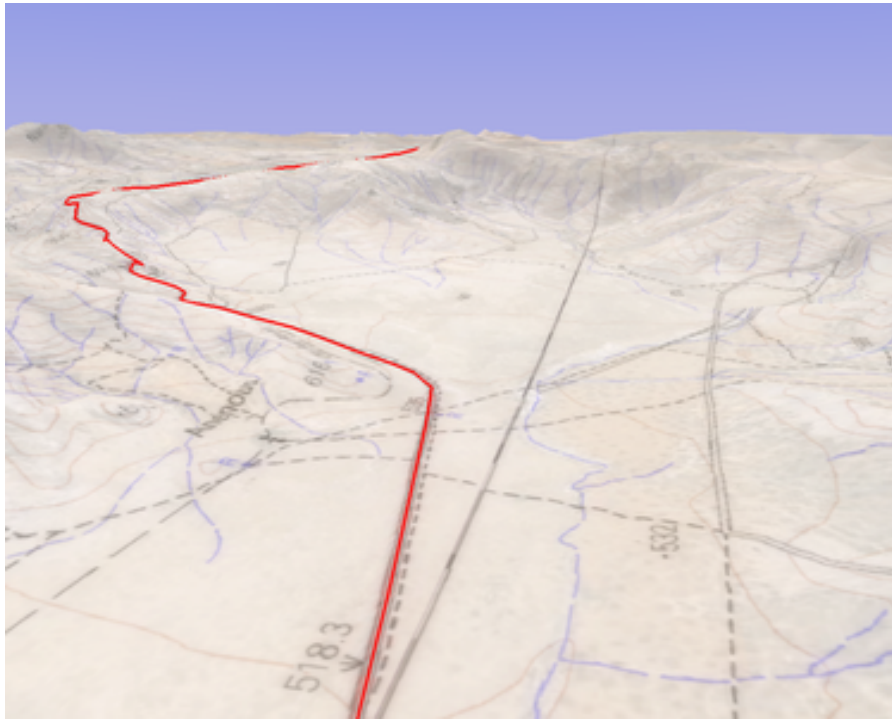
TopoGlide

Seamless 1:50000 Topographical Maps



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Introduction

TopoGlide is a version of the 1:50000 series topographical maps of South Africa that has been converted for seamless viewing in Google Earth. TopoGlide contains both the 1:50000 raster and vector data sets as created by the Chief Directorate: Surveys & Mapping. The data have been extensively reworked to produce the seamless set available in TopoGlide.

TopoGlide allows you to scroll through the entire country while only loading the portions of the dataset that are relevant to your current view. This allows you to effortlessly examine the entire 60 GB dataset on standard PC hardware. The fact that TopoGlide exists in Google Earth allows you to use the standard GIS tools available for Google Earth such as altitude profile mapping, path length calculation etc. If you purchase Google Earth Plus you can update your position from GPS directly onto the TopoGlide maps.

TopoGlide removes all the effort from working with the 1:50000 series of maps. No more remembering of map coordinates or finding a object on the split between two maps. TopoGlide presents the whole country in a single seamless dataset.

Using TopoGlide

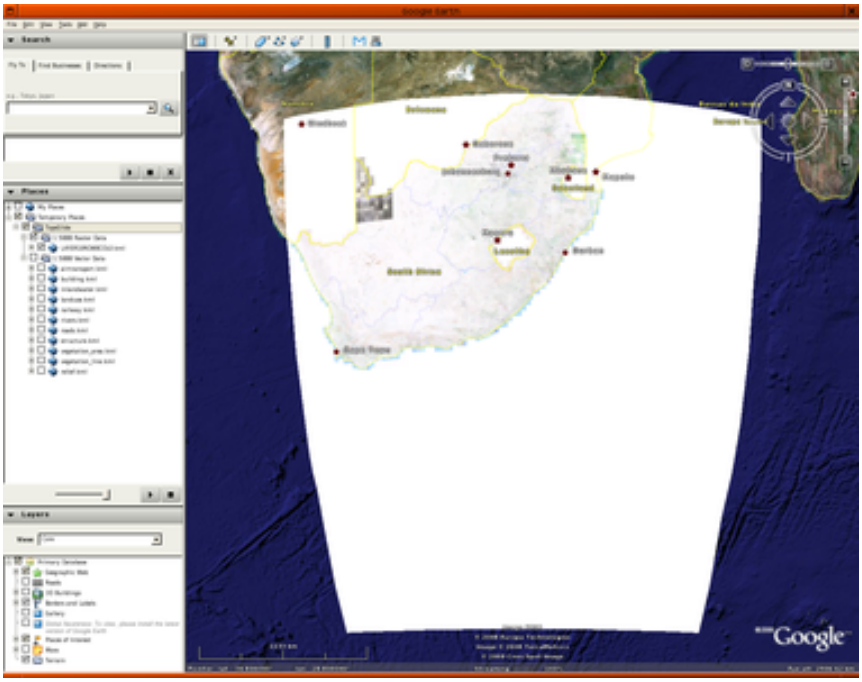
Installing Google Earth

TopoGlide uses Google Earth as a viewer for the TopoGlide Data. To use TopoGlide you need to install a recent version of Google Earth on your computer. Google Earth can be downloaded from `http://earth.google.com/`. Please follow the installation instructions on the Google Earth webpage.

