INTRO TO GVSIG

A POWERFUL OPEN SOURCE DESKTOP GIS

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TERRA GIS
TERRESTRIAL ENVIRONMENT REGIONAL ANALYSIS

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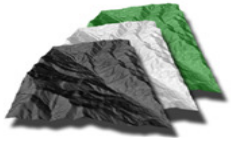
gvSIG – Generalidad Valenciana

Conselleria d'Infraestructures i Transport

- project - Spanish Community of Valencia
- mid range Desktop GIS
- based on open standards
- part of gvPONTIS project

  http://www.gvpontis.gva.es/fileadmin/conselleria/images/Documentacion/memoria/gvpontis_ingles.pdf

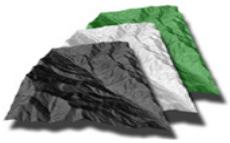


SEXTANTE

- project - Spanish province of Extremadura

  Sistema Extremeno de Analisis Territorial
- java based plug-in for gvSIG
- offers more than 280 spatial functions raster and vector processing

  originally targeted at forestry usage
  initially based on SAGA GIS



SEXTANTE

gvSIG is a project of the Spanish province of Valencia. The goals of the project are to provide an open source GIS that is platform independent and based on open source standards. Basically the capabilities should be comprehensive enough to replace ESRI's ArcView 3 desktop GIS. The user interface and functionalities of gvSIG are similar to ArcView 3, but in addition has capabilities to connect to Internet mapping services.

Another Java based project of the autonomous region of Extremadura called Sextante can be installed as a plug-in and offers more than 270 spatial functions.

SEXTANTE

Main supporter of **gvSIG**	Generalitat Valencia (GVA) - Province of Valencia, Spain
Type	Desktop GIS
Functionality	Multilingual Desktop GIS - Analysis functions can be greatly extended when installing Sextante. Many extensions.
Operating systems	Unix/Linux, Windows
Project started	2003
Implementation	Java
OS libraries	GeoTools and JTS
PostGIS support	Yes
License	GPL

gvSIG association

gvSIG and Sextante facts

Main supporter of **Sextante**	Sextante Team, Victor Olaya, Juan Carlos Giménez
Functionality	Comprehensive set of spatial vector data and image analysis tools
Operating systems	Unix/Linux, Windows
Project started	2004
Implementation	Java
OS libraries	built on top of SAGA GIS functionality
PostGIS support	Yes
License	GPL

