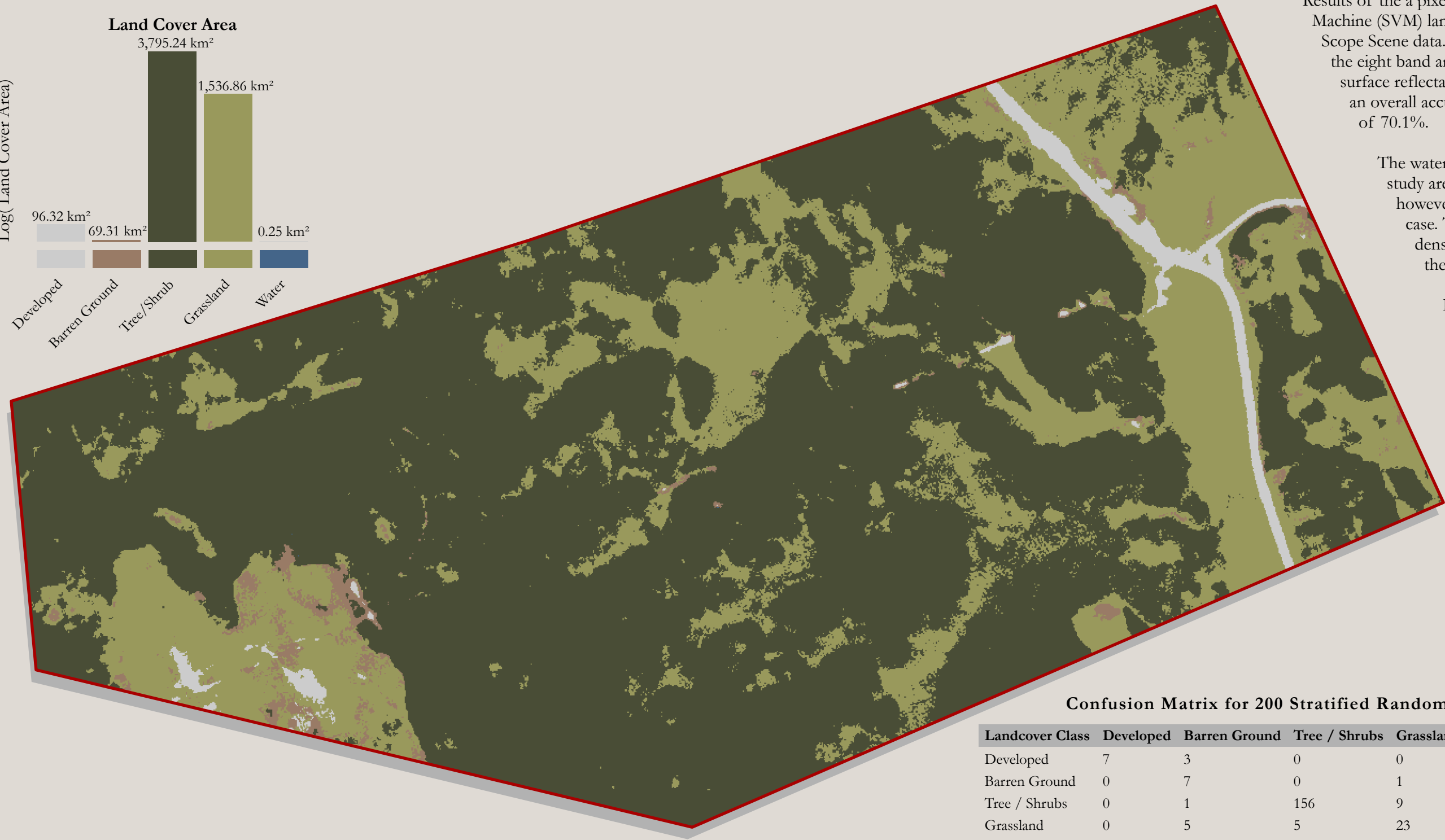


LANDCOVER CLASSIFICATION FOR THE WAIPAROUS AREA (2020)

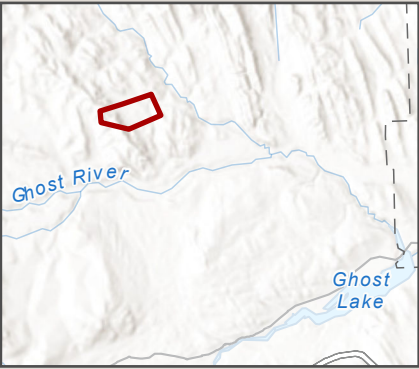
GEOS 451 | Assignment 03



Results of the a pixel based, supervised, Support Vector Machine (SVM) landcover classification for Planet Scope Scene data. The Planet Scope Scene data here is the eight band analytical product corrected for surface reflectance. The resulting classification has an overall accuracy of 87.4% with a kappa value of 70.1%.

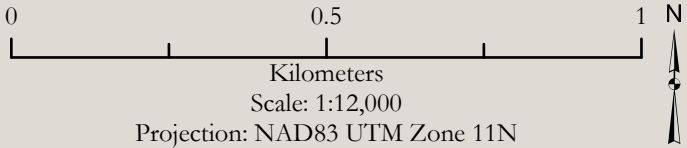
The water classification (not shown in actual study area) was determined to be 100% however by visual inspection, this is not the case. The 200 accuracy points were not dense enough to get a good metric for the model performance.

Related to the water classification, there were many issues differentiating between shadowed trees and water. Another common issue with this classification is birght barren ground with developed areas.



Confusion Matrix for 200 Stratified Random Assessment Points

| Landcover Class | Developed | Barren Ground | Tree / Shrubs | Grassland | Water | Total | U Accuracy | Kappa |
|-----------------|-----------|---------------|---------------|-----------|-------|-------|------------|-------|
| Developed | 7 | 3 | 0 | 0 | 0 | 10 | 0.700 | 0.000 |
| Barren Ground | 0 | 7 | 0 | 1 | 0 | 8 | 0.875 | 0.000 |
| Tree / Shrubs | 0 | 1 | 156 | 9 | 0 | 166 | 0.940 | 0.000 |
| Grassland | 0 | 5 | 5 | 23 | 0 | 33 | 0.697 | 0.000 |
| Water | 0 | 1 | 3 | 0 | 1 | 5 | 0.200 | 0.000 |
| Total | 7 | 17 | 164 | 33 | 1 | 222 | 0.000 | 0.000 |
| P_Accuracy | 1 | 0.411765 | 0.95122 | 0.69697 | 1 | 0 | 0.874 | 0.000 |
| Kappa | 0 | 0 | 0 | 0 | 0 | 0 | 0.000 | 0.701 |



Data Source:
Planet Labs PBC, SAIT
Cartography: Patrick Harrison (733057)
Date: 2024/11/24