Spatial plant diversity analyses of the Nkhuhlu exclosures, Kruger National Park

Research proposal for honours project

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Introduction

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- This project falls within the objectives of the exclosures: investigating the effect of disturbances such as fire, flood and herbivory.
- The objectives of this study are to investigate plant diversity (alpha - and beta diversity) across different treatments at Nkhuhlu.
- Distinct plant diversity gradients perpendicular (across the catena) and parallel (across exclosure types) to the Sabie River are expected.
- The aim of this poster is to present the project design and methods.

Data Collection

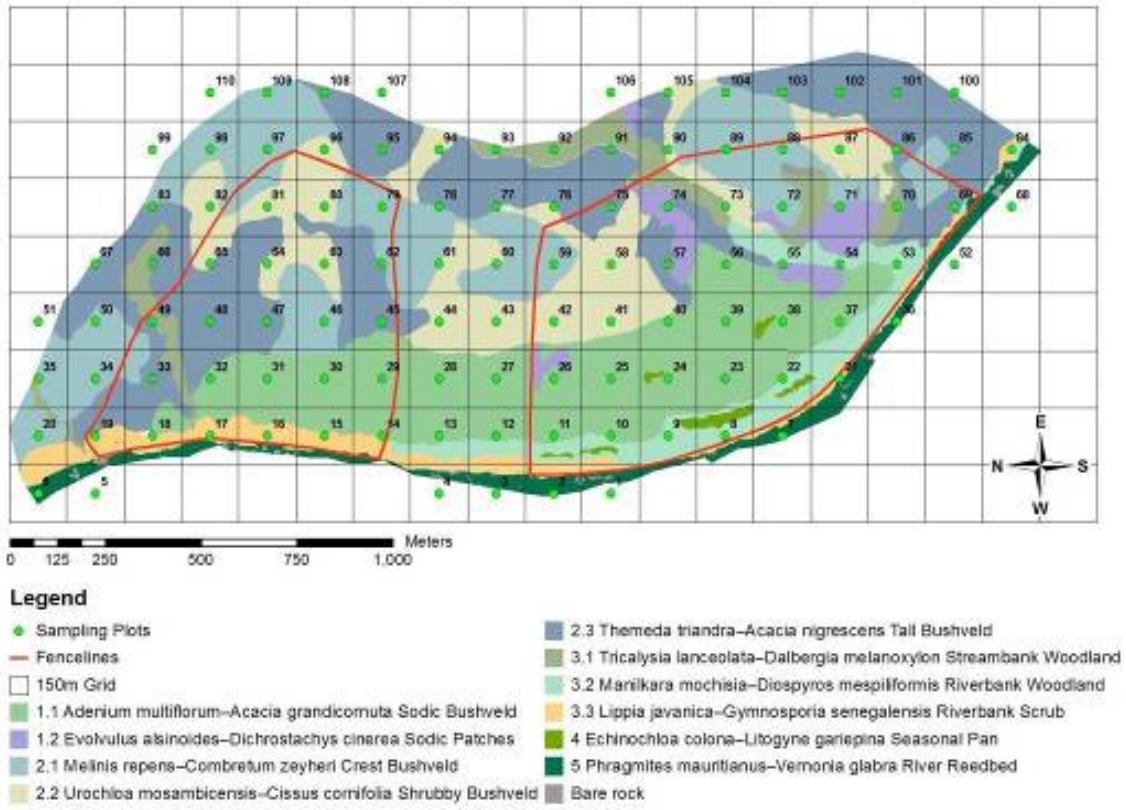

Fig. 1: Grid with pre-selected sampling points projected onto the vegetation map of the Nkhuhlu exclosures (Siebert & Eckhardt, 2008).

- Plot selection for plant diversity surveys followed the grid-approach.
- A grid of 150 x 150m squares was placed over the vegetation map.
- The centre of each grid = the point to be sampled.

Data Collection

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- The Point-quadrat method will be followed to sample floristic data.
- Each of the 20 x 20 m diversity plots will be sub-divided into five transects of 20 points each, with the transects spaced 5 m apart.
- Furthermore, a complete list of all the plant species present in the 20 x 20 m plot will be compiled.

Analyses

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- The Shannon-Wiener plant diversity index will measure plant diversity across the different treatments.
- Beta-diversity will be analysed with PRIMER to quantify species-turnover along a disturbance gradient.
- Block Kriging will be applied for a visual comparison of floristic patterns.
- ‘Add-on’: all grass species encountered will be categorized according to their ecological status to compare grazing value across treatments.

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THANK YOU

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