gvSIG Distributions

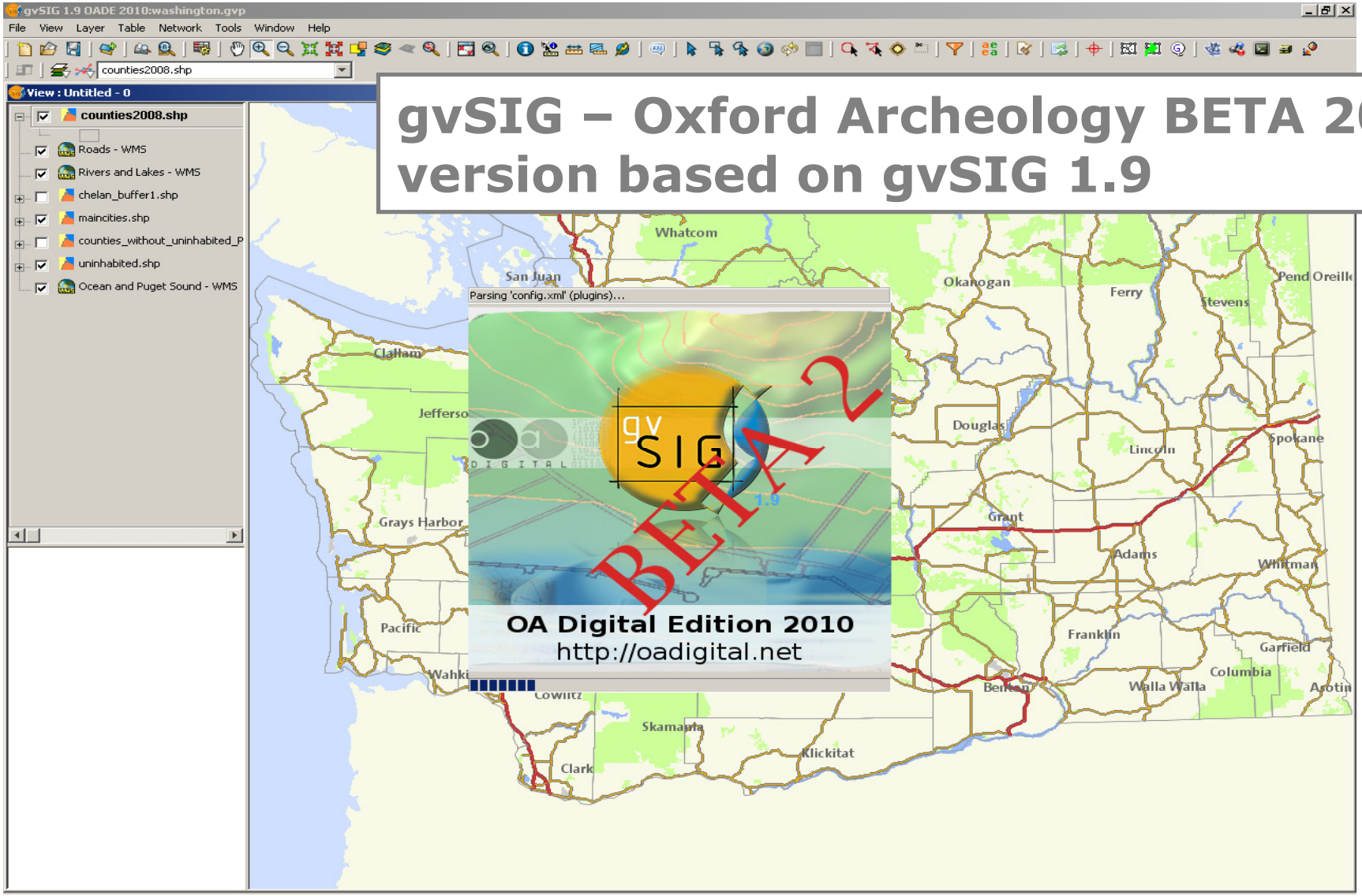
Official

- Desktop version 1.10 RC2
  - Extensions
    - Sextante Analysis
      - 3D visualization
      - Network analysis
- Mobile - *GIS/SDI client on mobile devices.*
- Mini - *map viewer for mobile phones e.g. Yahoo, Google, Bing, OSM tiles*

Oxford Archeology

gvSIG 2010 OADE version 1.0.
based on gvSIG 1.10
Win, Unix + Mac OS X !

