

Spatial Filter Testing and Masking

The Spatial Filter process in TNTmips (Image / Filter / Spatial Filter) provides the option to test (preview) the results of the current filter settings in the Filter View window using a designated portion of the input image. The Filter View window provides a Define Region toolset that allows you to draw one or more shapes to outline the area for testing or to define it by selecting one or more existing region objects.

You can also use the same Define Region tools to specify a “masked area” for the saved result that limits application of the filter to the specified portion of the image. Areas outside the masked area can be set to use the unfiltered input image values or be set to null. You can also set the masked area by choosing an existing binary raster object with value of 1 indicating the area to be filtered.

Defining a Region in the Filter View

The Define Region toolset is turned on by default on the Filter View when you launch the Spatial Filter process (see illustration to the right). You can use this toolset to create a simple or complex outline of an area that is shown as the Defined Region layer in the layer list in the View sidebar. The Defined Region can then be used for filter testing or to assign the masked area for filtering.

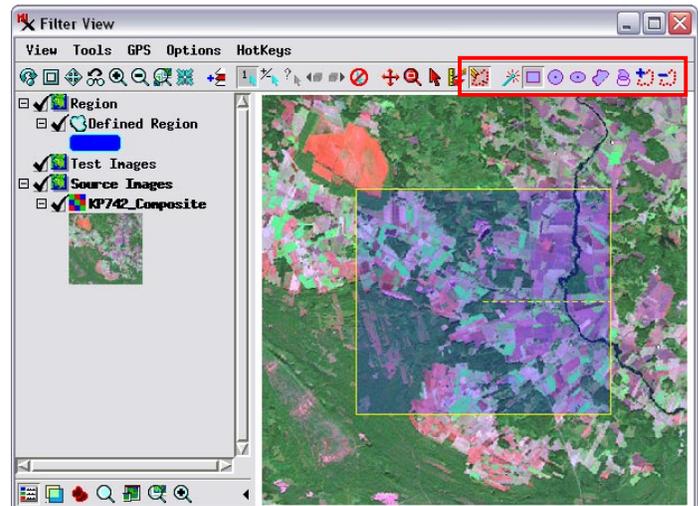
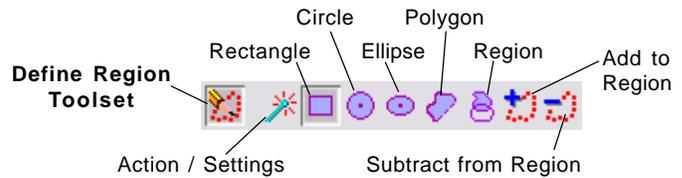
Icon buttons associated with the Define Region toolset are shown on the toolbar to the right of the Define Region icon button. The Rectangle tool is active by default. To create a rectangular area for testing, simply drag out a rectangle within the View. You can drag an edge or corner of the rectangle graphic to resize it or drag within the rectangle to reposition it. Right-click to add the rectangle to the Defined Region, which is then shown with a partially-transparent blue fill color. You are then ready to test the current filter settings (see the Test Filter section below).

You can use the Rectangle tool or any of the other provided shape-drawing tools (Circle, Ellipse, and Polygon) alone or in combination to draw and add shapes to the Defined Region. Right-click after drawing each shape or press the Add to Region icon button to add the current shape. Press the Subtract from Region icon button to remove the area outlined by the active shape from the Defined Region.

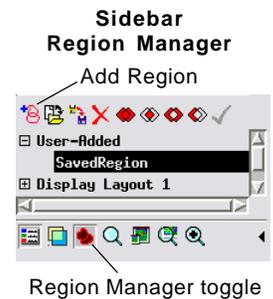
Pressing the Action / Settings icon button opens a menu with options to Clear Drawing Tool (which clears the current tool graphic) and to Clear Region (which clears the entire Defined Region). This menu also lets you set the Line Mode for the Polygon drawing tool (Draw or Stretch).



You can also use add one or more previously-saved region objects to the Defined Region by taking the following steps:



- Press the Region icon button in the Define Region toolset.
- Open the Region Manager in the Filter View sidebar by pressing the Region Manager icon button at the bottom of the sidebar.
- Press the Add Region icon button in the Region Manager to open the Select Region Objects window.
- Navigate to the desired Project File, select the region object, and press OK on the selection window. The region is then listed in the User-Added section of the list in the Region Manager, and its outline is shown as a graphic in the View.
- Right-click or press Add to Region to add to the Defined Region.

