Lab 5

Map:



(Area is white)

Confusion Matrix:

A picture containing text, white, light

Description automatically generated

From the confusion matrix it can be seen that there is a complete agreement between human and machine for the classes C51 (Area), C31 (Open\_Roads) as the P\_Accuracy and U\_Accuracy for both of them have the value of 1. The lowest FP (False Positive) value is 0.8 for the class C22 (Intact\_Roof) while the lowest FN (False Negative) value is 0.88 for the class C22 (Intact\_Roof). The kappa value is greater than 0.77 indicating an almost perfect agreement.

Discussion Questions: (50-75 words per answer)

1. What other classification classes might you have included as per the schema that was loaded in task 3 step one? For example, open grass? Also, look at the bigger image that the image used in this exercise was derived from and provided with the exercise datasets. What other types of classification classes might you find from that bigger image and how might that inform the use of classification algorithms to support a disaster response?  
     
   The other classifications that I have added in the schema were ground and area. Where brown color indicates where soil is present and white color indicates open space. From comparing both the images we can ground, and area classes weren’t marked accurately so we may need to update the ground truth. But overall, it was able to mark some classes accurately like open roads, blue tarps.
2. The overall accuracy of the classification based on the Kappa value discussed in Task 6 was “substantial agreement” between ground truth data and machine data. Although this was good, it was by no means perfect. How might these types of errors potentially produce problems when using the outputs of this analysis for Disaster Response? For example, if developing damage assessment maps based on machine learning algorithm outputs, what problems might occur with use of these maps in terms of inaccuracy?

Error can be introduced in the GIS system mainly due to error in the collected data. Also, error can be introduced from natural variations. These errors can decrease the overall accuracy of the maps. In terms of accuracy, the results from a GIS system will be accurate depending upon the data at hand. In order to make these systems more accurate they must analyze, constructed and designed properly in order to identify these classes.