# View Raster and Web Terrain Profiles

In geospatial views in TNTmips, TNTview, or TNTedit, you can use the GeoToolbox to view profiles of raster or terrain surface cell value versus distance along a path of any shape. You can use the Profile View in the GeoToolbox to view profiles for raster objects or web terrain tilesets (local or on the Internet) that are either current layers in the view or that you select after drawing a path over another reference layer. You can draw profile paths with the Ruler or Line tools or with any of the tools that draw closed shapes (Polygon, Rectangle, and so on). The Profile View can show a single profile from one object or show a set of profiles from a collection of rasters and/or terrains. The Profile View provides a number of options for displaying profiles, and it can show trend lines and associated statistics that you can use to analyze a profile (see the Technical Guide entitled *GeoToolbox: Analyze Raster and Web Terrain Profiles*). You can also use the Profile View in conjunction with the GeoToolbox Point tool and a set of rasters or terrains to show a graph of cell value versus object number for a specific cell location (see the TechGuide entitled *GeoToolbox: Graph Values from Multiple Rasters/Terrains by Location*).

## Profile from a Single Displayed Raster or Web Terrain Tileset

①  Display a raster object or web terrain tileset in the View window, then click on the GeoToolbox icon button.
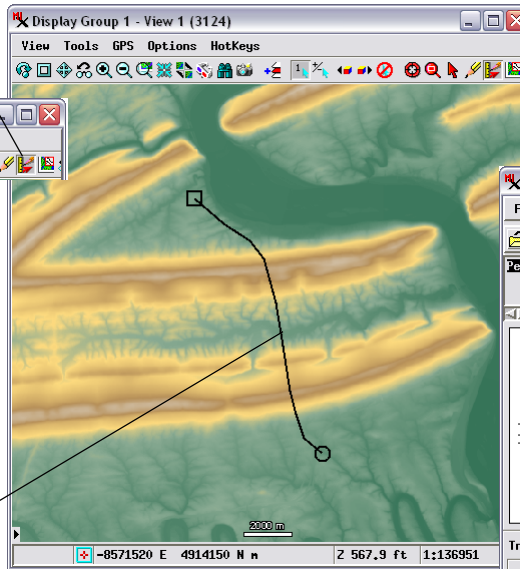
②  In the GeoToolbox window, select the desired drawing tool to draw the path or geometric shape.

Drawing tools that can be used for profile viewing.

③  In the View window, draw the path to use for the profile. The Open Profile View icon button becomes active only when a path or geometric shape is drawn using an appropriate drawing tool.

Path drawn using the Line tool over a web terrain tileset (terrain surface layer) with elevation data at 1-meter spacing for the U.S. state of Pennsylvania.

④  In the GeoToolbox window, press the Open Profile View icon button.
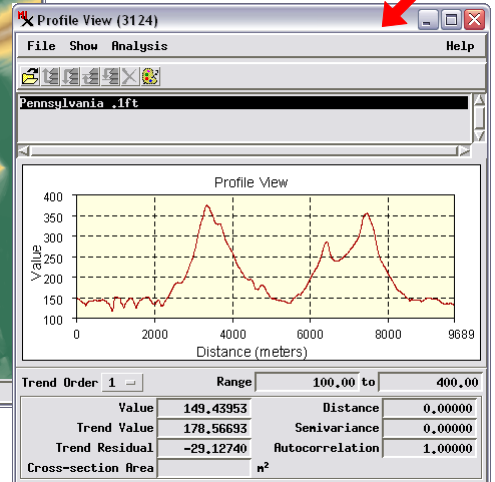
Profile View for the path shown to the left.

When a single raster or terrain surface layer is shown in the View, the Profile View automatically shows a profile for that layer using the current path. The profile updates automatically if the path is redrawn in the view. When you move the mouse cursor along a profile plot in the Profile View window, the cursor position is also automatically tracked along the profile path in the geospatial View, as illustrated below.
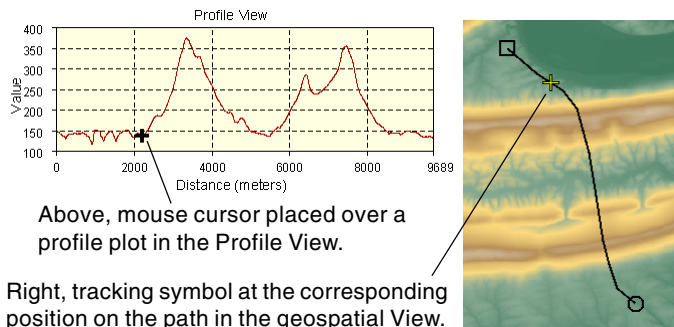
Above, mouse cursor placed over a profile plot in the Profile View.

