

# Render to Raster

The Render to Raster operation in TNTgis allows you to render the contents of the View window to a raster in your choice of several formats. The operation can render the visible layers in complex layouts, including raster and geometric layers, WMS and ArcIMS layers, map grids, legends and scale bars, and text labels. You can choose to render the full extents of the data layers or restrict the rendering to the area shown in the View, and set the image size and resolution of the result. When the View is in anaglyph stereo mode, you also have the option to render the displayed group as an anaglyph stereo image. To use the Render to Raster operation, choose Display / Render to / Raster from the Display Manager (Display / Render to Raster in TNTview).

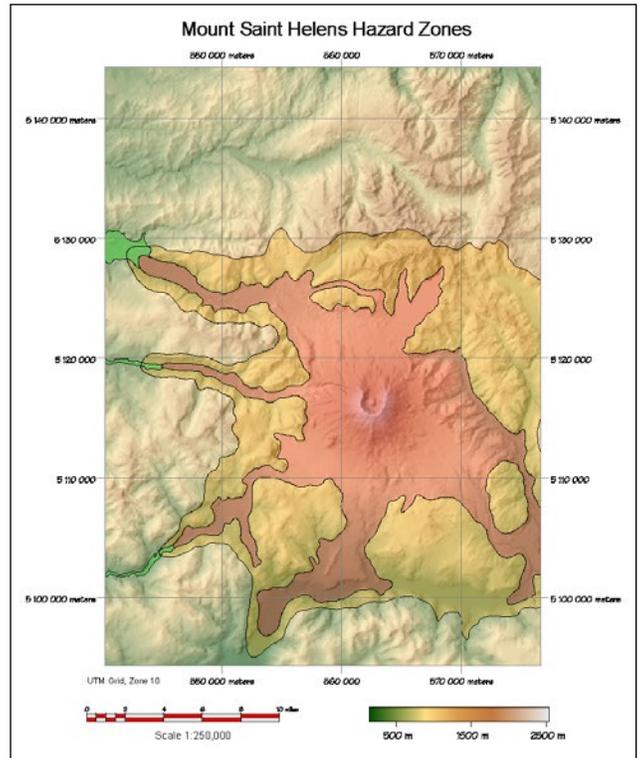
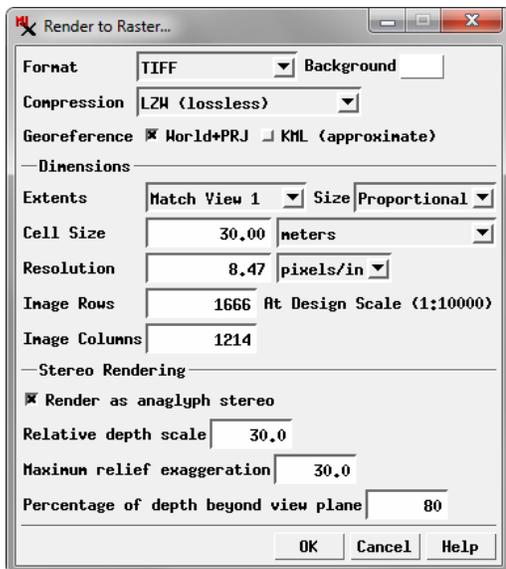
## Formats and Compression

Use the Format menu in the Render to Raster window to choose the format for the output raster. The options are RVC 24-bit RGB, RVC 16-bit RGB (5 bits per component), JP2/GeoJP2, JPEG, TIFF/GeoTIFF, and PNG. The color depth is fixed at 24-bit RGB for all non-RVC image formats. (In TNTview only the RVC options are supported.) Press the Background button to open a Choose Color window to select a color to render for any areas with no data within the selected extents. If you are rendering to PNG, such areas are also set to be transparent in the PNG file.

The Compression menu provides a choice of compression options for all formats except PNG. The compression options vary by format and are shown in the table below.