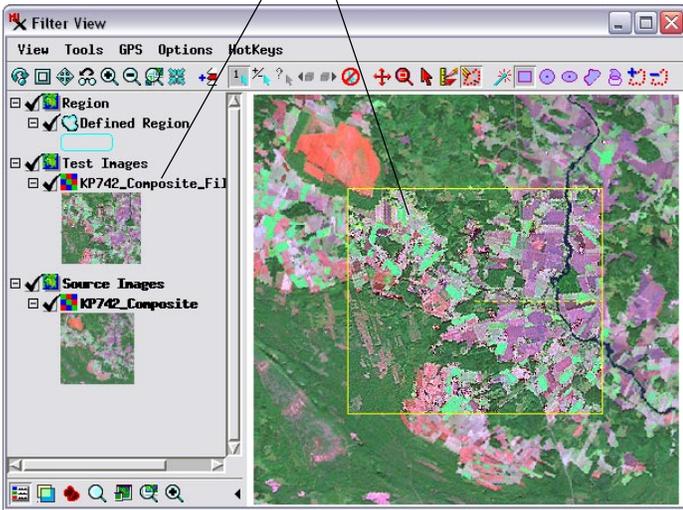


Test Filter

When a region has been defined in the Filter View, the Test button on the Filter window is active (see illustration above). Pressing the Test button computes a temporary filtered result using the current filter settings and adds it to the Test Images group as an overlay in the Filter View’s Layer List (see illustration on the next page). You can run multiple tests using different filter settings and/or different areas; only the last temporary test result is shown in the Filter View.

(over)

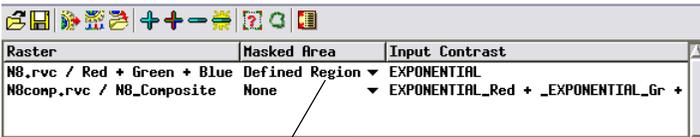
Filter test result layer in Filter View



Setting the Masked Area

You can set a masked area for one or more input images from the Defined Region layer in the Filter View or from a previously-saved binary mask raster. The masked area defines the image area to be filtered.

You can set the mask option for an individual input image using the menu in the Masked Area column for the image's entry in the Raster list. The default setting is None. If a Defined Region has been created in the Filter View, you can assign the masked area from it by choosing *Set Selected Masked Areas from Selected Region* from the menu. The Masked Area column in the raster list then shows "Defined Region" for the affected input image.



A masked area has been set for the first image in the input list from a Defined Region in the Filter View (using the Set Selected Masked Areas from Selected Region option).

Choose *Set Selected Masked Areas from Binary Raster* from the Masked Area menu to use a saved binary raster as the source for the masked area. The binary raster must match the associated input image(s) in image dimensions and cell size and should have cell value 1 indicating the areas to be filtered. You are then prompted to select the mask raster. After mask selection is complete, the Masked Area column for the affected input image then shows the file and object name of the selected mask.

If you change your mind about applying the masked area for an input image, simply reselect None from the Masked Area menu for that image.

You can also set the same mask option simultaneously for all input images or for those inputs currently selected (highlighted) in the Raster list using the Set Masked Areas icon button on the filter window toolbar. If a Defined Region has been created in the Filter View, you can assign the masked area from it by choosing *Set All Masked Areas from Selected Region* (applies to all inputs) or *Set Selected Masked Areas from Selected Region* (applies to inputs currently selected in the list). To use a binary raster as the source, choose *Set All Masked Areas from Binary Raster* (applies to all inputs) or *Set Selected Masked Areas from Binary Raster* (applies to inputs currently selected in the list). You can reset the mask setting to None for multiple inputs by choosing *Reset All* or *Reset Selected* from the Set Masked Areas icon button menu.



Use the Set Masked Areas menu to choose a method for defining a masked area for one or more filter inputs.

The image area outside of the masked area is not filtered. It can be treated in one of two ways, as selected from the Cells Outside of Masked Area menu on the Filter window's Options tabbed panel. You can choose Original Image, which transfers unaltered cell values from the input to the output, embedding the filtered result within a copy of the original image. The other option, Set to Null, creates a null mask defining the image portion outside the masked area as null. By default these null areas are fully transparent when the filtered raster is displayed.

