

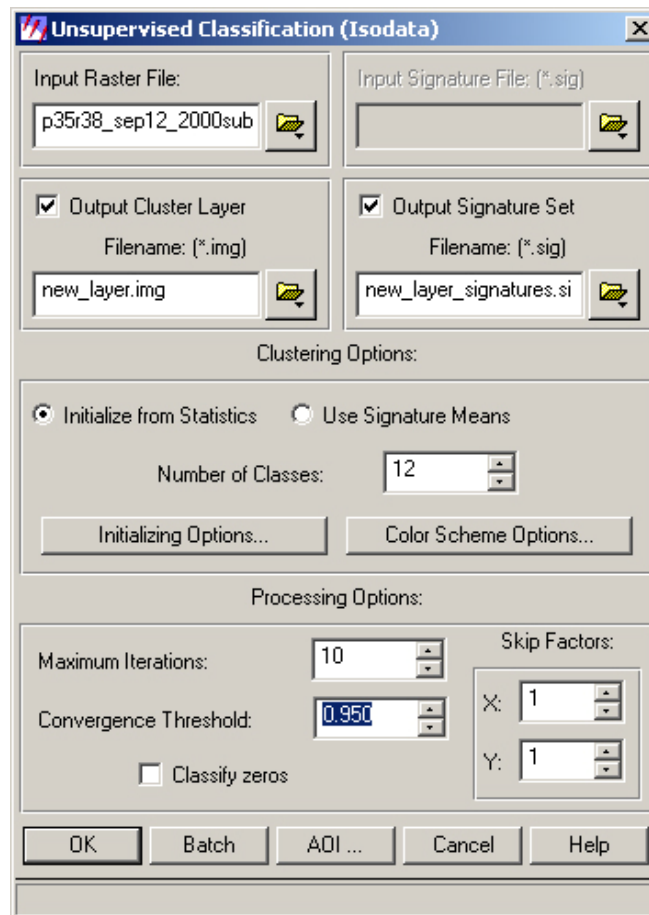
Unsupervised classification with Erdas Imagine 8.7




1. Choose the *Classifier* button to access the menu, and *Unsupervised Classification...* to enter the setup dialog.

2. Enter the *Input Raster File* (the image you want to classify), the *Output Cluster Layer* (The new classified image to be created), and the *Output Signature Set* (spectral signatures for each class). Be sure to click on the folder icon to place the new files in the proper directory, and to choose the output file type (although several output types are available, img is the only one that supports the later processing steps.).

