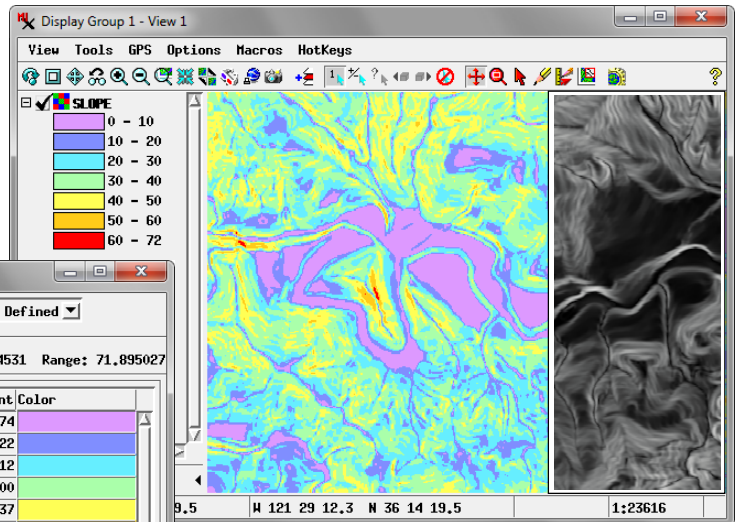


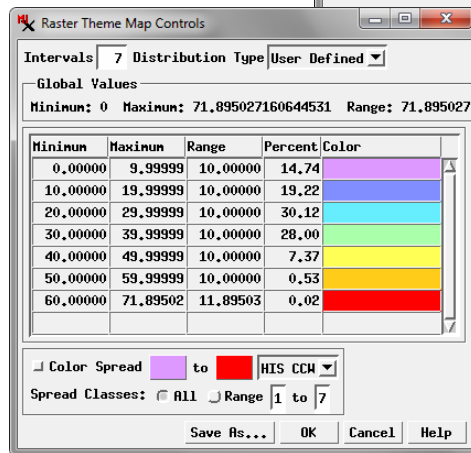
Raster Theme Mapping

The Raster Theme Mapping option in the TNTgis Display process lets you display grayscale raster objects as a set of discrete numeric intervals with a different color assigned to each. As an alternative to grayscale display or a continuous color palette, the discrete interval colors provided by raster theme-mapping can simplify the display and emphasize overall spatial patterns in the data.

The Raster Theme Mapping option automatically generates interval categories and display colors from the cell values of the raster object. You can set the number of categories, choose from Equal Interval or Equal Count options for defining interval boundaries, or manually set the boundaries. You can generate interval colors using a color spread or manually assign colors. You can save multiple themes for a raster object and choose any saved theme to use in the current session.



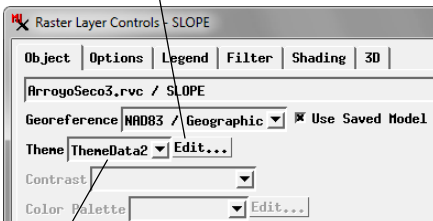
Raster theme-map of terrain slope values (raw grayscale slope image shown in inset). This User-Defined theme uses 7 intervals, each (except the last) representing a 10-degree range of slope angles. Interval colors were initially assigned using a color spread, then several individual interval colors were reselected for clarity.



