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GEOG 404

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Assignment 8

Question 1: Discuss the differences between two images, asg7_supervised.img and asg8_unsupervised_recoded.img in regard to the distributions of their land use and land cover types.

Between the two photos, there are some differences to make note of. One of them being how the map shows the information itself. For example, the urban areas within assignment 8 unsupervised looks more clustered with dots whereas in the supervised method you can see more of the urban areas with the streets. Another difference is in the colors used. In the unsupervised method, there are four colors whereas in the supervised the colors blend according to the training areas provided.

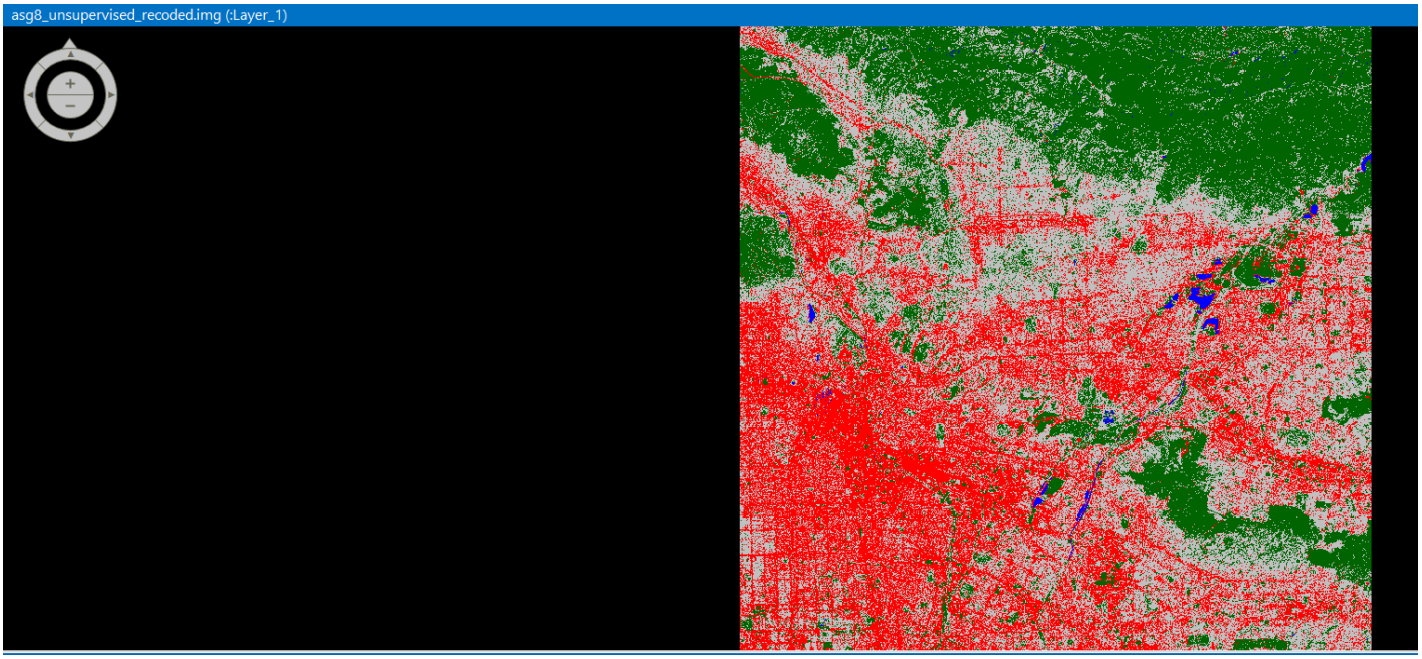
Question 2: Based on the experience you have earned on both image classification methods, supervised and unsupervised, provide an essay (≥ a half page, single-space, Times New Roman 12) discussing the advantages and disadvantages of two methods.

When it comes to the different classification methods each has its advantages and disadvantages when it comes to remote sensing. The supervised classification is guided by training samples which can result in higher accuracy. However, the user must select these training samples to provide data that can be imputed incorrectly skewing the results which brings a disadvantage. Another disadvantage is that you must have prior knowledge of the classes to properly identify them. This however is an advantage as well as it becomes very effective for identifying specific classes. Lastly due to the training samples to identify this method is less flexible and potentially more complex.

With the unsupervised method, the advantage here is there are no predefined training areas needed. This process uses the clusters of different algorithms to group the pixels accordingly. Without the training sites, there is minimal user intervention which can mean less chance for a user mistake. This process is helpful with exploratory data and can be more flexible and simpler as it relies on the clustering of pixels. The disadvantage is this method could have lower accuracy since there are no training sites.

Question 3: If you proposed to study the land use and land cover (changes) in a certain area in your final project, which image classification method(s) will you most likely use, and why? If not, use 3-10 sentences to propose a study in which supervised classification appears more appropriate than unsupervised classification.

If I were to study the land use and changes in a certain area over time for a project, I would most likely use the supervised classification method. I think this method would be more appropriate for several reasons. At first, it might be useful to use the unsupervised method to group potential classes together however over time as you study the area and become familiar with it you can use your user knowledge and select training areas for specific sites to provide more accurate results. With more accuracy, you can properly see more of a change if any in the land use over time. This method would show the data in the map in closer detail than if using the unsupervised classification.


asg8_unsupervised_recoded.img (:Layer_1)


asg7_supervised.img (:Layer_1)
N
UP