Right, tracking symbol at the corresponding position on the path in the geospatial View.

## Profile Plot Options and Snapshot

The start, end, and interval values for the plot's vertical scale are set automatically based on the range of values along the path (rounded to be divisible by 2, 5, or a power of 10). The resulting minimum and maximum values are shown in the Range fields below the plot. The Manual Range option on the Show menu allows you to enter custom values in the Range fields to set a particular vertical scale range, as illustrated below. The Show menu in the Profile View also includes a Grid option that toggles the plot grid lines off/on and a Fill option to fill the area below the profile line with the profile color (as illustrated below). The Show menu also includes Font and Label Size entries that allow you to choose the font and font size of the labels on the plot. The Colors icon button on the
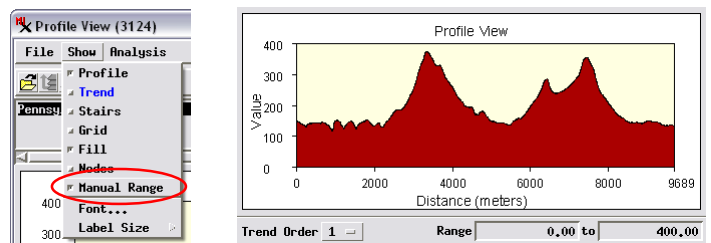
Turning on the Manual Range toggle item on the Show menu allows you to edit the Range numeric fields below the profile plot to set the desired vertical range of the plot. The plot in this illustration is also shown with the plot grid turned off and the color fill option turned on using toggle items on the Show menu. (over)

Profile View opens a dialog (illustrated below) that lets you choose colors for the plot area: the background (interior of the plot rectangle), margins (outside the plot rectangle), text and grid, and the profile itself. You can use these options to design the plot for presentation purposes, then use the Snapshot option (File menu) to snapshot the plot area of the Profile View to a designated raster object in a Project File.

Colors
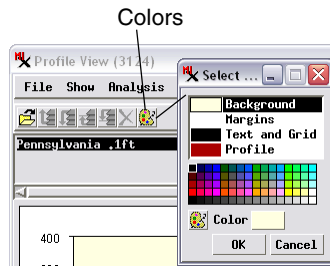


## Profiles with Multiple Useable Layers in View

If the View includes more than one raster and/or terrain surface layer when you press the Open Profile View icon button, the result depends on which type of layer is the current active layer (shown in bold in the layer list in the Display Manager and View sidebar legend). If a terrain surface layer (raster or web terrain tileset) is the active layer, the Profile View opens directly showing the profile from that surface layer. If any other type of layer is the current active layer, a *Select option for profile view* window opens (illustrated below). The choices on this window depend on which types of layers are present and currently active; it may present any of the following choices for the profile source:

- use the object in the active layer
- use the object(s) in the surface layer(s)
- use the object(s) in the raster layer(s)
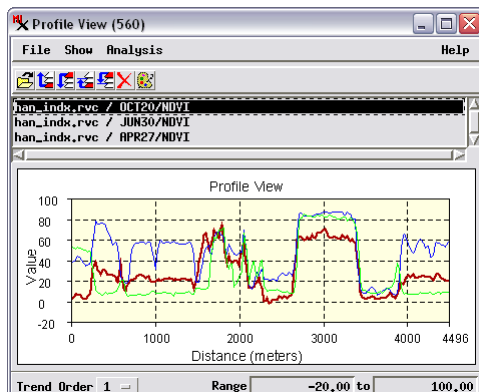- use all layer objects
- ask for objects to profile
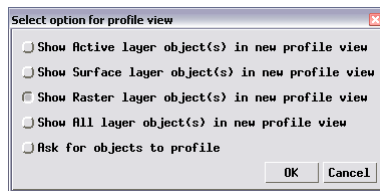


Several of these options allow you to simultaneously create profile lines in the Profile View from multiple layers in the View. Choosing the last option above opens a Select Object dialog window to allow you to choose one or more raster objects or web terrain tilesets that are not currently displayed (but cover the area of the profile line) to use as the data for the profile(s).