gvSIG – Oxford Archeology BETA 2010 version based on gvSIG 1.9



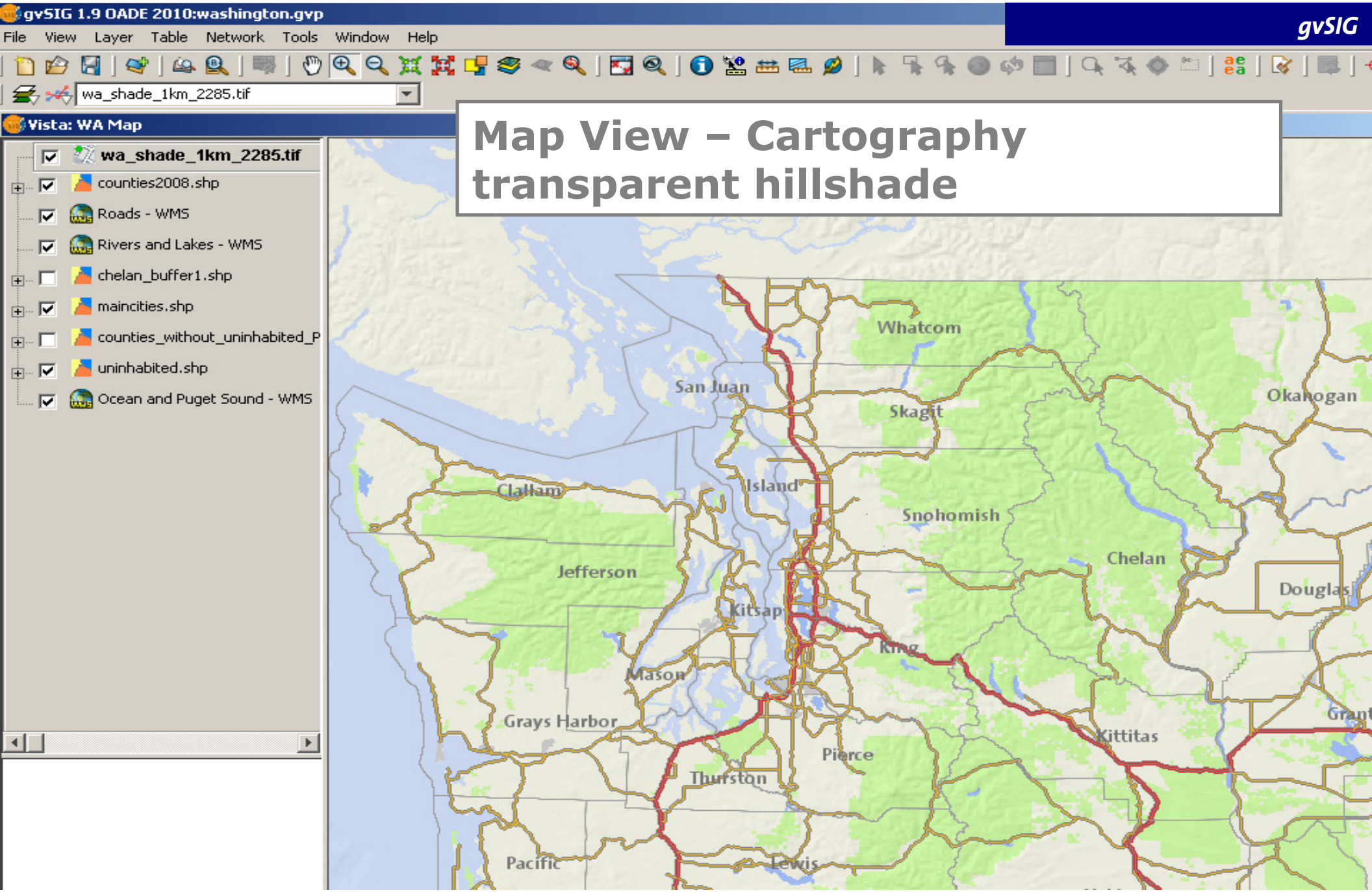
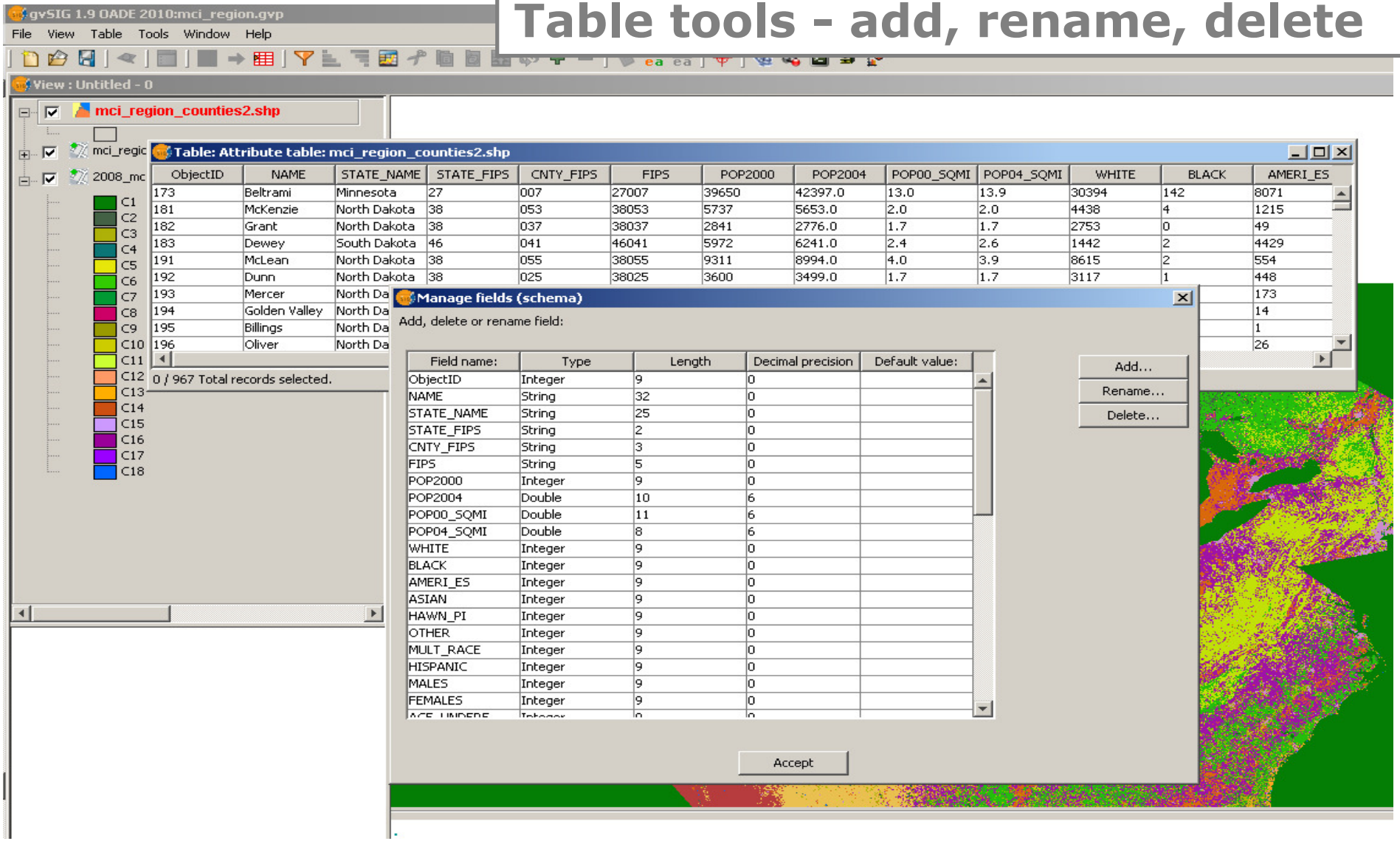

gvSIG 1.9 OADE 2010:washington.gvp
gvSIG
File View Layer Table Network Tools Window Help
wa_shade_1km_2285.tif
Vista: WA Map
wa_shade_1km_2285.tif
counties2008.shp
Roads - WMS
Rivers and Lakes - WMS
chelan_buffer1.shp
maincities.shp
counties_without_uninhabited_P
uninhabited.shp
Ocean and Puget Sound - WMS
Map View – Cartography
transparent hillshade
Whatcom
San Juan
Skagit
Okanogan
Island
Clallam
Snohomish
Chelan
Jefferson
Douglas
Kitsap
King
Mason
Grays Harbor
Kittitas
Pierce
Thurston
Pacific
Lewis

