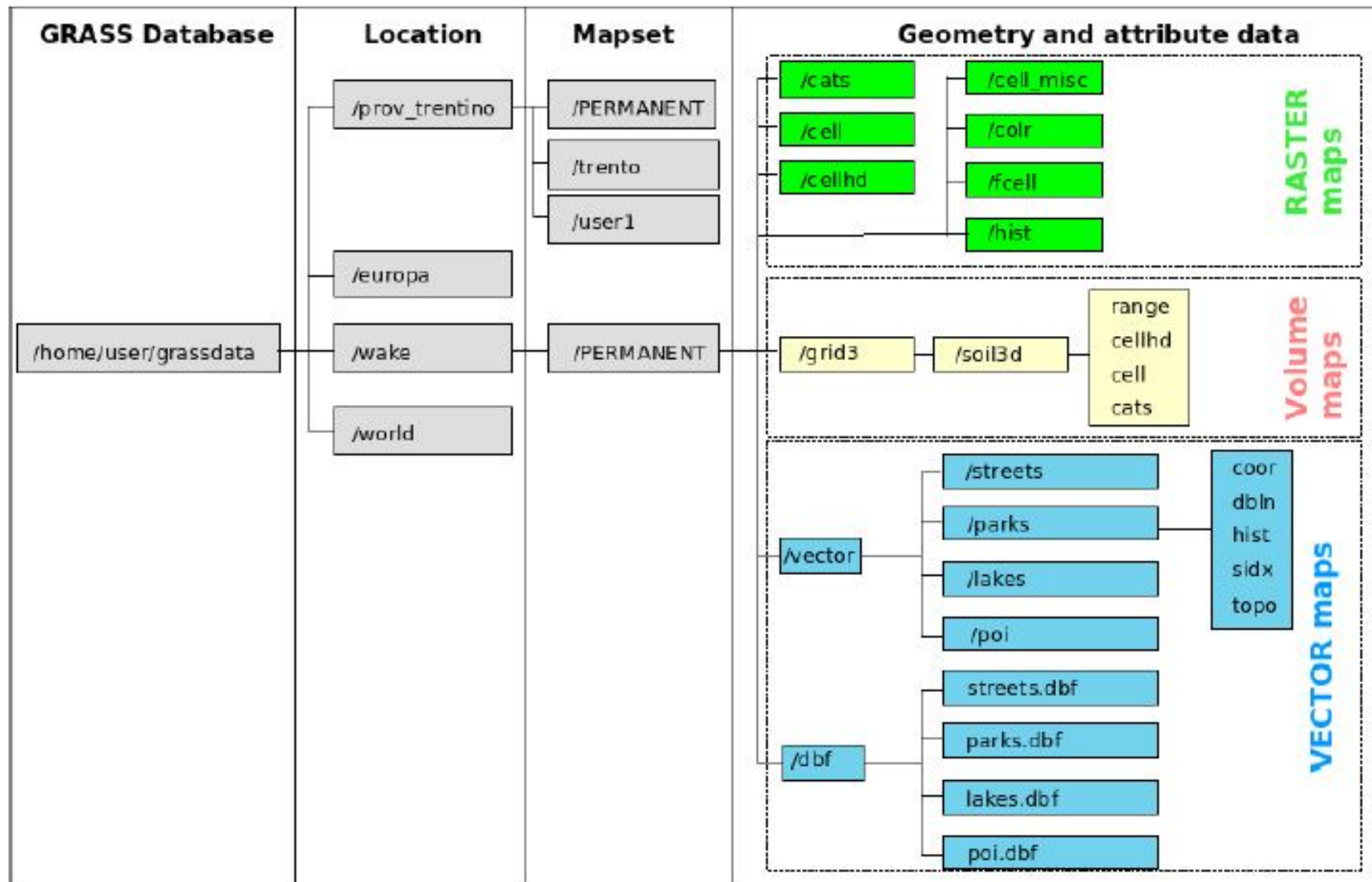


MS-Windows





GRASS Database concept: graphical view

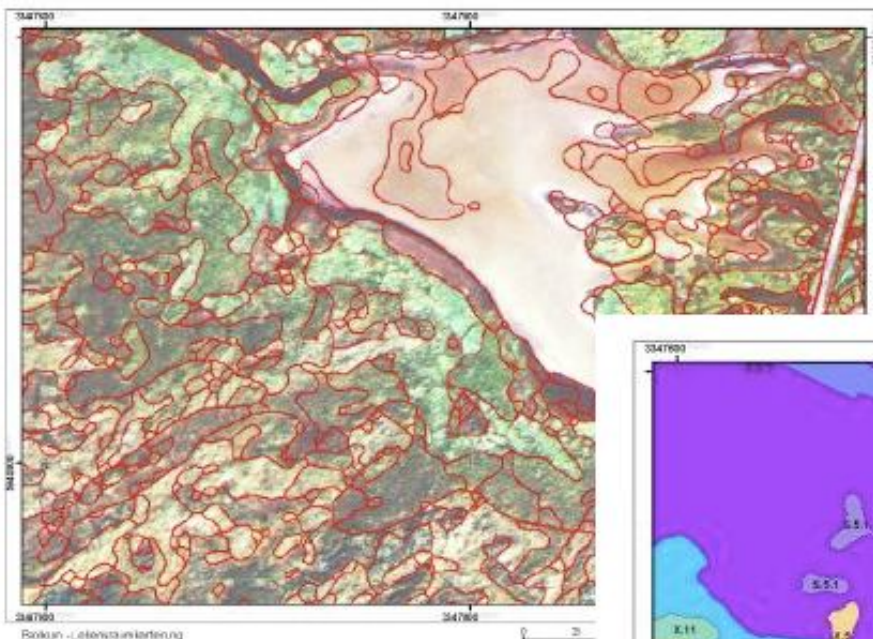


Note: GRASS is handling this for you!



Image processing capabilities

