

SUMMARY

Vegetation description and mapping along a strip transect in central Namibia with the aid of satellite imagery.

by

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The main objectives of this study, which is part of the BIOdiversity monitoring Transect Analysis in Africa Project (BIOTA), were to document, classify and describe the changes of phytodiversity along a strip transect in central Namibia, paying attention to vegetation structure and floristic composition. Distribution of the vegetation types was obtained by supervised classification of satellite data for the study area.

The study area is located on a 30 x 320 km stretch between 21°45'00" S and 19°45'00" S, roughly following the main road Okahandja - Otavi - Grootfontein, concentrating on the plains and avoiding mountain ranges. Long-term average rainfall varies from 300 mm in the south to 600 mm in the north, falling mainly during January to March. Mean maximum temperature ranges from 28 to 30° C in January, mean minimum temperatures in July range from 3-8° C with occasional frosts.

Original selection of sampling areas was based on false-colour maps of satellite images 178/74 and 178/75. 425 Relevés were collected during mid-February to mid-May of 2001 and 2002, another 42 relevés were added from the BIOTA observatories located within the study area. These data were classified using TWINSpan and refined with Braun-

Blanquet-procedures. Main environmental gradients were identified with DCA and PCA ordinations.

The classification of the floristic data resulted in four different phytosociological tables, which include following vegetation types:

Table 1:

- Association 1: *Catophractes alexandri* - *Willkommia sarmentosa* tall sparse shrubland
- Association 2: *Boscia albitrunca* - *Eragrostis cylindriflora* low open woodland
- Association 3: *Acacia mellifera* - *Leucosphaera bainesii* low closed shrubland with patches of low open woodland
- Association 4: *Acacia mellifera* - *Eragrostis rotifer* low moderately closed bushland
- Association 5: *Acacia mellifera* - *Monechma genistifolium* low semi-open bushland

Table 2:

- Association 6: *Albizia anthelmintica* - *Stipagrostis uniplumis* low open woodland
- Association 7: *Acacia mellifera* - *Aristida congesta* low semi-open bushland
- Association 8: *Acacia erioloba* - *Stipagrostis uniplumis* low semi-open bushland
- Association 9: *Lonchocarpus nelsii* - *Eragrostis rigidior* low moderately closed bushland

Table 3:

- Association 10: *Boscia foetida* - *Leucosphaera bainesii* low semi-open bushland
- Association 11: *Acacia mellifera* - *Stipagrostis hirtigluma* low moderately closed bushland
- Association 12: *Acacia mellifera* - *Cenchrus ciliaris* low moderately closed bushland

Table 4:

- Association 13: *Dichrostachys cinerea* - *Cenchrus ciliaris* low moderately closed bushland
- Association 14: *Terminalia prunioides* - *Croton gratissimus* low closed bushland

The delineation of these associations was established using a supervised classification of satellite data of the study area. The delineation of a formal vegetation map will require the combination of some of these vegetation types into larger units, as well as additional sampling of vegetation types only marginally covered by the study area.

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