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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, or clicking on the display-mode buttons on the control bar. (In each mode, the display will automatically be rescaled if the window is maximized or resized.)

The Main View 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 in the upper left corner, with a highlighted "focus area".
- a 3D drawing of the current focus area (aerial view, looking North).

The Topographic View consists of an expanded topographic map. Select the "Display | Topo Display" menu to switch to this mode, or click the Topographic View button on the option control bar.

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.

The third display mode is the 3D Display. This display shows just the 3D drawing. Select the "Display | 3D Display" menu to switch to this mode, or click the 3D Display button on the option control bar.

Control & Palette Bars:

Regardless of which display mode you're in, an option control bar will be drawn on the left side of the window, and a palette bar will be drawn on the right. The option control bar has an array of buttons you can use to activate / deactivate options, change display modes, and control the 3D drift direction.

The palette 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.)

Both the option control and palette bars can be deleted by un-checking the "Show Control Bar" and "Show Palette Bar" entries in the "Display" pull-down

menu. Use the same menu to restore one or both bars at any time.

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. A library is also available for saving and retrieving specific locations.

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 area in the highlighted area of the Main Display's U.S. map.

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 control bar, or select the "Options | Focus Dimensions" menu item. Clicking the "+40" or "-40" buttons will increase or decrease the focus square dimensions by 40 miles.

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 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 U.S. west of Denver (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.

Using the Library:

The 3D Atlas Library allows you to retrieve a previously-stored location (along with its display settings). To access the library, select the "Location | Library" menu item.

All stored entries will be listed, with a short description for each. To retrieve an entry, use the mouse or arrow keys to highlight its description, then click the "Go To Highlighted Location" button. The map section and display options corresponding to that entry will be loaded.

To create your own entries, first put the display in the exact location and format you want to save. Then open the Library window and click the "Add Current Location to Library" button. You will be prompted for a description of the entry (40 characters or less). The current map location, display mode, color palette and option settings will all be stored in the library.

Options

Focus Area

(Re-set using the Options | Focus Dimensions menu, or by clicking the "focus area" display on the control bar.)

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 clicking the "scale" display on the control bar.)

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).

Colors

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

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

Cities

(Toggle this option on/off using the Options | Show Cities menu, or click on the "Cities" button on the control bar.)

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.

Latitude / Longitude Marks

(Toggle this option on/off using the Option | Lat / Long Marks menu, or click the "Lat/Long" button on the control bar.)

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

Auto-Scale

(Toggle this option on/off using the Option | Auto-Scale menu, or click the "Auto-Scale" button on the control bar. 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.

Palettes

The contour palette is used to create the topographic maps and to fill in the 3D drawings. In Color Palette mode, elevations are displayed in different colors. In Shading-Only mode, all elevations are colored in gray, but the drawings are shaded darker and lighter dependent on the angle of the slope at that point. You can switch between these two modes using the "Palette" menu.

Color Palettes

Select this mode using the "Palette | Color Palette" menu.

Several color palettes are provided with the 3D Atlas. Switch between these palettes for different effects with the 3D drawings, or define your own palettes. The default palettes include "contrast", which displays solid, contrasting colors for adjacent elevation ranges. This is useful for emphasizing elevation contours in topographic and 3D maps. The "natural" palette uses a gradual range of greens and browns to give more realistic-looking landscapes. Other palettes use gradual shading of one color ("brown", "dkbrown", etc). Some palettes are better suited to a given region than others.

If you would like to experiment with the contour colors, you can create your own palette, using the palette control bar on the right side of the screen. To change an elevation's color, click the mouse on the corresponding square in the palette control bar. This pops up the Color Editor. In the color editor, you can select one of 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. The current palette name will be changed to "untitled", until you give it a name when you save it to disk.

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 Current 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 New Palette..." menu item.

Note: If you are running in 16-color mode, most 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

Select this mode using the "Palette | Shading Only" menu.

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 [View Modes](#)) and double-click on the area of interest. You may want to activate the Lat / Long Marks 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 contour lines.

Show Cities

Cities will be shown on the display. If the main window's Cities option was on when the close-up window was created, it will automatically be activated on the close-up.

Lat / Long Marks

As in the main window, latitude and longitude lines will be drawn on the display. 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.



