

**Geography 38/42:353**  
**Remote Sensing: Airphoto Interpretation**  
**Laboratory Exercise #9**

**Digital Image Analysis and Classification Using MultiSpec**  
**Part 3: Supervised Classification and Presentation of Results**

(20 pts)

At this point you should have a reasonably good set of training fields representing the different (spectral) land cover classes you've selected. The next step is to run the final classification. We'll experiment a little with two different supervised classification algorithms. Your final results will be presented as three classified (thematic) raster images and a short narrative discussing the results of each classification.

- 1) Using your updated training field and class statistics, classify the image using the minimum euclidean distance algorithm (Processor>Classify>Procedure: Minimum Euclidian Distance) (see Figure 1). Display the resulting \*.tif thematic raster and edit the default colour palette. Copy the class distribution text output and classified image into your report.
- 2) Now classify the image using the maximum likelihood algorithm without a threshold (see Figure 2). Display the resulting \*.tif thematic raster and edit the default colour palette using the same colour scheme as above so the two classifications can be easily compared. Copy the class distribution text output and classified image into your word processor.
- 3) Repeat step 2 but this time set a threshold value of 2% AND create a probability results file (see Figure 3). Display the resulting \*.tif thematic raster and edit the default colour palette using the same colour scheme as above so the two classifications can be easily compared. Copy the class distribution text output and classified image into your word processor. Display the probability results file and copy it to your word processor.
- 4) Prepare a well formatted final report for Part 3 consisting of:
  - a) The classification maps (\*.tif files) prepared in steps 1, 2, and 3 above.
  - b) The class distribution text output copied and pasted in steps 1, 2, and 3 above. For ease of comparison, prepare a single table showing the percent land cover in each class for each of the three classifications you ran. Compare the results of the minimum distance, maximum likelihood (no threshold), and maximum likelihood (2% threshold) classifications, discussing the similarities and differences between classifications, including how the relative proportion of pixels assigned to each class differed.
  - c) The probability map created in step 3. Describe the land cover types that were classified with the highest probability and those classified with the lowest probabilities and discuss why.
  - d) Conclude with a statement regarding how you could improve your final land cover classification given additional time and resources. That is, if you could do it over again, and neither time nor money was an issue, what would you do differently?

**Part 3 is due Thursday, April 9<sup>th</sup>.**

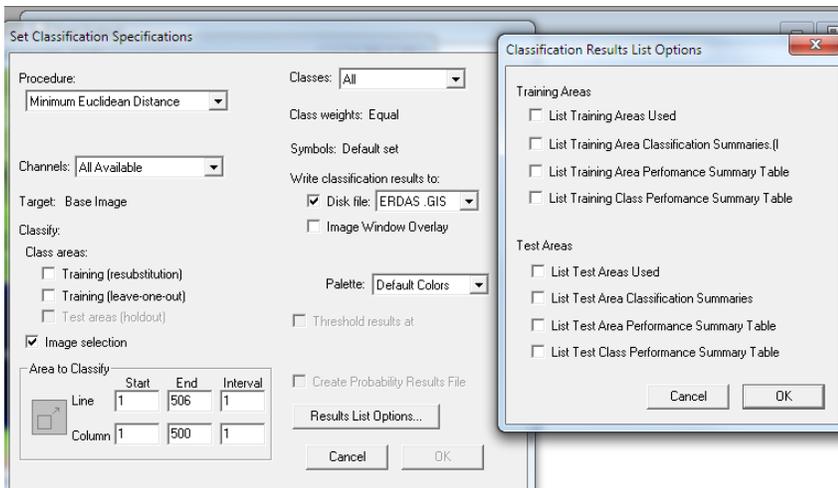


Figure 1: Minimum Euclidean Distance classification.

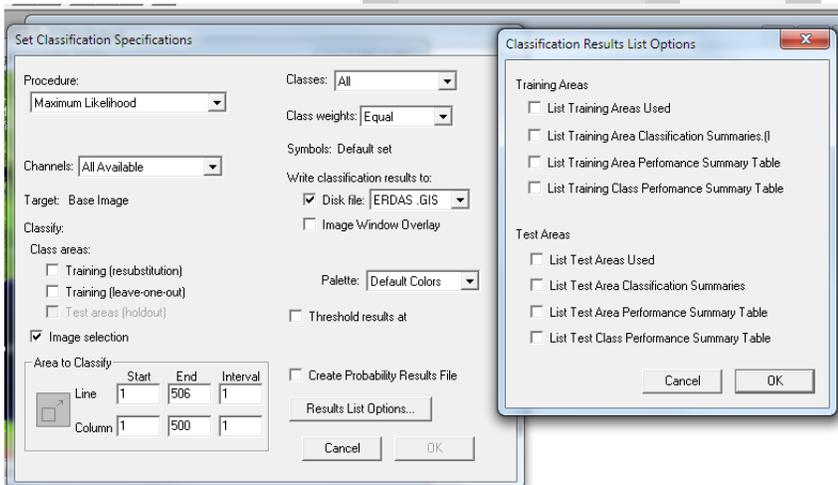


Figure 2: Maximum Likelihood Classification; no threshold.

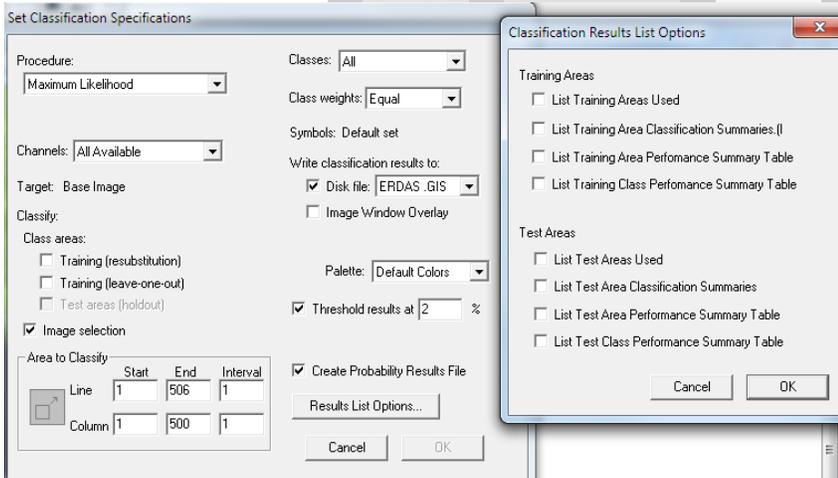


Figure 3: Maximum Likelihood Classification; 2% threshold.