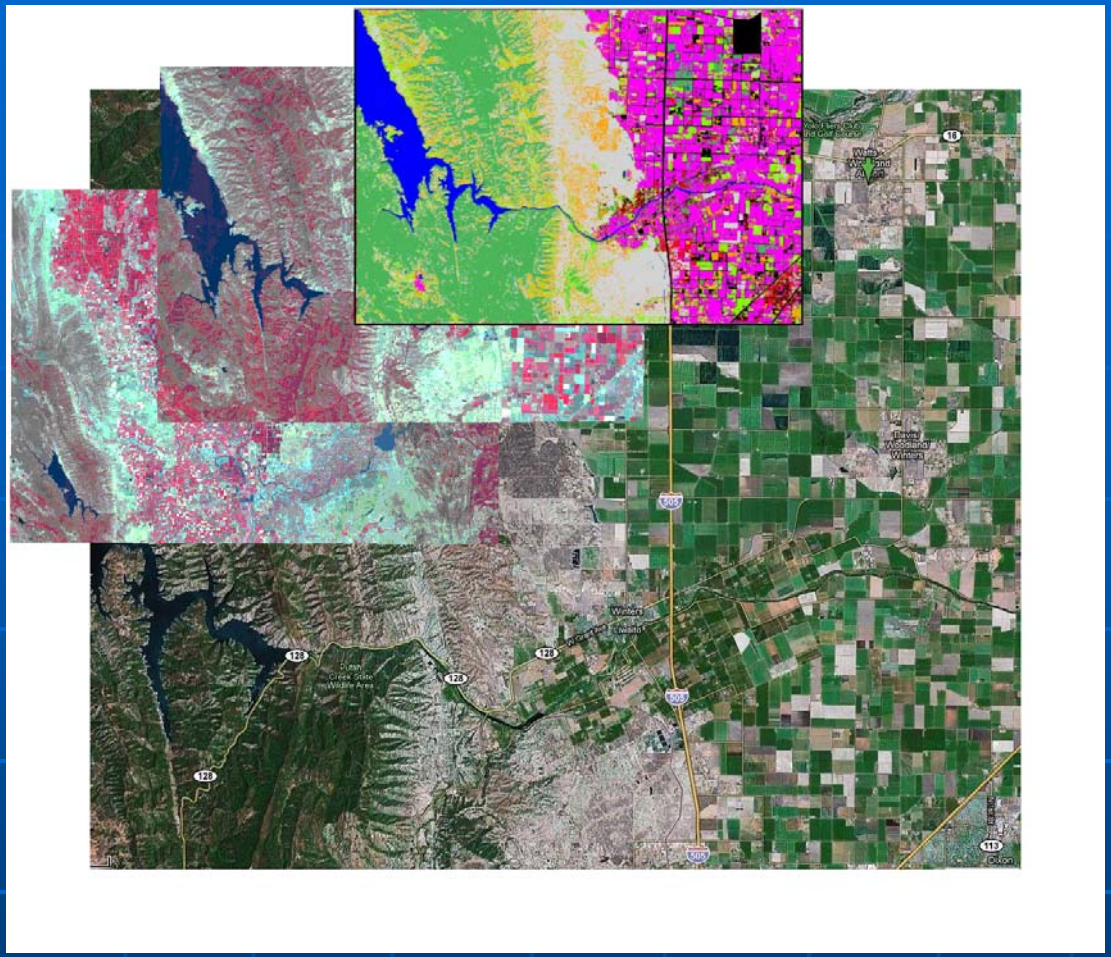
GEOG 342

Introduction to Remote Sensing & Image Interpretation

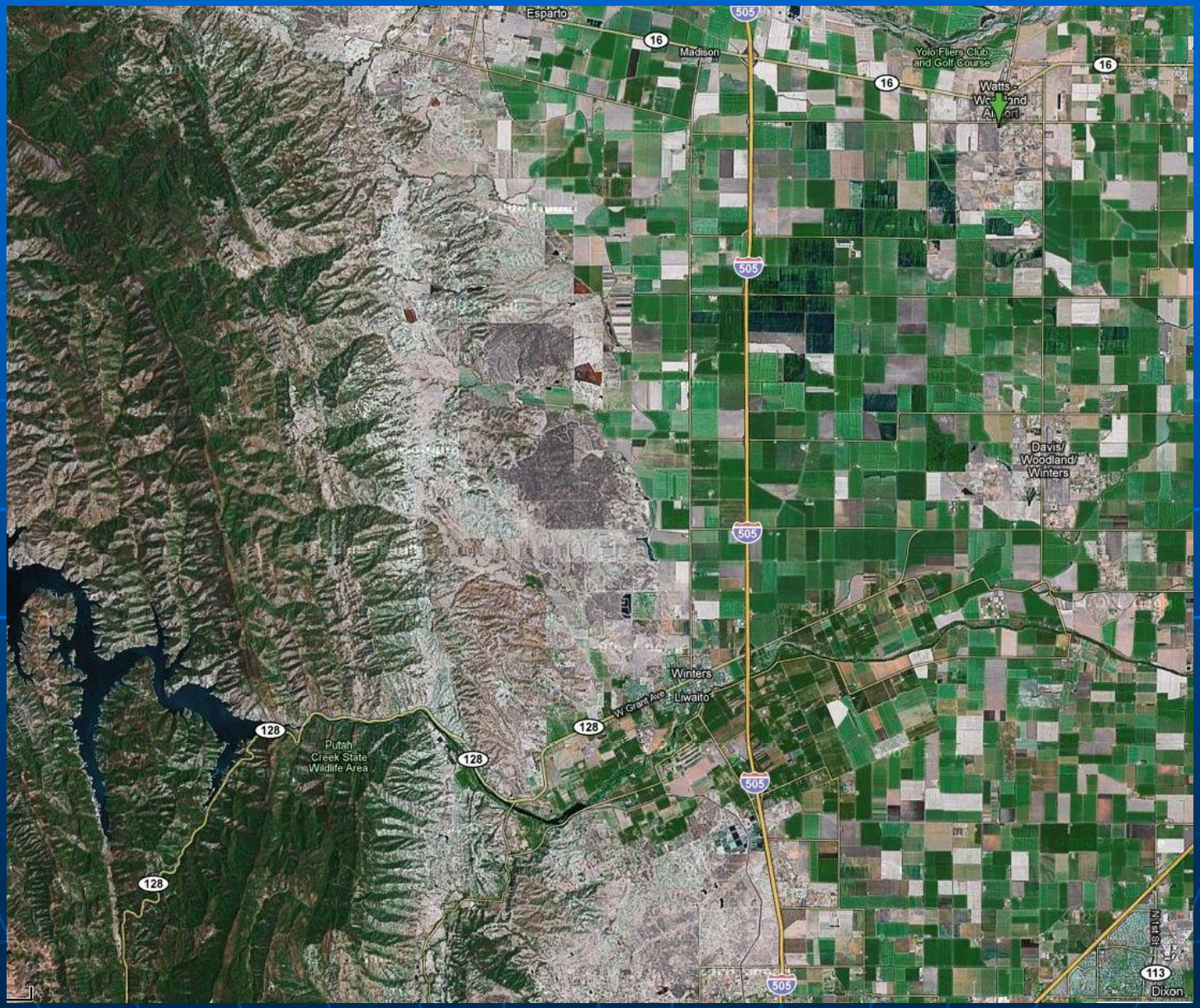