Table tools - add, rename, delete



gvSIG Geoprocessing Tools

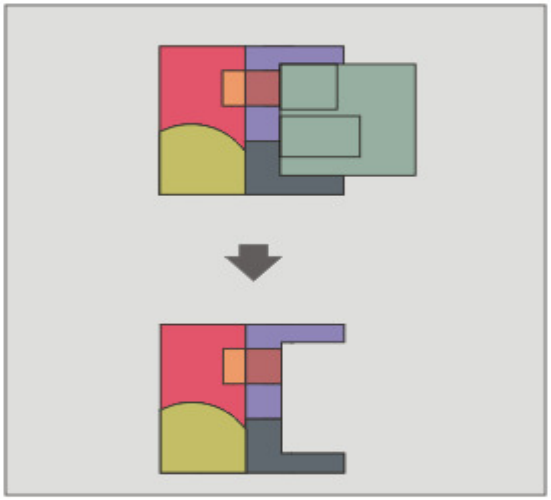
Geoprocessing tools...

- Geoprocessing tools
  - Analysis
    - Proximity
      - Buffer zones
      - Spatial join
    - Overlay
      - Clip
      - Difference
      - Intersection
      - Union
    - Computational geometry
      - Convex hull
      - Voronoi/Delaunay
    - Aggregation
      - Dissolve
  - Data conversion
    - Merge
    - XY shift (2D)
    - Reproject
    - Generalize
    - Smooth
    - Transform
  - Topology
    - Flip lines
    - Reduce to lines
    - Reduce to points
    - Clean
    - Build polygons

Difference

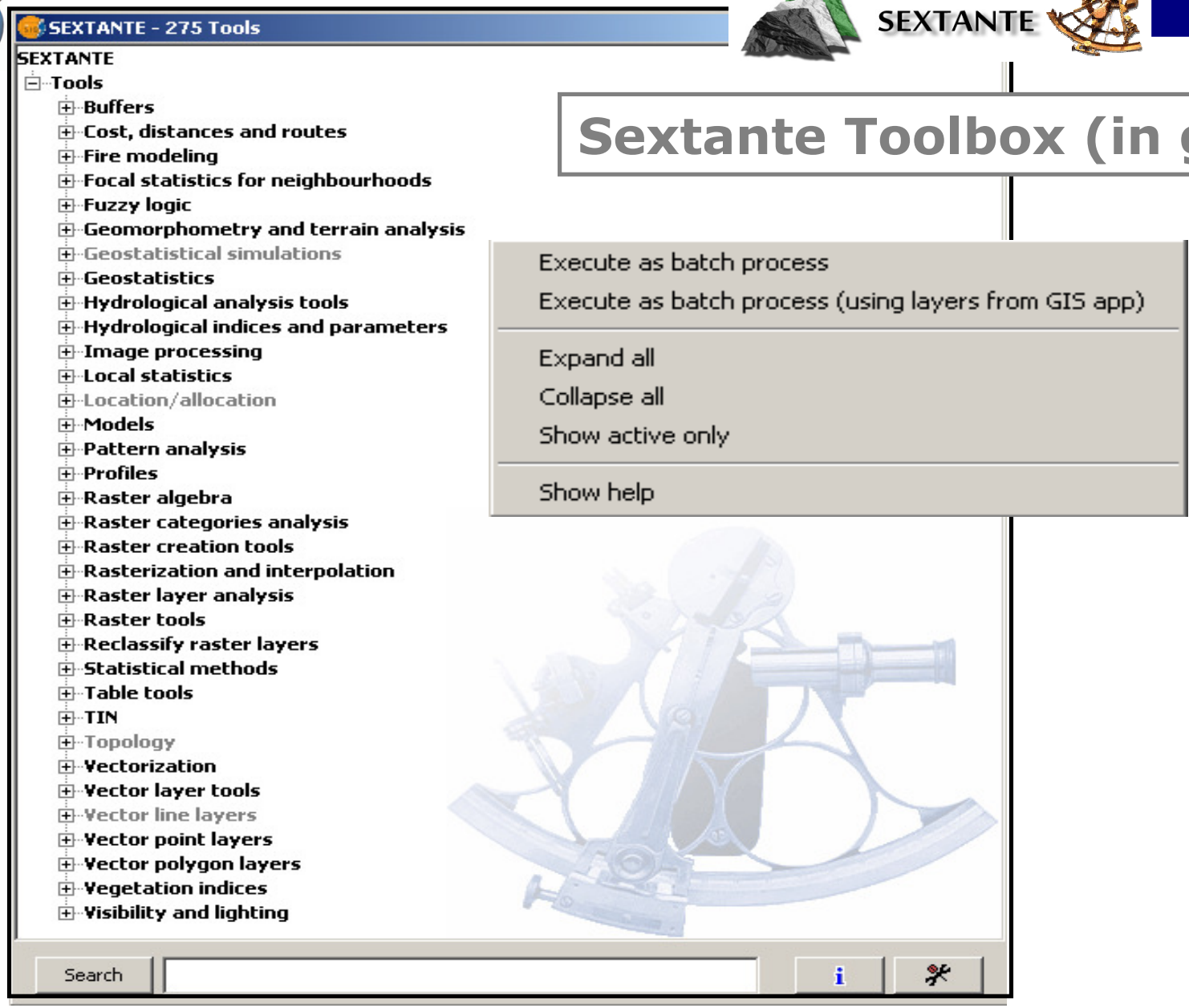
This tool performs a geometric *overlay* operation. It works on two layers, an input layer **A** and an overlay layer **B**. The procedure is also called a "spatial NOT" operation, because it includes all geometries of **A** that are *not* present in **B**.