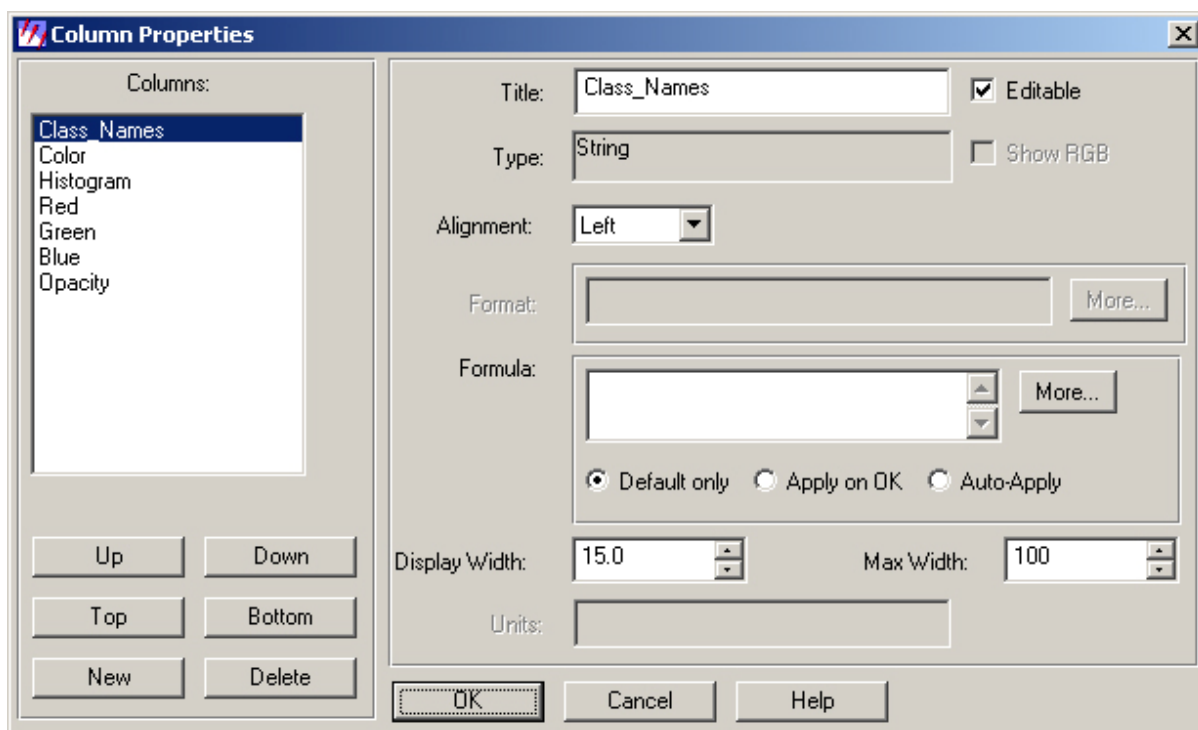
3. Enter the *Number of Classes* to be created. It is typical to create 2-3 times the number of classes that are to be classified in order to account for variations within a single class, such as shallow vs. deep water and bright vs. shadowed forest. Choose the number of iterations to run, and click OK to run the classification.



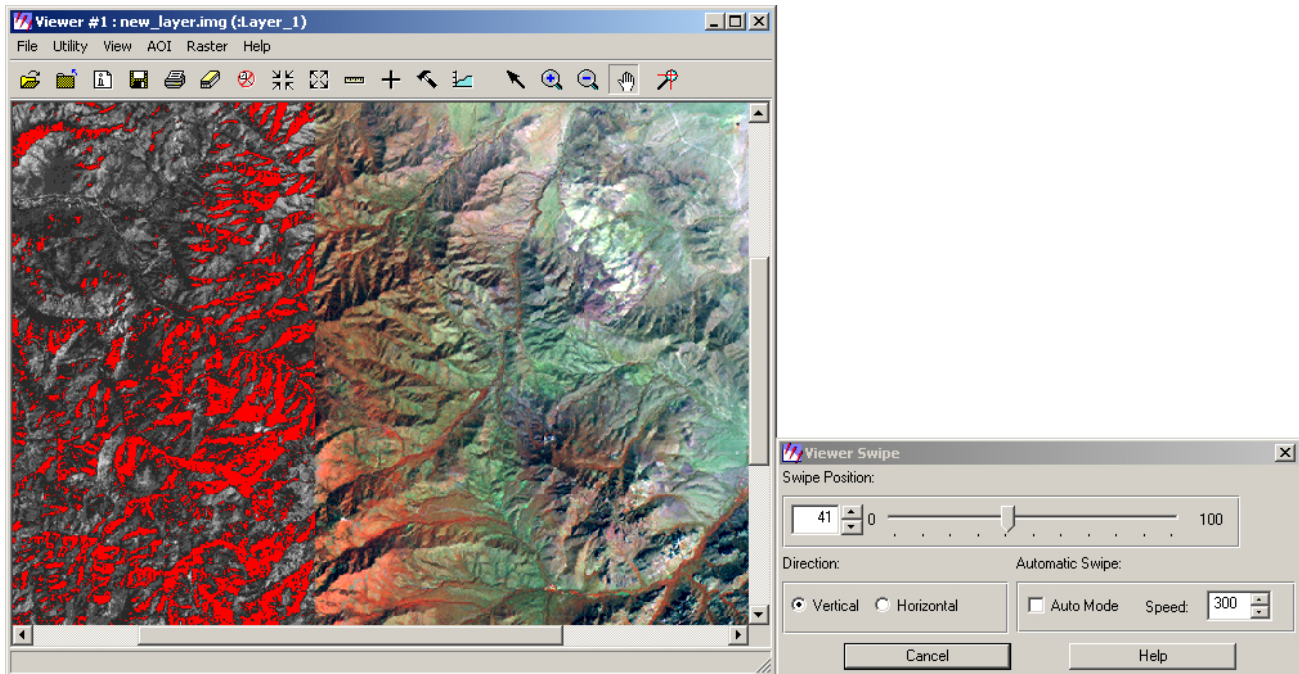
4. Once the iterations are complete, open the original satellite image in a viewer. Then add the newly created classification layer in the same viewer. Be sure to uncheck the *clear display* option in the Raster Options menu so that both the satellite image and the classified layer are in the same viewer.