## Georeference

The raster produced by the Render to Raster operation can inherit the georeferencing of the geospatial group being rendered. If the output format is RVC, GeoJP2, or GeoTIFF, georeference information is automatically saved internal to the file (georeference subobject for an RVC raster, and GeoTIFF tags for GeoJP2 and GeoTIFF files). For the non-RVC formats the Georeference controls are active in the Render to Raster window, allowing you to save georeference information in auxiliary files. Toggle buttons are provided to choose World+PRJ and/or KML formats. The KML option converts the data extents to WGS84 / Geographic coordinates, which may be approximate depending on the CRS in use in the View and if the layers in the group are not upright.



TIFF file rendered from a TNTgis map layout.

For the non-RVC formats the Georeference controls are active in the Render to Raster window, allowing you to save georeference information in auxiliary files. Toggle buttons are provided to choose World+PRJ and/or KML formats. The KML option converts the data extents to WGS84 / Geographic coordinates, which may be approximate depending on the CRS in use in the View and if the layers in the group are not upright.

## Extents and Size

The Extents menu allows you to set the extents of the display to be rendered. The Entire Display option renders the entire extents of the display, including areas outside the extents of the current View window(s). The menu also provides a Match View option for each open View window, allowing you to render just the area shown in a particular View.

The Size menu provides Proportional and Manual options. The Proportional option restricts the output line and column dimensions to be proportional to  
(continued)

| Format          | Available Compression Types  |
|-----------------|--|
| RVC             | None<br>DPCM (lossless)<br>Huffman (lossless)<br>JPEG2000 (lossless)<br>JPEG2000 Best Quality<br>JPEG2000 User Defined<br>JPEG Best Quality<br>JPEG User Defined |
| GeoJP2<br>JP2   | JPEG2000 Lossless<br>JPEG2000 Best Quality<br>JPEG2000 User Defined  |
| GeoTIFF<br>TIFF | None<br>LZW (lossless)<br>PackBits (lossless)  |
| JPEG            | JPEG Best Quality<br>JPEG User Defined   |
| PNG             | N/A  |

NOTE: Rendering from web tilesets, including Bing Maps and MapQuest public reference layers, is not permitted in TNTgis software.

that of the display extents (for the Entire Display extents option) or to that of the selected View (for a Match View option). The Manual option lets you set row and column dimensions independently.

You can set the size of the output raster directly by editing the values in the Image Rows and Image Columns fields, or indirectly by editing the value in the Cell Size field or the Resolution field. You can set Cell Size in units determined by the menu to the right of the Cell Size field and set Resolution in pixels/in, pixels/cm, or pixels/mm as selected from the menu to the right of the Resolution field. Values in the Cell Size, Resolution, and Image Row/Column fields are interdependent as determined by the display extents being rendered and the design scale of the layout or group.

## Hidden Layers

Layers that have been set manually to be hidden in the View are not rendered to the output raster. Layers that are hidden by map scale at the current display scale are rendered to the raster if they are set to be shown at the design scale of the group or layout. Conversely, layers that are on at the current view scale are not rendered if they are set to be hidden at the design scale.

