

Understanding Landscape Patterns in the Four Corners Area of Southern Africa: An Investigation of the Role of Resource Management Decisions in Determining Landscape Change and Fragmentation

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My research examines the impact of protected areas as a strategy for limiting environmental change in southern African savanna ecosystems. To study the impact of protected area designation on the environment, I am examining the changes in land cover composition and patterns within and around two protected areas. Although changes in land cover do not encapsulate all environmental changes, land cover composition often provides the resource base for terrestrial ecosystems and directly impacts ecological functioning. This study's objective is to identify the causes of land cover change in southern African savannas, assess the usefulness of protected areas in limiting this landscape change and test the overarching hypothesis that protected area designation decreases land cover change and landscape fragmentation.

This research incorporates the combined use of field collected and remotely sensed land cover data coupled with interviews with local land managers to examine how management decisions affect landscape change. Landscape change can be qualitatively

and quantitatively explained using a combination of field collected data, remotely sensed data and social data. This work aims to use the triangulation of a variety of data sources (and methodologies) to assess the impact of human land management decisions on



landscape level changes.

The results of my research will present findings that enable improved decisions regarding environmental management and an increased understanding of how human decisions affect landscape changes, which in turn affect human systems. To successfully manage landscapes, measurements of change in composition and configurations are essential to understanding how management decisions affect landscape patterns. By first investigating the causes of change in this region and then examining how land management decisions influence the spatial composition and configuration of land cover, I hope to contribute to the understanding of human environment interactions in southern African savannas and more specifically the impact of protected area designation on the landscape. This study focuses locally on changes in the Caprivi, Nambia and in the north eastern region of Botswana.

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