5. Next, open the Raster Attribute Editor by choosing Raster > Attributes in the viewer's drop-down-menu. Here you will see a list of the attributes for each class in the classified image. In order to make this table more usable, click the *Column Properties* button. 

6. As seen in the image below, use the *Up* and *Down* toggle buttons to reorder the columns to put *Class_Names* first and colors second. You may also want to change the *Display Width* for the *Class_Names* Column to 15 as the default is very large. Click *OK* for the changes to take effect.



7. Position the viewer and Attribute Editor so that they are both visible. Right-Click on one of the color bars in the Color column of the attribute editor and change it to red. The areas on the classified layer in the viewer that turn red are part of that highlighted class. Use the Utility > Flicker or Swipe functions to compare the highlighted areas to the satellite image and decide what land cover type the class should be labeled. Enter the new class name in the attribute color, and choose an appropriate color. Repeat this process for the rest of the classes. It is not unusual for multiple classes to represent a single land cover type, these will be combined later. It is also not uncommon for multiple land cover types to exist within on class. This is more difficult to address, and there are several methods to break up these classes.



8. Once the classification is finished save the results, and use the recode function to combine multiple classes of the same land cover type. Open the Thematic Recode dialog by choosing *Interpreter > GIS Analysis > Recode*. Enter the classified image as the *Input* file, and enter a new *Output* file name. Click *Setup Recode*, and renumber the *New Value* column so that similar classes share the same value. Be sure to write down what classes the new values represent. Click *OK* to create the new image. Open the image in a viewer and attribute editor again to rename the classes based on the new values.

The 'Thematic Recode' dialog box displays a table with the following data:

Value	New Value	Histogram	Red	Green	Blue	Class Names	Opacity
0	0	0.0	0.000	0.000	0.000	Unclassified	1.0
1	1	103609.0	0.000	0.392	0.000	Forest	1.0
2	1	139751.0	0.000	0.392	0.000	Forest	1.0
3	1	126686.0	0.000	0.392	0.000	Forest	1.0
4	2	86064.0	0.498	1.000	0.000	Shrub	1.0
5	2	68843.0	0.498	1.000	0.000	Shrub	1.0
6	2	57874.0	0.498	1.000	0.000	Shrub	1.0
7	2	51078.0	0.498	1.000	0.000	Shrub	1.0
8	3	58140.0	1.000	0.843	0.000	Grass	1.0
9	3	71852.0	1.000	0.843	0.000	Grass	1.0
10	4	95128.0	1.000	1.000	0.878	Bare	1.0
11	4	135739.0	1.000	1.000	0.878	Bare	1.0
12	4	53812.0	1.000	1.000	0.878	Bare	1.0

Below the table, the 'New Value' field is set to 4, and the 'Change Selected Rows' button is visible. The dialog also includes 'OK', 'Cancel', and 'Help' buttons.