Unsupervised Classification of Landsat TM Data Image

Final project Presentation

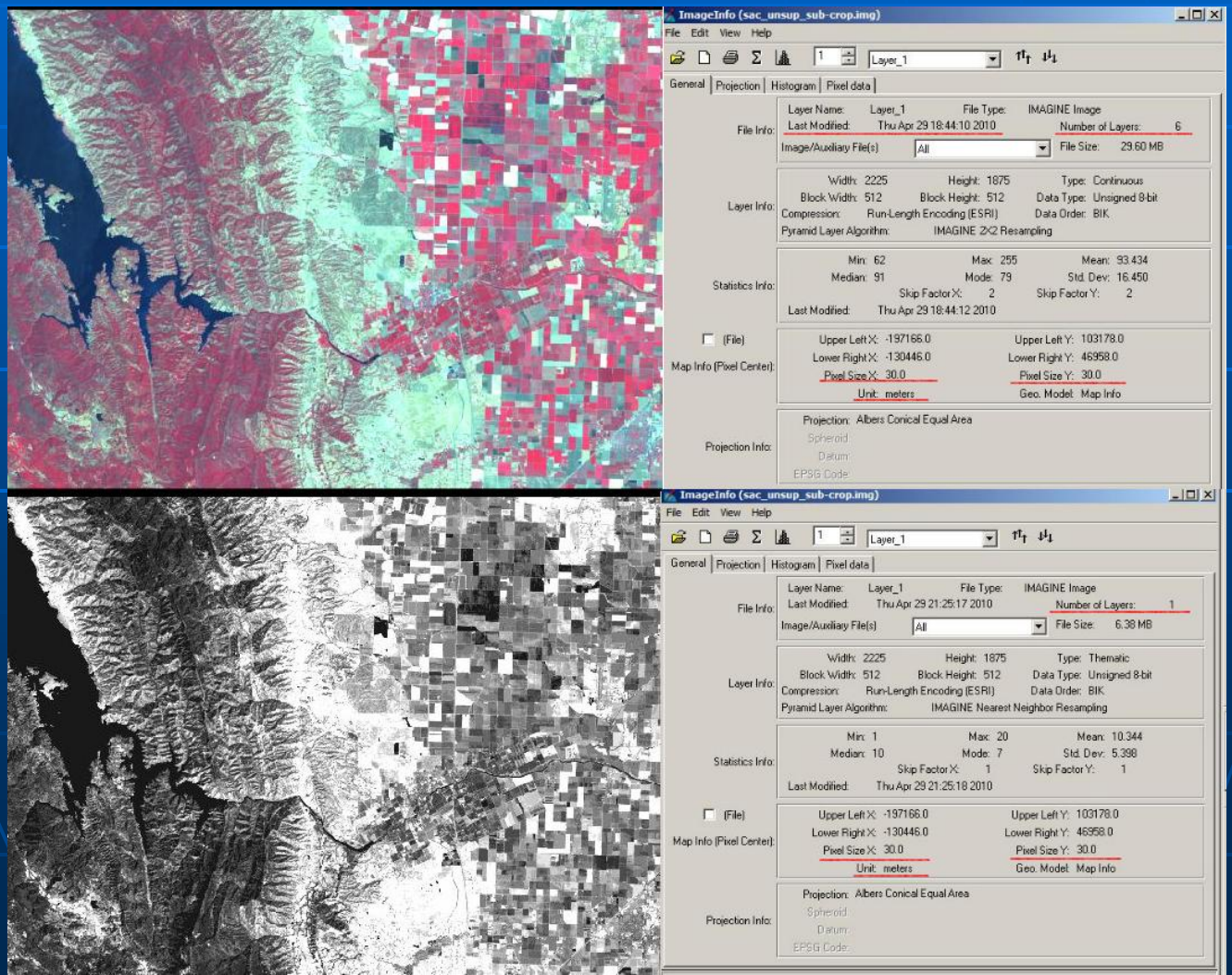
May 2010

- Area of Interest: Google Maps – Satellite Image



- **Raw Image**
