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## Impact of Livestock Grazing on the Dry Ecosystems of Southern Madagascar

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### Abstract

The goal of the study was to understand the habitat utilization of livestock and its impact on biodiversity components in different types of spiny forest and grassland in and around the spiny forest ecosystems of National Park of Tsimanampetsotsa, southwestern Madagascar. Transhumance is one of the main forms of land use in this region. The dry forests of the national park are preferred pasture for cattle and goats for large parts of the year with obvious effects on the vegetation. As a consequence Madagascar National Parks (MAP) identified grazing as one of the main threats for the protected ecosystems in the south and one of the drivers for habitat degradation. Specific aims and activities of the present study were: (1) Documentation of vegetation characteristics (species composition, biomass production, regeneration, utilitarian species) in specific vegetation types in and around Tsimanampetsotsa NP; (2) Quantitative documentation of utilization patterns of these areas and plants by livestock; (3) Classification of categories of degradation; and (4) Combining the three to map out transhumance zones for zoning purposes. For this we identified areas of different degrees of degradation. There, we applied standardized methods to measure the floristic composition, vegetation structure, standing biomass of main food plants, their chemical composition and their phenology, as well as vegetation regeneration of annual and woody plants. The results are used to develop a simple tool with the help of Google Earth images which can be applied locally and which will allow zoning of the integrated protected area system and subsequent monitoring of habitat change over time.

**Keywords:** Madagascar, grazing, transhumance, cattle, goats, vegetation characteristics