Opening TopoGlide in Google Earth

After plugging-in the TopoGlide USB hard drive it will show up as a new drive letter on Windows (typically E: or F:). On Linux the hard-drive will typically be mounted on /media/TopoGlide.

Open the Google Earth application, and use the File->Open menu to navigate to the root of the TopoGlide drive. Open the "TopoGlide.kml" file. The main map screen should zoom to an area around South Africa. At this point your screen should look like this:



By default the 1:50000 raster image data are selected and overlaid onto the mapping area. The middle area to the left contains a TopoGlide folder showing which layers are available.

It is recommended that you are connected to the internet the first time you use Google Earth after a new installation. Google Earth retrieves required data from the internet the first time it is run. After the first time you can use TopoGlide without being connected to the internet, but keep in mind that other Google Earth data such as satellite images and terrain data cannot then be retrieved.

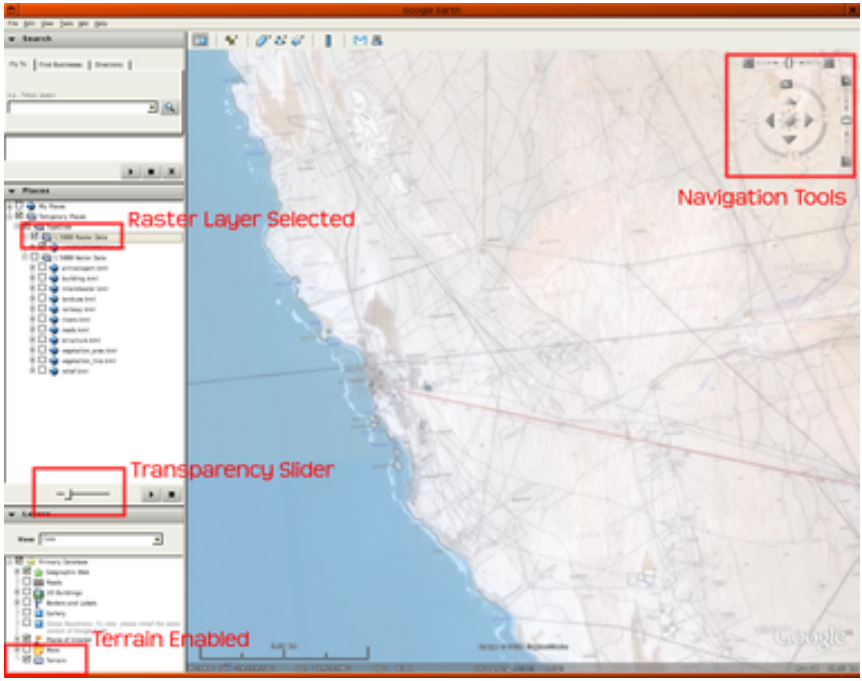
Working with TopoGlide raster data

The TopoGlide raster data are selected by default when the "TopoGlide.kml" is opened in Google Earth. You can navigate as you normally would in Google Earth while TopoGlide will automatically update the 1:50000 topographical sheets as you move over them. You can set the opacity of the raster layer using the transparency slider and peek through to the satellite image below. If you are using the transparency slider please check to make sure that the "1:50000 Raster Data" layer is selected.

Also, if the "Terrain" checkbox is ticked, Google Earth will drape the TopoGlide data over 3D terrain data for the area in view. You can use the navigation tools in the upper right to tilt your view. The source for the Google Earth terrain data are the SRTM 3 data and that this will not line up perfectly with the contour data on the 1:50000 raster layers. If you are using this be prepared to see contours that run up and down mountains! It remains an excellent tool for visualizing terrain but be aware that the two datasets are not perfectly compatible.

Please note that you have to be connected to the internet for the satellite images and the terrain features to work.