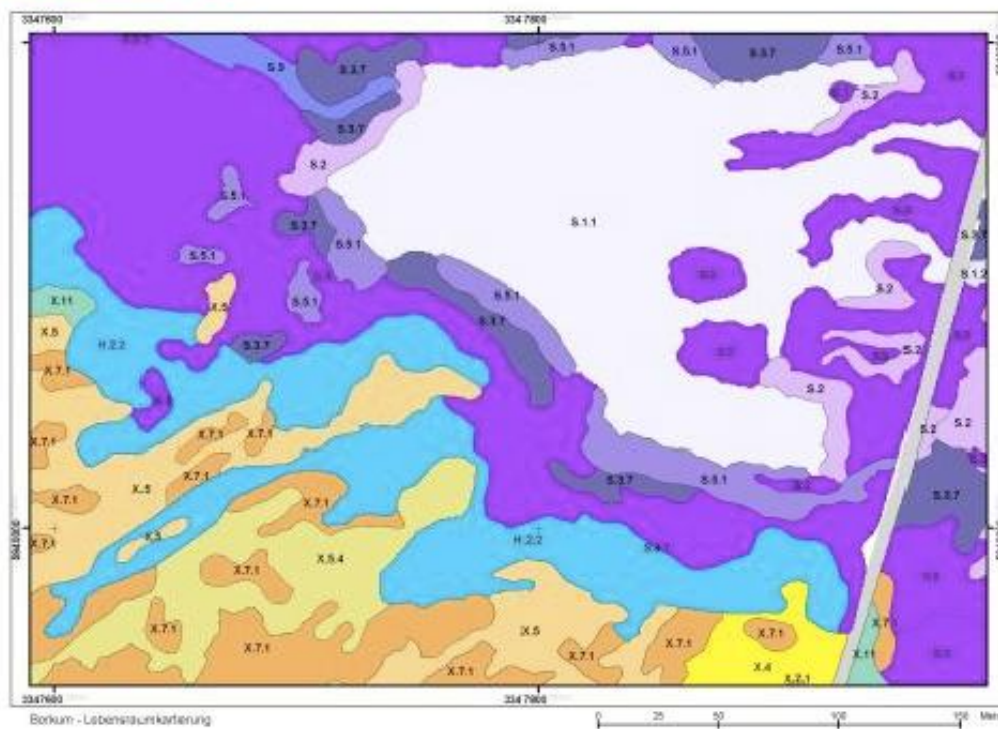
Image classification



GRASS supports

- Image geocoding and ortho-rectification
- Analysis of aerial and satellite data
- Time series analysis

