ABSTRACT

This work describes the estimation of the above ground live biomass (AGLB) of a tropical forest area from field plot measurements and multispectral Landsat data using machine learning techniques such as neural networks for retrieval. Correlations with satellite lidar measurements are also considered. Modeling aspects are taken into account as well. The study area, the Gola Forest Reserve, is the newest National Park of the country with an area of about 710 square km, and the largest closed canopy lowland rain forest remaining in Sierra Leone, being habitat of several endangered species and a biodiversity hotspot. Due to its protection status and controls enforcement, the Gola forest can be considered mostly undisturbed since the last 10 years.