  - Landsat TM Image
  - Oct 15, 2006
  - 6 Layers

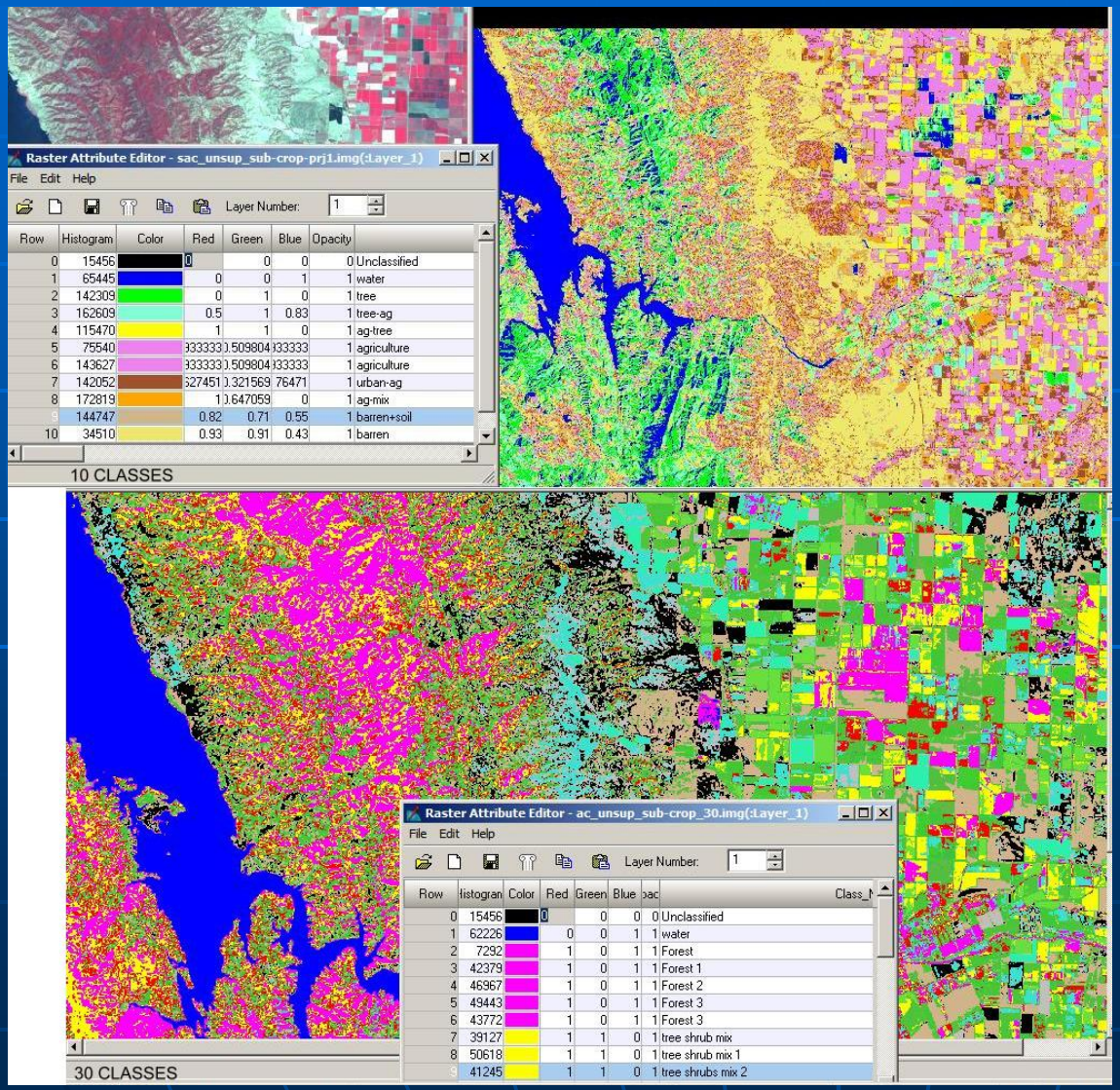
- **Unsupervised Classified Image**
  - 1 Layer
  - Pixel Size: 30m