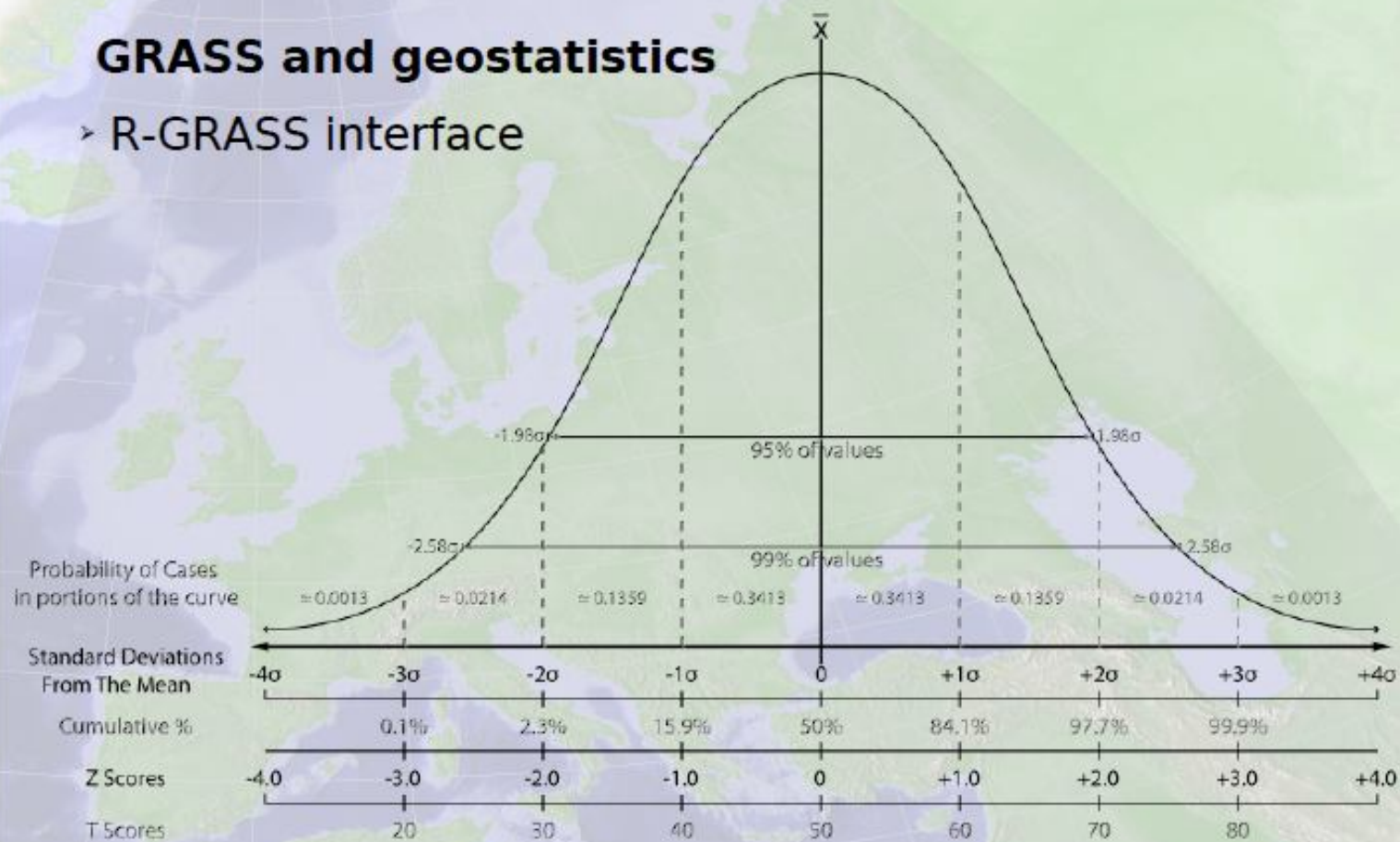
- Biotope monitoring from digital aerial cameras (HRSC-X and DMC)
- SMAP Classifier of GRASS





GRASS and geostatistics

➤ R-GRASS interface



Workshop

- Guided Tour
 - Gentle interface overview
- Exercise
 - Otters' habitat
 - Import shape file
 - Vector->raster conversion
 - Buffers
 - Reclassification
 - Raster Calculations ?

