Contents

View Modes

There are three display modes for the 3D atlas.   The mode can be changed at any time by pulling down the "Display" menu.   (In each mode, the display will automatically be rescaled if the window is maximized or resized.)

The Main Display is the default display when the 3D Atlas is started. This display shows:

- a U.S. map in the upper right corner. The currently loaded 10 x 5 degree map section is outlined in red.
- a topographic view of the current map section, with a highlighted "focus area".
- a 3D drawing of the current focus area (aerial view, looking North).
- a 3D control bar, along the left side of the window, with option status indicators and drift control arrows.

The 3D-Only Display shows just the 3D control bar and the 3D drawing. Select the "Display | Expand 3D Display" menu to switch to this mode.

The third display mode is the Topographic-Only Display.   This display consists of an expanded topographic map and a palette control bar.   The palette control bar shows the current palette colors corresponding to the indicated elevation ranges.   (Elevation ranges are expressed in feet, starting at 0 - 100, increasing by 100, 500, or 1000 foot increments.) Clicking the mouse on any of the palette squares will pop up a Color Editor window, which can be used to define a new color for that elevation range.   (See Palettes.)

From the Topographic Display, you can pop up a Close-Up Window by double-clicking on the area of interest.   This window will zoom in on a 1-degree-square section of the topographic map, and allow you to create a text file with the raw elevation data for that section.

Selecting a Location

The 3D Atlas displays U.S. elevation data in 10 x 5 degree sections (10 degrees longitude by 5 degrees latitude - about 550 x 350 miles). When you start the program, it will automatically load the map section you were last working in.   You can select a new location using the mouse, or by specifying the city or latitude / longitude you want to see.

Mouse:

The easiest way to select and move to a location is by using the mouse.   To load a new map section, click the mouse on the desired   location in the Main Display's U.S. map.   The selected area must be within the highlighted Western part of the country.

Once the new map has been loaded, select the specific focus area by clicking on the topographic map in the left corner of the Main Display. The 3D view corresponding to the new focus area will be updated automatically.

To change to a new focus area in the same map section, just click on the topographic map.   To increase the size of the focus square, click on the "focus area" display on the 3D control bar, or select the "Options | Focus Dimensions" menu item.

The focus area can also be changed by putting the 3D drawing into "drift" mode.   Click on one of the N/E/S/W arrows at the bottom of the 3D control bar.   The focus area will begin drifting in the indicated direction, until another direction arrow is selected, or the "stop" button in the middle of the direction arrows is clicked.   You may want to turn auto-scale off to make sure the scale doesn't change while you're drifting.

Selecting a City:

The view location can be moved to a specific city by selecting the area of interest from the City List.   To view the list, select the "Location | Select City" menu item.   The cities are listed in alphabetical order, grouped by state. Use the mouse or arrow keys to highlight a city, then press OK.   The map section containing that city will be loaded (if not already loaded), the focus area will be centered on the city, and the topographic/3D drawings will be updated.

Specifying Latitude and Longitude:

You can go to an exact latitude and longitude by pulling down the "Location | Specify Lat/Long" menu. The values should be entered in decimal format,

rather than degrees/minutes (e.g. "40.5" means 40 degrees, 30 minutes). The latitude and longitude specified must correspond to a location in the Western U.S. (longitude must be greater than 105).

Press OK when finished making the selection.   A new map section will be loaded if necessary, and the topographic/3D drawings will be updated to focus on the new coordinates.

Options

Focus Area

(Reset using the Options | Focus Dimensions menu, or by clicking the "focus area" indicator on the 3D control panel.)

This option allows you to change the size of the focus square. Use the scroll bar or type in a new value.   The focus range is 30 to 300 miles.   (Note: the larger the focus square, the longer it will take to update 3D drawings.)

Vertical Scale

(Reset using the Options | Exaggerate Vertical Scale menu, or by clickingthe "scale" indicator on the 3D control panel.)

For large focus areas, you will probably want to exaggerate the vertical scale to make mountains, valleys, and other physical contours more apparent on the 3D drawing.   Use the scroll bar, or type in a value between 1 and 50. Calling this option disables the auto-scale option (see below).

Cities

(Toggle this option on/off using the Options | Show Cities menu, or click on the "cities" indicator on the 3D control panel.)

City labels will be added to the 3D drawing when in the Main or 3D Display modes, and to the topographic map when in the Topographic Display mode. Prominent mountains, lakes, etc. will also be labeled.