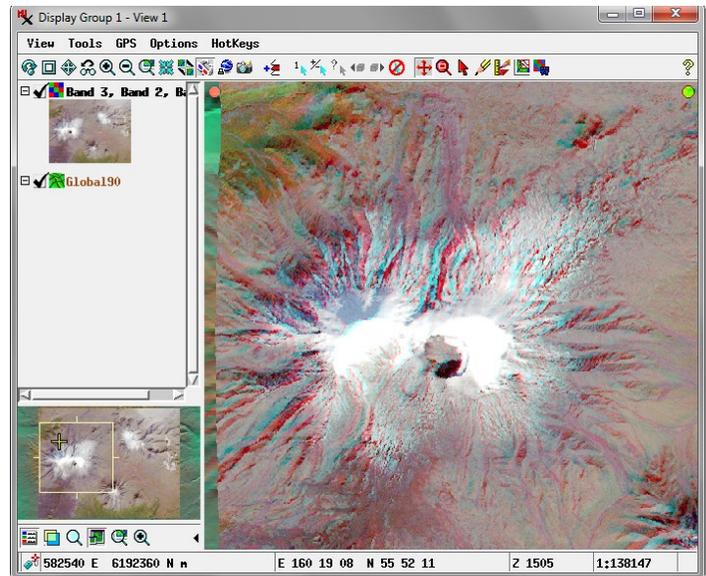
## Stereo Rendering

The Display process allows you to view any image in stereo using a terrain layer and your choice of stereo viewing modes. When the selected View is in any stereo mode, the Render to Raster window provides Stereo Rendering controls with a *Render as anaglyph stereo* toggle option, which renders the left- and right-eye images in different colors so the image can be viewed with anaglyph color glasses on screen or in a print. Fields are provided to set the *Relative depth scale*, *Maximum relief exaggeration*, and *Percentage of depth beyond view pane* (see the TechGuide entitled *Stereo Display Settings* for an explanation of these settings.)

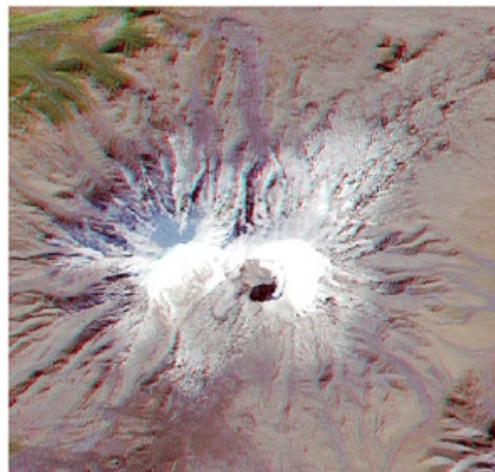
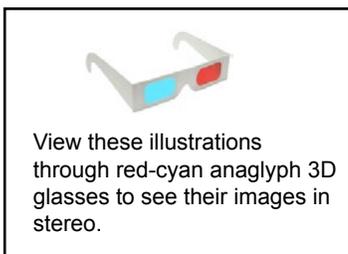
When the View group is rendered to a stereo anaglyph image, the stereo displacement is determined after the group contents are resampled to the output raster dimensions. The dimensions and cell size of the output image have an effect on the vertical exaggeration perceived when viewing this image in stereo: for a given Relative Depth Scale setting, an output image with larger cell size (smaller image dimensions) will show higher vertical exaggeration

(up to a maximum set by the Maximum Relief Exaggeration setting).

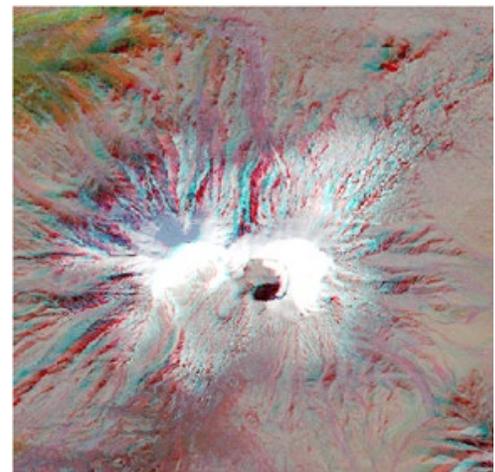
As you determine the appropriate stereo settings for the Render to Raster procedure, also keep in mind that stereo rendering in the View itself is applied at screen resolution (i.e., after the View contents are resampled to screen pixels) and also depends on the range of elevations currently visible in the view. The combined result of these effects is to produce a noticeable decrease in vertical exaggeration for large images as you zoom in from full extents to the Maximum Detail (1X) zoom level. If you are rendering to an image size similar to that of the input image, 1X zoom thus provides the best preview of the stereo effect you can expect to see in the rendered image at comparable viewing scale.



This View displays an extract of a natural color Landsat image of a volcano in Kamchatka (Russia) rendered in anaglyph stereo using MicroImages' Global 90-m Lossless Elevation dataset. The illustrations below show images rendered to anaglyph stereo from this View using differing stereo settings to provide different degrees of vertical exaggeration.



Anaglyph stereo image rendered from the group shown above with Relative Depth Scale and Maximum Relief Exaggeration both set to a value of 10.0.



Anaglyph stereo image rendered from the group shown above with Relative Depth Scale and Maximum Relief Exaggeration both set to a value of 40.0.