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Detecting *Seriphium plumosum* spatial distribution dominancy using some of abiotic variables in Msukaligwa Local Municipality, Mpumalanga

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The spread of *Seriphium Plumosum* is a significant environmental predicament which is aggressive to South African grasslands. Detecting *Seriphium Plumosum* spatial distribution dominancy using abiotic variables is crucial towards the management of its population and it assists researchers, farmers and governments to understand the species' spatial distribution. Areas which are currently affected by *Seriphium Plumosum* were mapped using GIS and remote sensing techniques. A reconnaissance survey was employed to gather accurate point locational information about the *Seriphium Plumosum*. GPS coordinates were collected and used as a location reference to digitize areas affected by *Seriphium Plumosum*. Remote sensing was applied during the process of image interpretation. Unsupervised classification results and land cover maps were used as field work guide tools. Potential survey areas were selected by masking out the land cover from a land cover database such as plantation, towns, mines and cultivated land that are less likely to be affected by *Seriphium Plumosum*. Soil texture, soil depth, mean annual rainfall, land cover, slope and aspect raster data were used in this study. The ArcGIS spatial analyst tool was used to reclassify the data. It was detected that *Seriphium Plumosum* prefers deep to very deep soil with loam clay texture, loams and sandy loams. However, although, *Seriphium Plumosum* prefers these variables it should not be considered that *Seriphium Plumosum* cannot be distributed to other variables because it was also found in other variables but at a lower rate. This study also found that *Seriphium Plumosum* prefers areas that are classified as cultivated land. Similarly, it was documented as well that *Seriphium plumosum* flourishes well in the disturbed areas or abandoned land.

Biography

N S Nethengwe is currently the Deputy Dean and HOD of Environmental Sciences University of Venda, South Africa, His research interests includes applications of PGIS/GIS/RS in flood risk, gully extraction, modeling soil erosion and cross-border trade & green economy. He is registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions.

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