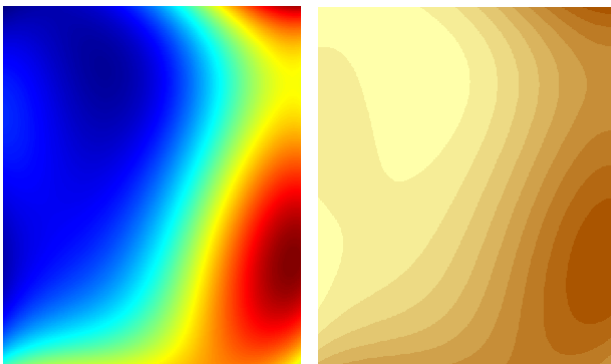
Intervals and Distribution

To set up a raster theme map, open the Raster Layer Controls window and on the Object panel press the Edit button to the right of the Theme label and menu (see illustration to the left), which opens the Raster Theme Map Controls window. Enter a value in the Intervals field at the top of this window to set the number of value intervals (categories) to use (the default number of intervals is 10). The boundaries between intervals are set automatically from the global range and the option you choose from the Distribution Type menu. The Equal Count option assigns an approximately equal number of raster cells to each range, while the Equal Intervals option sets an equal numeric range for each interval. (The Equal Count option is available for integer raster data types but not for floating-point rasters.) The tabular list in the Raster Theme Map Controls window shows for each interval the minimum and maximum values, range, and percentage of cells in the interval. This list automatically updates when you change the number of intervals or the distribution type.

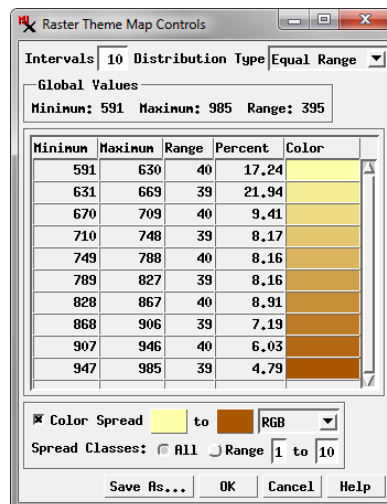
Press the Edit button to open the Raster Theme Map Controls window.



You can save multiple themes for a raster object and use the Theme menu to choose one to use for the current display.



Raster mapping variation in average rainfall in millimeters displayed with continuous rainbow palette (above left) and with a 10-interval equal-range theme (above right) using a simple color spread (illustrated to the right). The discrete interval colors provided by raster theme-mapping can emphasize the spatial patterns in the raster data.



You can customize the theme intervals by editing the minimum or maximum values, which automatically sets the Distribution Type menu to the User Defined option. Adjacent ranges are automatically adjusted in response to each change.

Color Assignment

A color is initially assigned automatically to each interval according to the Color Spread settings at the bottom of the Raster Theme Map Controls window.

(continued)

The Auto option on the Color Spread menu automatically sets starting and ending colors and the spread of colors between them. This menu also allows you to choose a manual spread mode using one of several color models: RGB, HIS CW (clockwise), HIS CCW (counter-clockwise), HBS CW, and HBS CCW. When you choose a manual spread mode, the color buttons for the start and end of the spread become active. Clicking on either button opens the standard Choose Color window from which you can choose a color from a palette or set exact color values. Any changes in start or end colors or spread mode immediately update the interval colors shown in the list. You can quickly experiment with different start and end colors and spreads to design an attractive and informative set of interval colors.

The Spread Classes radiobutton control lets you determine how the spread is applied to the set of intervals. The default setting, All, applies the spread to all intervals. If you turn on the Range button, you can use the numeric fields to the right to apply the spread only to a specific contiguous range of intervals, then manually set colors for the intervals outside the spread range. Each color sample in the interval list is also a color button, so

you can manually select a color for any interval if desired. Editing a color within the current set of spread intervals automatically turns off the Color Spread toggle; turning the toggle back on enforces the current color spread settings again.

Saving and Using Raster Theme Maps

Raster theme map settings are saved as a subobject of the raster object, so you can save and use multiple themes for the same raster object. Pressing the OK button on the Raster Theme Map Controls window saves the current theme map settings; if no theme has been previously saved, the Save As window opens with a default name and description (which you can edit if you choose). After a theme has been saved, pressing OK updates that theme with any changes you have made. You can press the Save As button instead to save the changes to another theme subobject. The saved theme subobjects (if any) are listed on the Theme menu in the Raster Layer Controls window, from which you can select a theme to use for the current display. Choosing a theme from this menu automatically disables the Contrast and Color Palette menus. Choose None from the Theme menu to discontinue use of the theme and reactivate the Contrast and Color Palette menus.