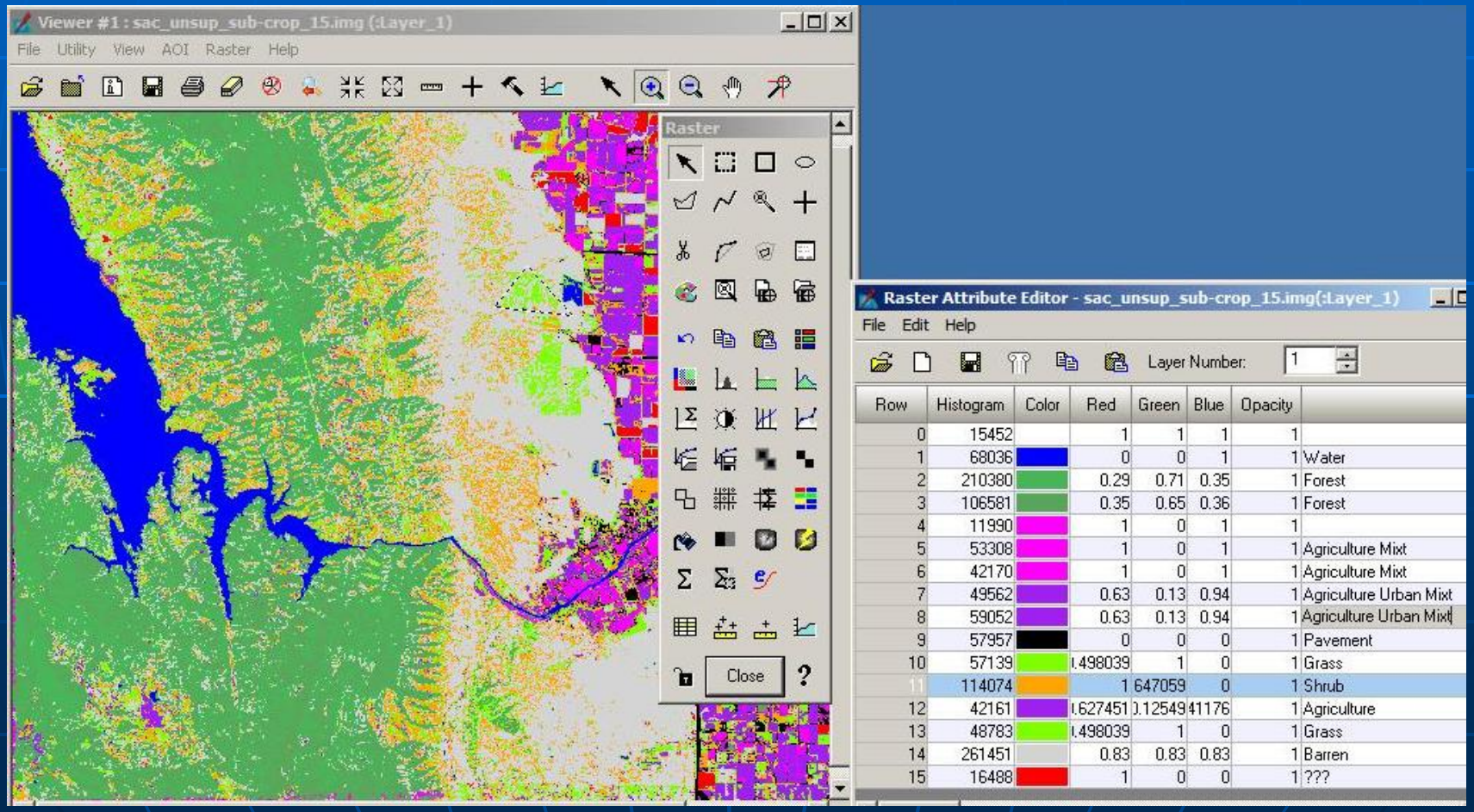
Issues Encountered

- Choosing the appropriate number of classes
- Choosing too many classes posed the problem of too many classes being recoded during the later part of classification process.
- Choosing less than optimum classes for classification resulted in many pixels being misclassified and also affected the recode process.
- The time of year when the original satellite image was taken
- The vegetation and diverse types of vegetation give a different spectral signatures over the year and also some crops would appear similar to grass, especially if they were very low to the ground, the orchard would be misclassified as forest or shrubs (depending how mature are the tree) and the bare field would be misclassified as barren.