Owing to its geometric nature, this operation only works for *polygon* type layers. The result layer will have a copy of the attribute table of the input layer.

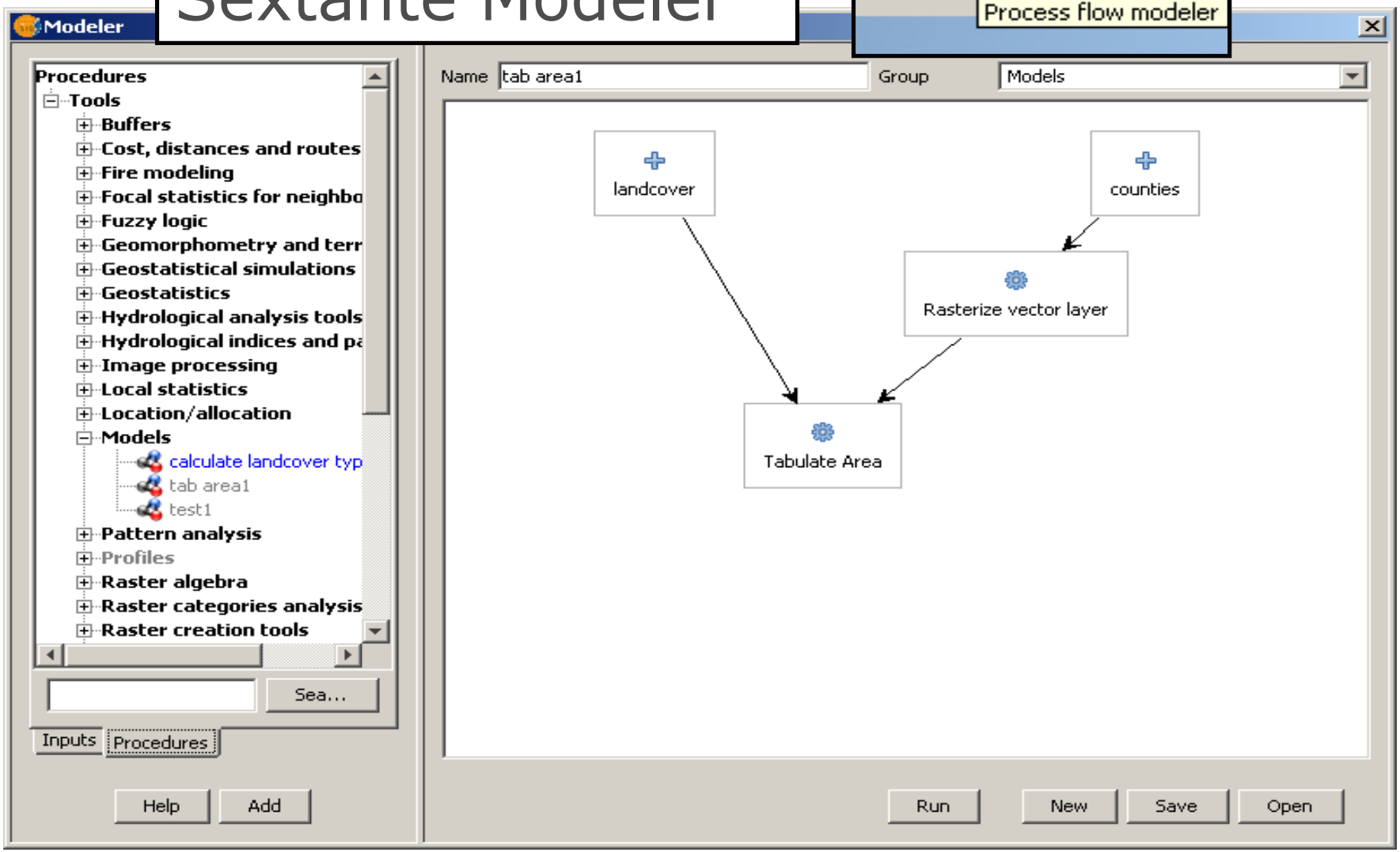


Open tool... Close

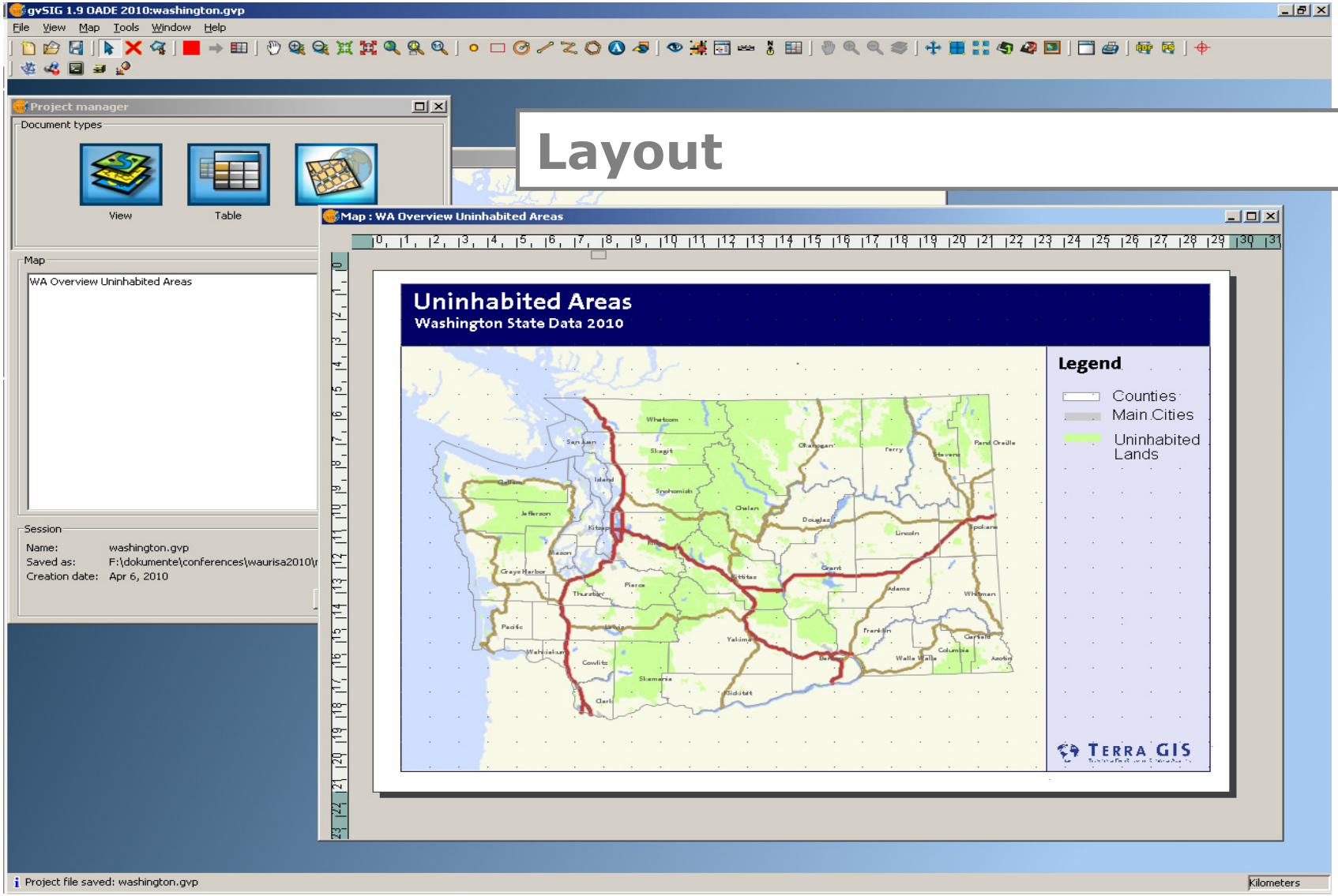
Sextante Toolbox (in gvSIG)