Colors

(Toggle this option on/off using the Options | Add Colors menu, or click on the "colors" indicator on the 3D control panel.)

The 3D drawing will be "colored in" with the current contour palette. You can create some interesting landscapes with this option, especially with the natural and customized palettes.   When the "colors" option is active, the time required to update the 3D drawings will be somewhat longer.

Auto-Scale

(Toggle this option on/off using the Option | Auto-Scale menu, or click on the "auto-scale" indicator on the 3D control panel.   Changing the exaggeration multiplier manually will automatically turn auto-scale off.)

When auto-scale is active, the Vertical Exaggeration multiplier will be automatically adjusted based on the elevations in the current focus area. The maximum scale factor for auto-scale is 20:1.

Latitude / Longitude Markings

(Toggle this option on/off using the Option | Lat / Long Markings menu.)

This option will draw latitude and longitude lines on the topographic map in both the Topographic and Main Display modes.

Palettes

The contour palette is used to create the topographic maps and to fill in the 3D drawings.   Four palette modes are supported: high contrast, natural, customized, and shading-only.   You can switch palettes at any time, using the pull-down "Palette" menu.

High-Contrast Palette

The high-contrast palette is the default palette.   This palette uses solid, contrasting colors for adjacent elevation ranges.   It is useful for emphasizing elevation contours in topographic maps.

Natural Palette

The natural palette gives more realistic, blended colors for different elevations.   Colors range from blue-greens at low elevations to greens and browns at higher levels.   The highest elevations will be painted in light gray and white to indicate snow cover.   Contours will be less obvious than the high-contrast palette, but color-added 3D drawings will have a more natural-looking appearance.

Customized Palette

If you would like to experiment with the contour colors, you can create your own palette.   To do this, first switch to the Topographic-Only display mode ("Display | Expand Topographic View" menu). Click the mouse on the palette squares in the color control panel to pop up the Color Editor.   In the color editor, you can select one of the 14 "basic" colors, or manipulate the red/green/blue scrollbars to produce a new color.   Pressing "OK" will change the custom palette entry for the selected elevation range.

Repeat this for each elevation range to build a customized palette. When you're through, the palette can be saved by selecting the "Palette | Save Custom Palette" menu item.   After saving the palette to disk, it can be loaded in subsequent executions of the 3D Atlas by selecting the "Palette | Load Custom Palette" menu item.

Changing any of the palette colors automatically puts you in the customized mode, regardless of which palette was originally loaded.

Note: If you are running in 16-color mode, the natural and customized palettes will produce dithered (not "true") colors.   The 3D drawing and the Close-Up window will show the dithered colors.   The topographic map, which

is pixel-mapped, will not support the dithered colors and will be painted using the nearest available primary colors.

Shading Only

The shading-only mode does not use separate colors for different elevation ranges.   Instead, elevation changes are emphasized by shading the slopes: west-facing slopes are dark gray, east-facing slopes are white, and flat regions are light gray.   This gives a 3D appearance to the topographic maps (especially in Topographic Display Mode).

Close-Up Window

The Close-Up Window is an expanded view of a 1-degree square of elevation data.   To create this window, put the display in Topographic-Only mode (see Under_line View Modes)   and double-click on the area of interest.   You may want to activate the Lat / Long Markings option first, to see where the 1-degree lines fall on the map.   Once the Close-Up Window has been created, the following actions are available through the "Options" menu:

Elevation Colors

This is the default mode.   The close-up data is drawn as colored squares, each representing a 1-minute elevation point.

Contour Lines

Instead of elevation colors, the data is represented as countour lines.

Lat / Long Markings

As in the main window, latitude and longitude lines will be drawn on the display (when you are in Elevation Colors mode).   In this case the increment will be 10 minutes   (1 degree = 60 minutes).

Copy to Clipboard

Copies the close-up display to the Windows Clipboard.   From the clipboard, you can paste the display into other applications, save it to disk, etc.

Write Data to File

Creates a text file with the raw elevation data for this 1-degree square. You will be prompted for the file name, then the data will be written to disk in a table format of 1-minute increments.   For example, if you are zoomed in on 40 degrees North, 120 degrees West, the table will show 1-minute elevation data from 40 59' / 120 59' to 40 00' / 120 00' . The elevations are listed in hundreds of feet.

Close Window

Closes the window and returns you to the Topographic Display.

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