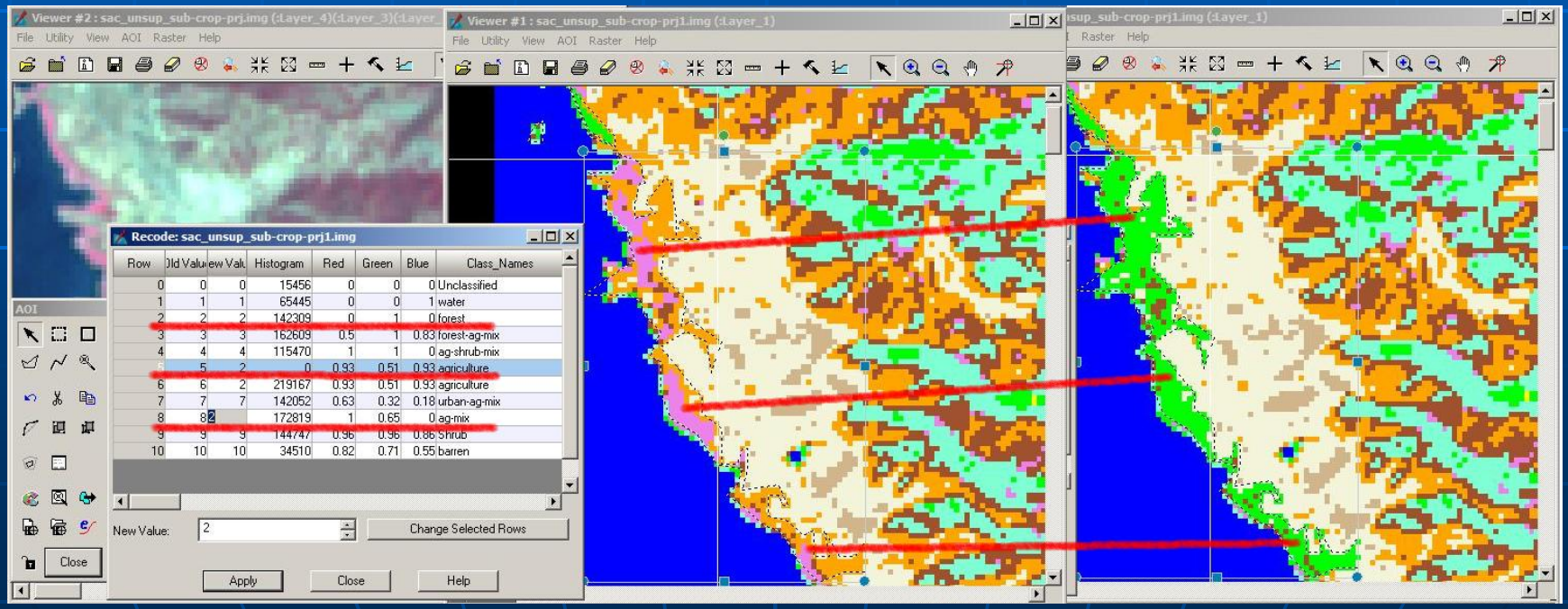
- 10 Classes vs. 30 Classes



- 15 Classes – Recoding Process
- It gave the expected seven classes and additional “mixture classes” making the recode process for misclassified pixels easier.