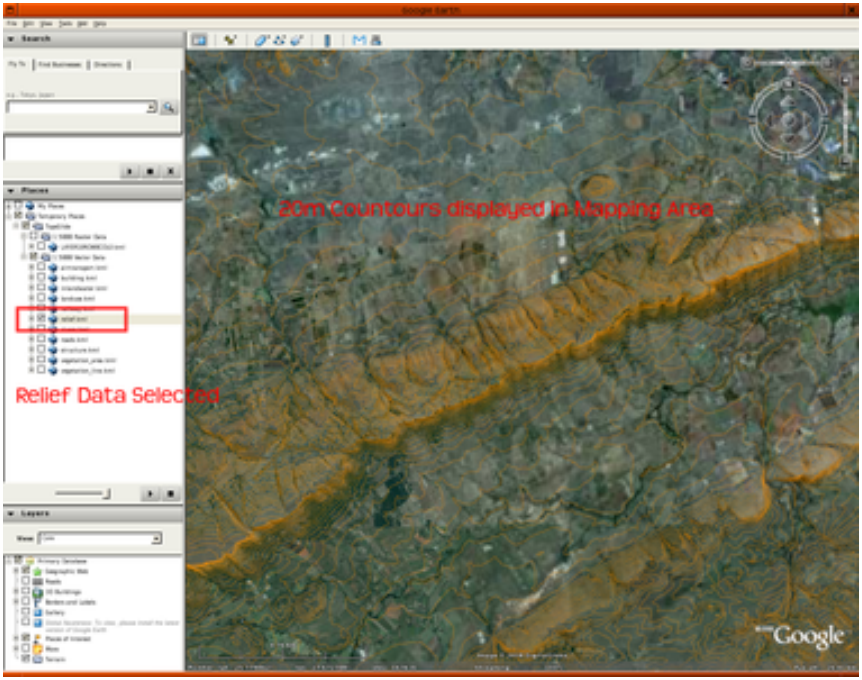
Here is a screenshot showing the relevant areas of the application:



Working with TopoGlide vector data

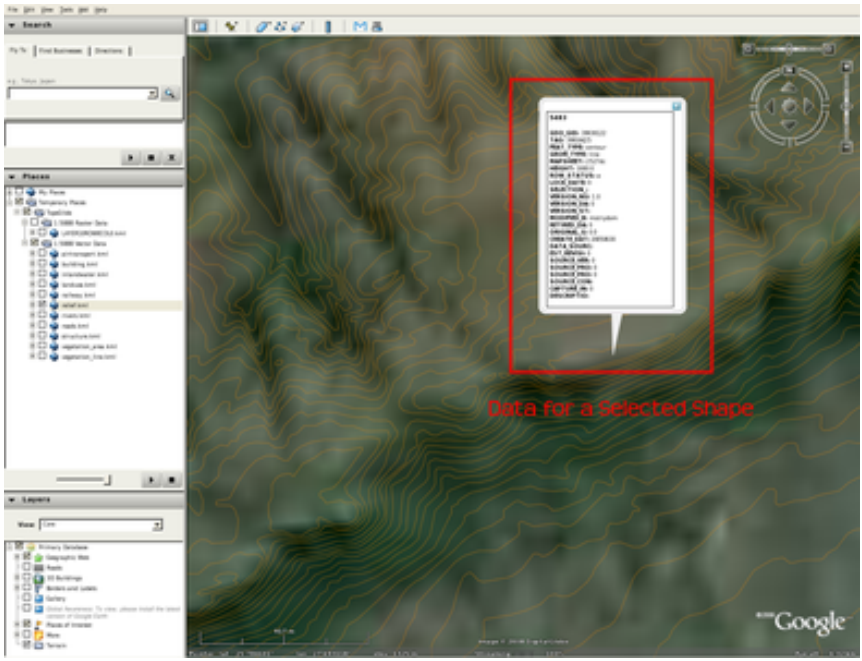
Working with the TopoGlide vector data can place large load on your computer. It is recommended that you close unnecessary applications. Also it is recommended to disable the raster data layer and vector layers that are not directly needed by your application.

To reduce the load on your computer the vector data will only load once you have zoomed in far enough for the data to be relevant. It is recommended that you zoom in to your area of interest first and then enable the vector layer you wish to view. It could take some time for Google Earth to load the relevant data. Dense datasets such as Relief or Rivers can take up to two or three minutes to fully load. Here is a section of the Magaliesberg with vector relief data loaded:



Once the data have loaded and are drawn on screen you can scroll around and use Google Earth as you normally would.

You can find information about a specific contour, river or road by holding down the <CTRL> key while clicking on it. This will bring up a information box containing all relevant data about that specific shape. An example is shown below:

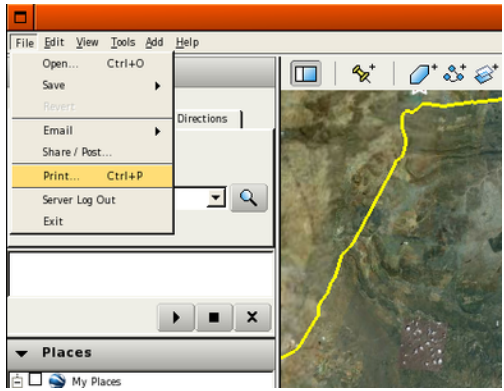


Right-Clicking on a shape while holding the <CTRL> key will bring up the Properties window for that specific shape. This allows you to change colors and edit individual shapes.

