Mapping and Modelling of Animal Diversity Index in Green Campus Using Integrated Geospatial Technique and In–Situ Camera Trapping

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SUMMARY

This paper reports a biodiversity index of ground animal species using the indirect remote sensing approach for large-scale mapping. Remotely sensed data acquired from World View 2 satellite data were used to obtain biophysical parameters, where all these parameters are then utilized for modelling of animal biodiversity mapping in a green landscape of Universiti Teknologi Malaysia campus. Three biodiversity indices, namely, species richness, evenness, and diversity were mapped and analysed against ground truth obtained from unmanned sensor-camera trappings. The biophysical parameters derived from the remote sensing and ancillary information for the mammal habitat heterogeneity was categorized based on relevancy to vegetation density and moisture presence within the canopy and vegetated areas. Results of this study demonstrate the utility of satellite remote sensing, especially with the new generation of fine spatial and spectral data such as World View2 data, for mapping animal biodiversity at large scale. The derived richness, diversity and evenness indices were shown to agree fully with the in-situ observations.

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