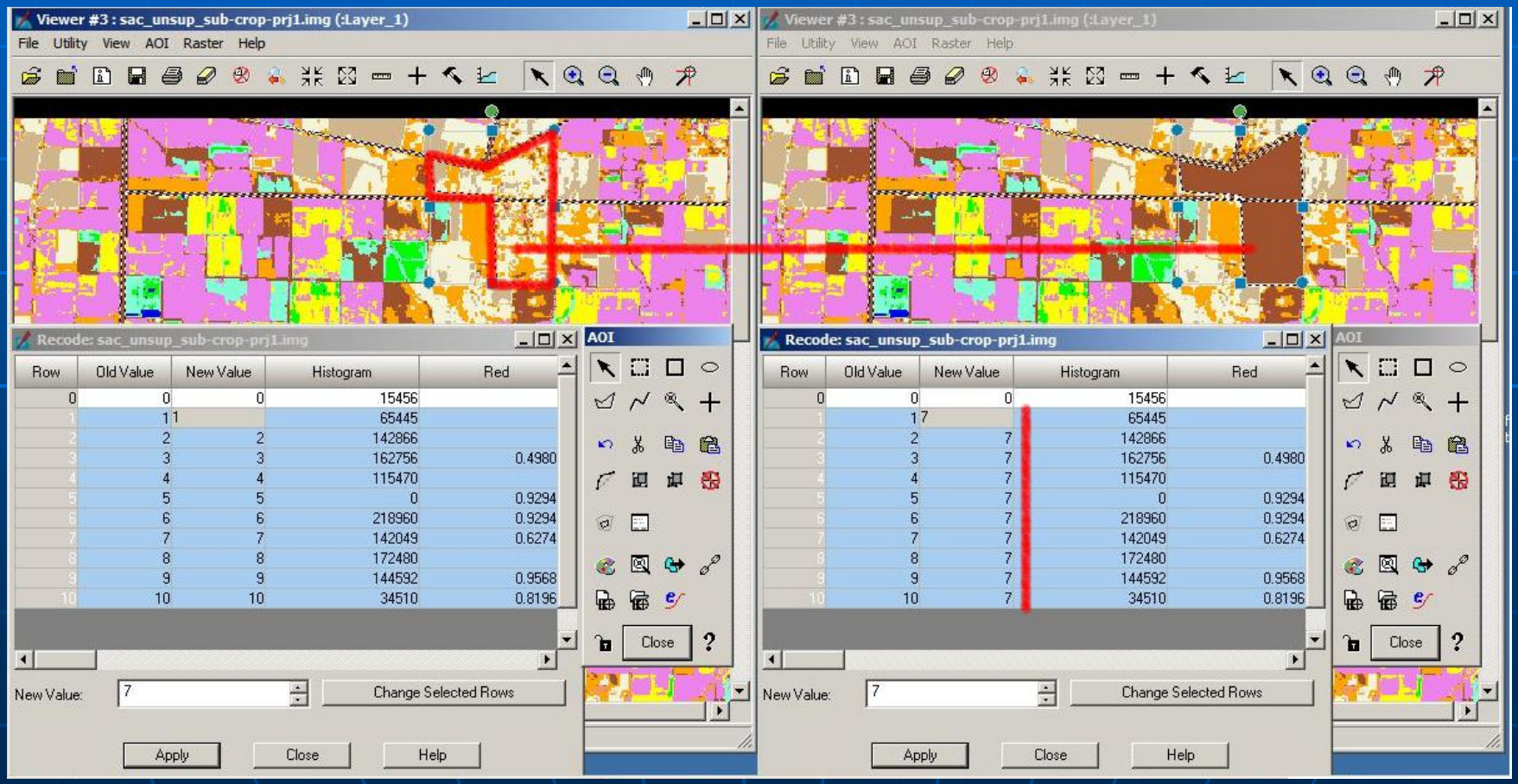


- Recoding “one-by-one”