## Profiles from Multiple Layers / Objects

When multiple objects are designated for use in the Profile View, a separate profile line is automatically generated in the plot area for each object. Different colors are automatically assigned for each profile line, as illustrated below. The names of the profiled objects
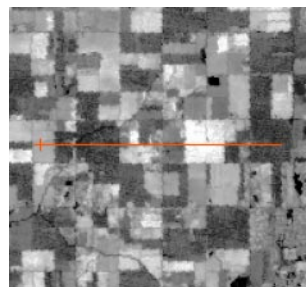
are shown in the listbox above the plot area. You can click on any of the object names in the list to select it. The name is highlighted in black in the list and a wider line width is used for the corresponding profile line in the plot. You can use the color fill option with multiple profiles, though the fills may obscure underlying profiles. You can use the standard layer control icon buttons in the Profile View window's toolbar to raise or lower the selected profile or move it to the top or bottom of the list in order to remedy overlap issues.

## Profiles When Viewing Only Reference Layers

You do not need to have a raster or web terrain tileset in the View in order to use the Profile View. When you draw a path in a View showing only standard web tileset or geometric object layers (vector, shape, CAD, or region) and press the Open Profile View icon button, a Select Object dialog opens to allow you to choose one or more raster objects or web terrain tilesets (local or from the web) covering the path area to use as the data for the profile(s). The selected spatial objects are not added as visible layers to the View.



Path drawn in view showing only vector layers.

Profile from a selected DEM raster covering the same area.
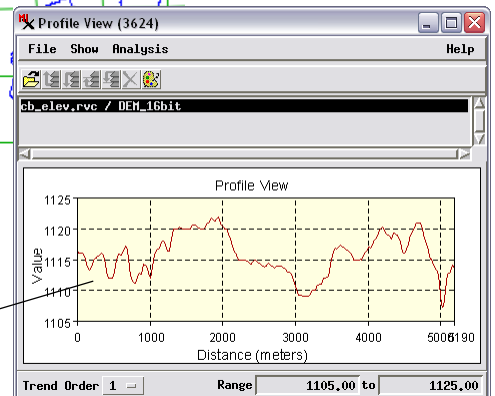
## Profiles from RGB Raster Layers

When you create a profile path for a raster layer displaying an RGB color image (single color-composite raster or separate red-green-blue raster objects) or a selected color-composite raster object, the Profile View shows a profile line for each of the three color components, with the line color keyed to the component color, as illustrated below. The three components are also shown in the listbox above the profile plot.
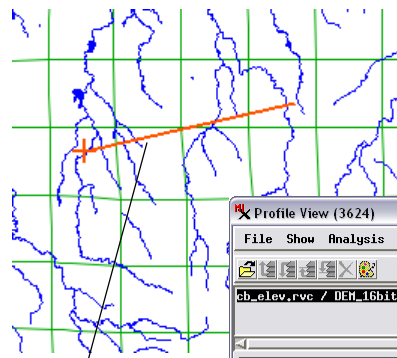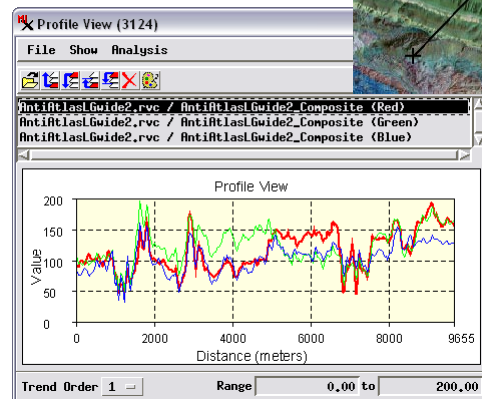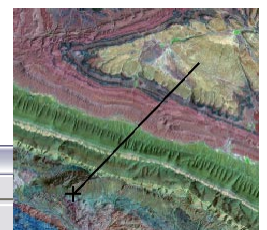




Profile line (above) in view of raster layers with vegetation index (NDVI) values for three dates during a growing season. The plot in the Profile View (right) shows a separate profile line for each of the rasters, the names of which are shown in the listbox above the plot.



The Profile View shows a profile for each color component for RGB color raster layers or composite rasters.