Please note that these changes can be written back to the TopoGlide dataset if you are not careful about where you save things. This can result in potentially overwriting the data on your TopoGlide hard drive. In such an event the hard drive can be returned for re-imaging.

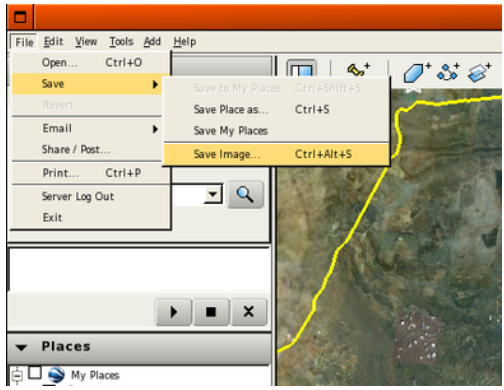
Printing TopoGlide data from Google Earth

You can print a view of what is currently on screen by using the Print function from the File menu in Google Earth. The Plus, Pro and Enterprise versions of Google Earth allow for high resolution printing while the free version allows for printing at the screen resolution. The relevant menu is shown below:



Saving TopoGlide data from Google Earth

You can save an image of what is currently on screen by using the Save Image function from the File menu in Google Earth. The Plus, Pro and Enterprise versions of Google Earth allow for saving high resolution images while the free version allows saving what is currently visible on the screen. The relevant option is shown below:



Frequently Asked Questions

The raster dataset does not line up exactly with the satellite images below. What now?

Because of the difference in projection used by Google Earth (Equidistant Cylindrical) and the Chief Directorate: Surveys & Mapping (Gauss-Krueger) it is not possible to create seamless raster tiles for display in Google Earth without some95 offset error. It is recommended that the satellite image only be used for reference when also using the raster data set. The accuracy of the vector data set should be as good as the digitization done at the Chief Directorate: Surveys & Mapping. Google Earth does not provide absolute accuracy data for its satellite images, so these are not infallible either.

Polygons in the vector dataset just show up as white areas

This is probably a problem with your video card or display driver. It is recommended that you update your video card drivers to the latest release. If problems persist, searching on the Google Earth forums may help. An alternative is to run Google Earth in "Safe 3D" mode in which case the polygons will just be drawn as outlines. This option can be found in the "Tools->Options" dialog box. You could also try switching your 3D view from OpenGL to DirectX or vice versa.

Minimum Requirements

TopoGlide is designed to work with standard PC hardware and will work on any platform which supports Google Earth. Currently Google Earth is supported on Windows, Macintosh and Linux platforms.

In order to have a reasonable TopoGlide experience we recommend have a computer with the following minimum specifications:

- 1 GB of RAM
- Intel Pentium 4 / AMD Athlon 64 or better
- USB 2.0
- A video card capable of 3D acceleration through DirectX or OpenGL.

If you are going to make extensive use of the TopoGlide vector data layers we recommend having at least 2 GB of RAM.

Package Contents

This package should contain three items:

1. External USB Hard Drive containing the TopoGlide data
2. USB cable
3. This user manual

Contact Us

TopoGlide is distributed through Maps4Africa. Maps4Africa can be contacted through the following:

- Craighall Store:
  354 Jan Smuts Avenue,
  Craighall, JHB
  Tel: +27 11 787-2751
  Fax: +27 11 501-4739
  E-mail: maps4africa@excelnet.co.za
- Croydon Store:
  Shop 6 Croydon Centre,
  Brabazon Road,
  Croydon, (Barbara Road Offramp R24)
  Tel: +27 11 974-2624
  Fax: +27 11 974-2561
  E-mail: maps@iburst.co.za

If you have your own dataset which you would like to integrate into TopoGlide, please contact Johann Haarhoff directly to discuss this possibility.

Contact Details for Johann Haarhoff:

Tel: +27 72 123 2652
Email: johann@haarhoff.org.za

Warranty & Legal

Usage of TopoGlide in Google Earth is bound by the usage agreement of Google Earth which can be found here:

`http://earth.google.com/intl/en-US/license.html`

Usage of the Chief Directorate: Surveys & Mapping data is bound by this agreement:

Conditions of License Agreement relating to the Chief Directorate: Surveys and Mapping (CDSM) Data.

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