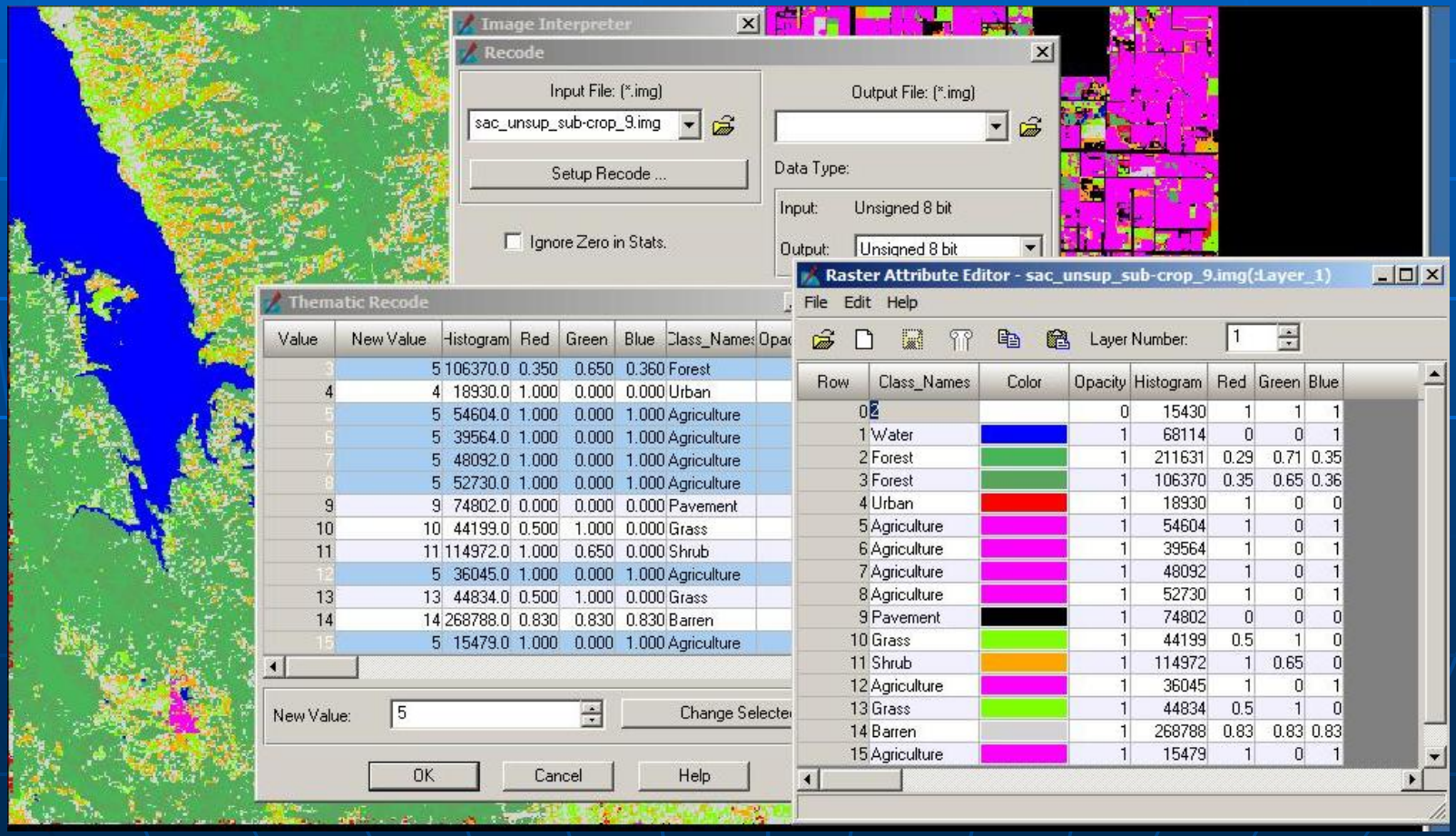


- Recoding “ all-to-one”

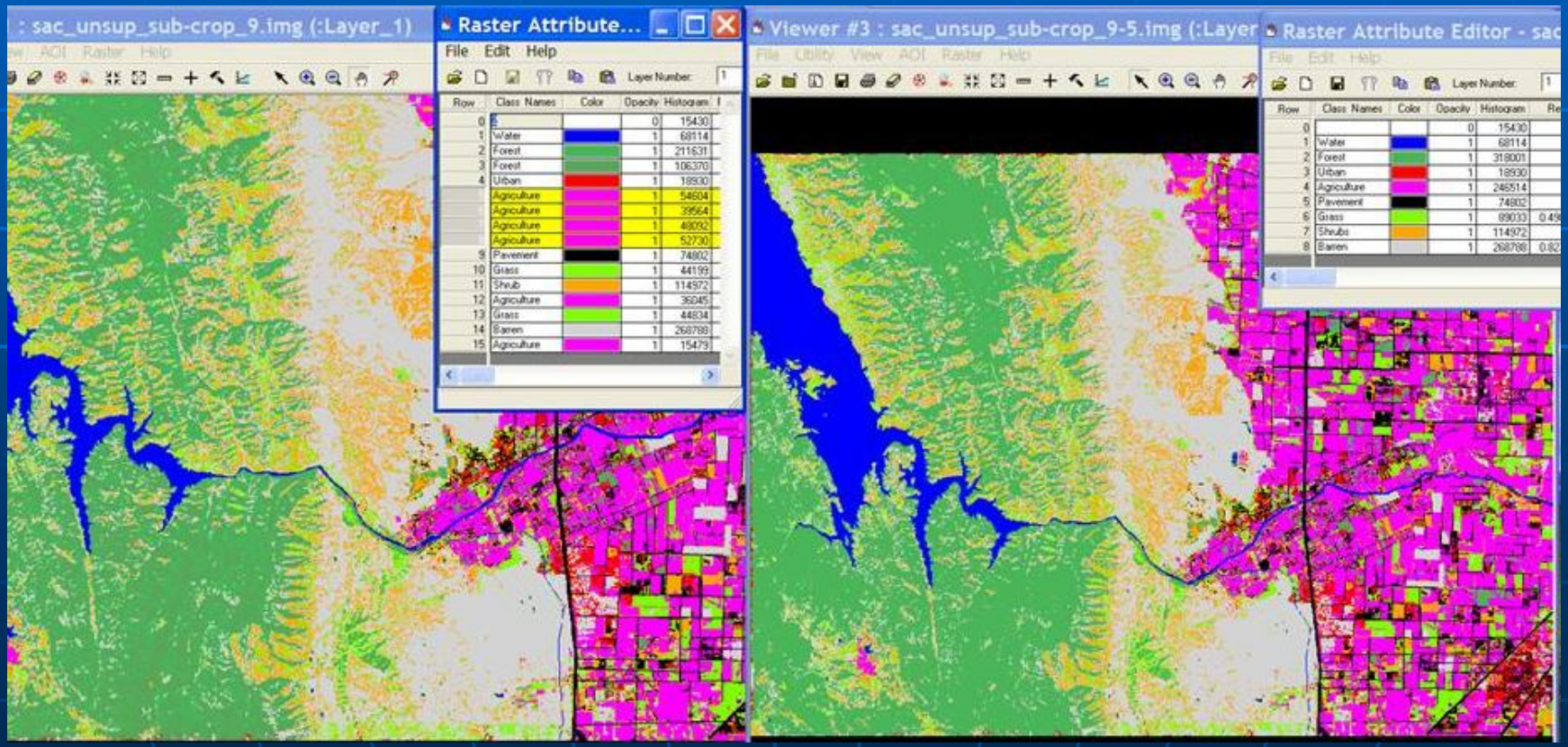
- The result looks like a “patch” cover. I consider this was not a good idea.



