

Spatial distribution of invasive large feverberry trees (*Croton megalobotrys*) in Sengwa

Wildlife Research Area: Gokwe, Zimbabwe

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Abstract

Background

The invasion of rangelands by invasive plant species is a major threat to biodiversity in most parts of Zimbabwe posing not only an ecological challenge but a growing management and eradication challenge as well. However, there is sparse information relating to the spatial distribution of these species and the conditions promoting their growth and development particularly in Southern Africa. The study assessed the spatial distribution of the invasive large fever berry tree and associated soil type in Sengwa Wildlife Research Area. A mixed methods research design tri- angulating qualitative and quantitative methods was utilized. All known sites occupied by large fever berry trees were obtained from the Sengwa Wildlife Research Institute's records on invasive plant species. Ground truthing was done for all sites and global positioning system coordinates of occupied areas were collected. Mapping of invaded areas by the large fever berry tree was done using Quantum GIS software. Coordinates were imported to show points with the large fever berry tree. Altitude of invaded areas and soil samples were also collected for soil analysis and a soil texture triangle was used to come up with the soil type associated with the growth and spread of the large fever berry trees.

Results

The results show that the large fever berry tree occupied areas along major rivers and streams on loam soils. An area of 16.5km² which is 4.4% of the Sengwa Wildlife Research Area is invaded by the large fever berry tree. Results further indicated that sandy- loam soils were associated with the growth and development of the large fever berry tree in Sengwa Wildlife Research Area. Veld fires were also identified as a factor influencing the spread of the large fever berry tree species in the Sengwa Wildlife Research Area.

Conclusion

In conclusion, a holistic framework was developed to curb the invasion of the large fever berry tree in Sengwa Wildlife Research Area. It is recommended that further studies be conducted outside the protected area to establish soil characteristics and invasion rates in order to fully understand drivers of its invasion.