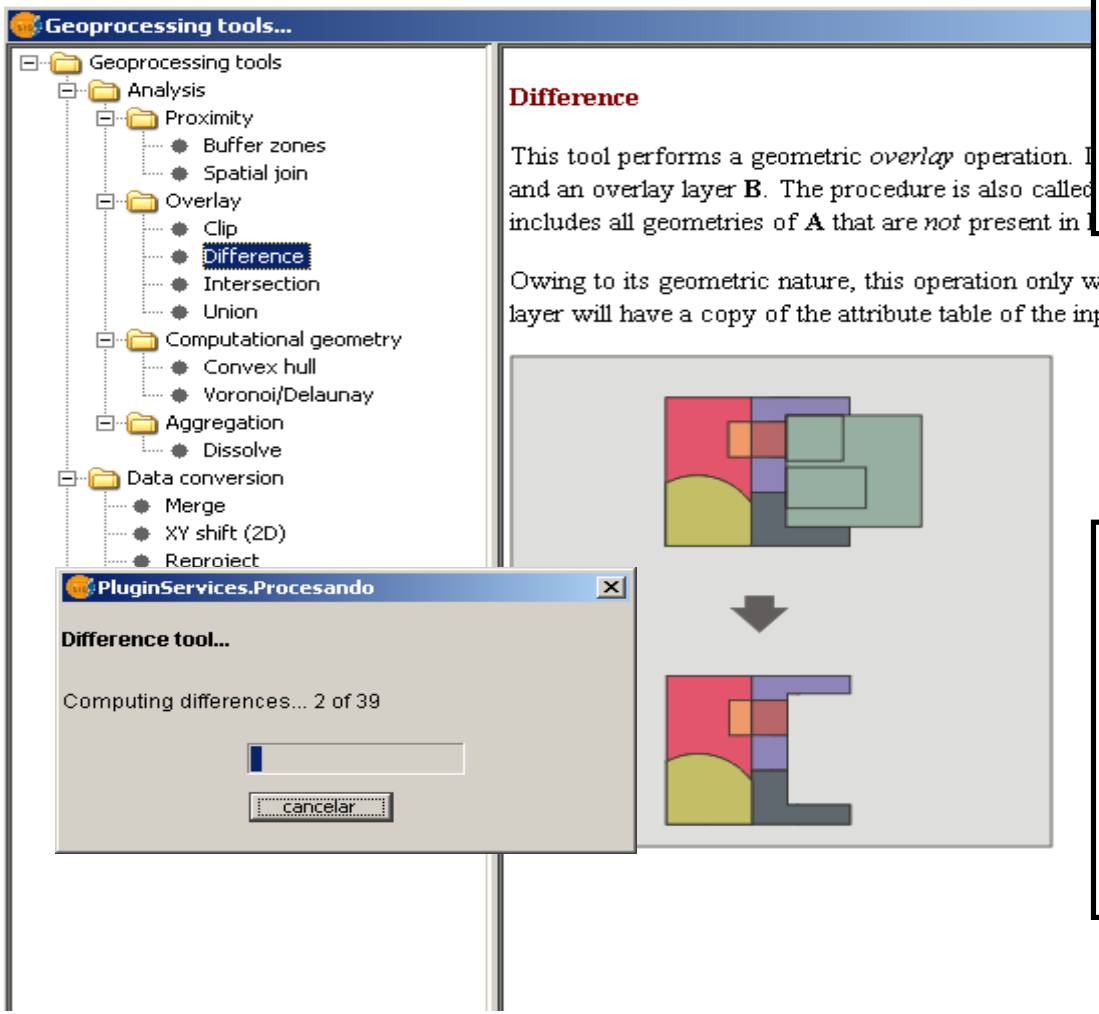
Sextante Modeler

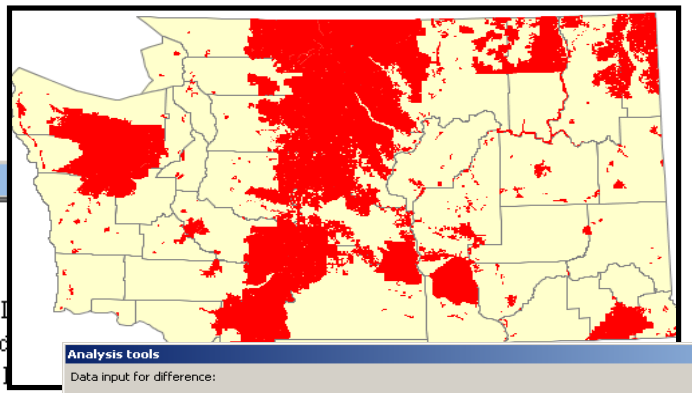


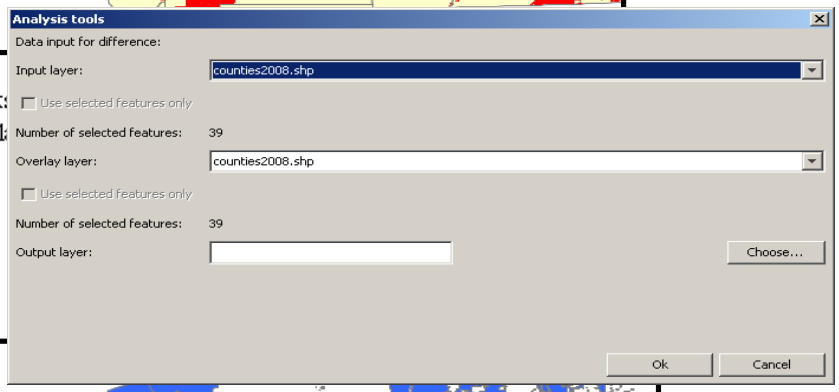
Layout

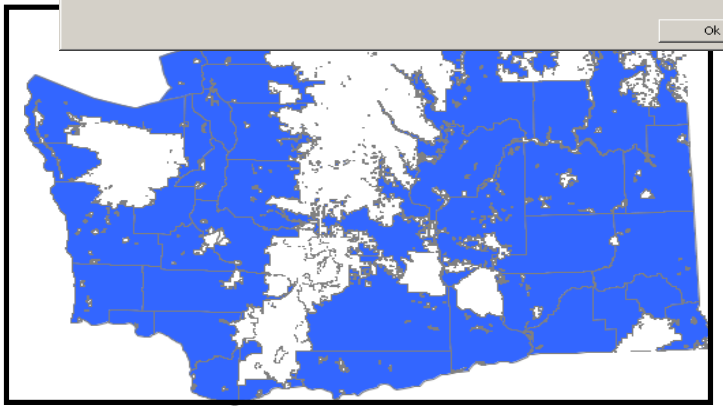

gvSIG 1.9 OADE 2010:washington.gvp
File View Map Tools Window Help
Project manager
Document types
View
Table
Map
WA Overview Uninhabited Areas
Session
Name: washington.gvp
Saved as: F:\dokumente\conferences\waurisa2010\
Creation date: Apr 6, 2010
Map : WA Overview Uninhabited Areas
Uninhabited Areas
Washington State Data 2010
Legend
Counties
Main Cities
Uninhabited Lands
TERRA GIS
Project file saved: washington.gvp
Kilometers

Overlay - Difference









- functionality examples
  - reprojection
  - batch processing
  - dissolve
  - format conversion
  - editing

Importing data into PostGIS

shp2pgsql + pgsql2shp

shp2pgsql -I -s 2285 counties2008.shp counties_pg > counties.sql

psql -U postgres -d weave –f counties.sql

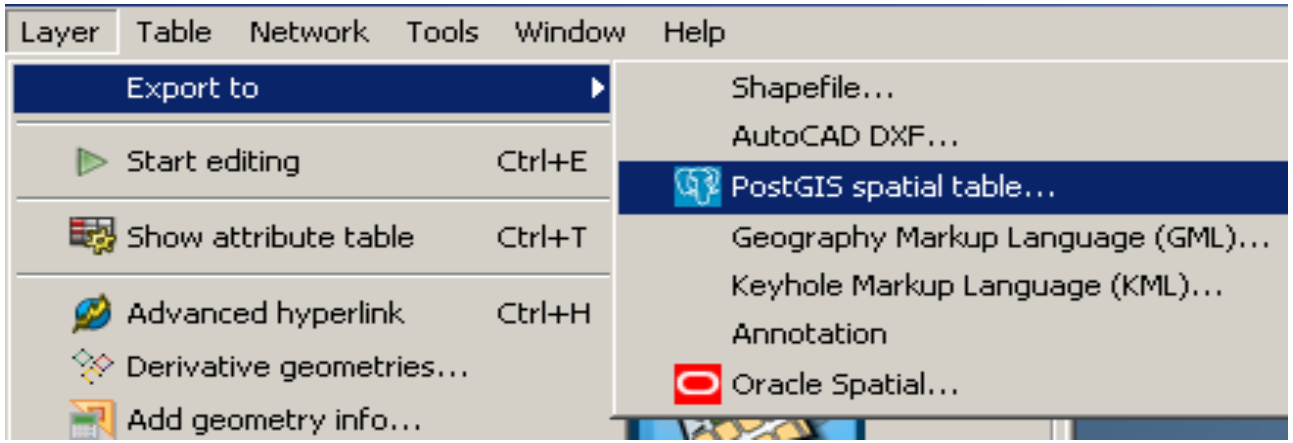
Can combine both with "|"

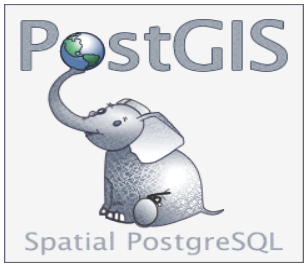
ogr2ogr

