Abstract

A vulnerability assessment is a useful tool to research the decrease and fragmentation of natural habitats for sustainable landscape management. Soil erosion is an important abiotic factor that can cause landuse changes. To express and evaluate the vulnerability to soil erosion on Mauritius two vulnerability models were used, the Revised Universal Soil Loss Equation (RUSLE) model, and an adapted version of the South Pacific Applied Geoscience Commission (SOPAC) model. The aim was to express vulnerability to soil erosion in GIS by means of the RUSLE, to evaluate the abiotic components of the SOPAC model and discuss how accurately the results represent the spatial vulnerability in terms of soil erosion compared to the results of the RUSLE model. The RUSLE model showed high vulnerability in the southeast of the island, and in the cyclone season months February and March. Where rainfall exceeded 150-200 mm higher vulnerability was predicted. The adapted SOPAC model proved insufficient for an extensive comparison, due to incompatibility of factors. General trends were visible, some of which corresponded with the trends observed in the RUSLE model. Further research could incorporate elements of the adapted SOPAC model to improve the vulnerability assessment based on the RUSLE model.