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Grazed Vegetation Types near Tsimanampetsotsa National Park in Southwestern Madagascar

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Abstract

Grazing of natural rangelands is the dominant land use on the calcareous semi-arid Mahafaly plateau in southwestern Madagascar, especially during the rainy season. Then, transhumant herds of cattle and, to a lesser extent, small ruminants, populate the vast grazing areas, locally exerting high grazing pressure. However, during the dry season, drinking water scarcity and professionally organised livestock theft lead to a considerable destocking of the plateau and utilisation of the sandy plains of the adjacent coastal region close to the Tsimanampetsotsa National Park.

In both regions we determined the dominant vegetation types and inventoried their floristic composition, the biomass availability, and compared the production of herbaceous forage biomass in the rainy season 2011/12 and dry season 2012. To this end we installed 60 permanent plots (30 m × 30 m) along a 4 km long east-west transect centring on each one of four coastal and four plateau villages. Altogether, six types of grazed vegetation were identified in the coastal littoral, on the plateau and in the National Park area of the study region.

The following main vegetation types are prevailing in the region: dry forest (plateau, National Park), dry spiny forest thicket (National Park), coastal bushland with *Euphorbia stenoclada* (coastal plain), shrubland (plateau and coastal plain at degraded areas), wooded grassland (plateau) and grassland (plateau at degraded areas, plain near Tsimanampetsotsa lake). The highest floristic diversity was found in the forest and the lowest in the grassland, which mostly develops after slashing and burning of forests. In both seasons, the highest herbaceous forage biomass was recorded in the *Heteropogon contortus* wooded grassland of the plateau, whereas the forest understorey offered the lowest herbaceous mass. During the dry season, the coastal bushland was an important source of forage due to the direct grazing as well as harvest and feeding of the succulent branches of the *Euphorbia stenoclada*.

Keywords: Deciduous spiny forest, *Euphorbia stenoclada*, forage, Mahafaly plateau, wooded grassland