Creating a Multi-Band or Mosaic Image in ERMapper

Frequently there is a need to construct a multi-band image from a series of individual layers of data. This is sometimes referred to as a layer stack. This issue often arises when obtaining images for processing in ERMapper. You may receive a series of binary band sequential or TIF images, one for each band of data. They will need to be assembled into a single file with multiple bands. This technique is also used to subset images on occasion.

This technique can also be used to create stacked images that include a DEM layer or a classification layer that can be added to your satellite image. You can add two 7 band satellite images, one for each of two seasons, to create a new 14 band image for advanced processing. This same technique can also be used to combine two adjacent scenes into a single mosaic image. **See the figure below for a specific example**.

The first step to creating a multi-band image in ERMapper is to open the algorithm window and add a pseudo layer for each band of the output image that you desire. You will need to change the layer name in the left side of the window from the default name "Pseudo Layer" to a unique name for each layer that you want to create. You can change the name by selecting the layer with a single click and then single clicking **in** the name to permit editing. In this example we have labeled the first two layers Band 1 and Band 2. You also need to select the correct file name and/or band number in the right window. In the example below the file selected is "new_haven_tm_utm.ers". You will need to change the band number to B3:Band3 after the layer name is changed to "Band 3". You may want to save this as an algorithm so you can easily recreate these steps with another file in the future.

When all layers have been properly labeled and the correct data layers are selected for each band, save the file as an ERMapper Raster Dataset. **Make sure you check the box "Delete Output Transforms"!**

A few additional notes…

If you want to combine images from different seasons, you will need to use names that keep the layers separated. You should use names something like "Band 1 Spring" and "Band 1 Summer". This will produce different layers for each season.

To create a single mosaic image from multiple images:
If you want to merge two or more adjacent scenes, use the same layer names for the same bands of each image. For example, use the layer name "Band 1" for the pseudo layers for band one of each image. They will be combined into a single "Band 1" on the output

image. You can merge multiple DEM tiles this way by calling each layer DEM. Save the new file making sure the "Delete Output Transforms" check box is selected.

Final check for errors

As a final step, you should make sure that you have selected separate data layers for each layer in the stack. It is very easy to accidentally use band 3 for both band 3 *and* band 4. To do this, load the new image and check that a cell has different values for each data layer. Use **View | Cell Values Profile**… for this.