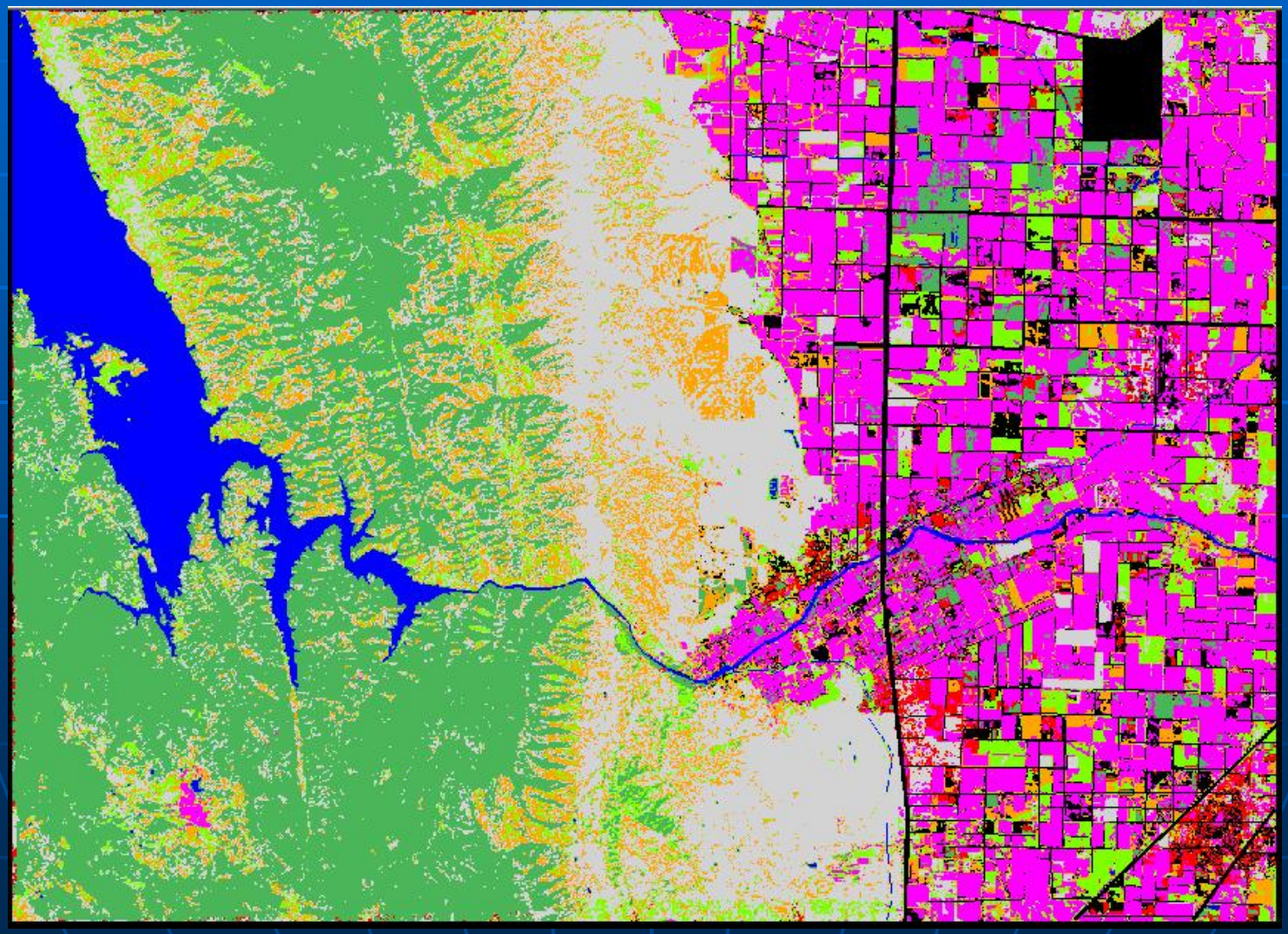
- Setup Recode



- Setup Recode



In the recode process we decided to keep the lot boundaries (we used the AOI Tools to draw lines and recode them as pavement) and to keep some misclassified lots to emphasize the large variety of the crops.



Conclusion

This project has helped me learn a lot about several aspects of digital image processing despite shortfall. The results met my objective of finding out whether or not enhanced layers of data could be used to generate a good land cover classification map.