ogr2ogr -f "PostgreSQL" PG:"host=localhost user=postgres port=5432 dbname=workshop password=postgres" streamnet_fishdist.mdb -lco GEOMETRY_NAME=the_geom -t_srs "EPSG:2285" -nln "Fish_AllSpeciesCombined" fishspecies

user interfaces

gvSIG etc.





PostGIS – Spatial Database

- PostGIS is an extension for PostgreSQL
- adds support for geographic objects to PostgreSQL
- enables PostgreSQL server to be used as a backend spatial database for GIS
- Spatial operations and analysis simply mean running a (spatial) SQL query in the database
- Similar functions as SDE and much more ….

Links

- gvSIG http://www.gvsig.org/web/
- gvSIG Association http://www.gvsig.com/welcome?set_language=en
- gvSIG at OSGEO http://www.osgeo.org/gvsig
- gvSIG project information
  http://www.gvsig.org/web/projects/gvsig-desktop/description2/view?set_language=en
- gvSIG OA Digital Edition 2010, 1.0. http://oadigital.net/software/gvsigoade
- blog post about gvSIG GIS by Karsten
  http://www.waurisa.org/phpBB3/viewtopic.php?f=37&t=636&start=0&st=0&sk=t&sd=a
- gvSIG overview - CSGIS website
  http://csgis.de/joomla/index.php?option=com_content&view=article&id=102&Itemid=96
- gvSIG Case Studies http://gvsigusecases.drupalgardens.com/