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## ABSTRACT

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Patterns of elephant browsing in Mana Pools and Lower Zambezi National Parks' riverine vegetation were investigated in sixteen and five variables transects, respectively. In each transect, tree and shrub species were identified. Data on woody species characteristics and type of damage were collected. Damage was classified as bark damage, push over, branch breakage or conversion by breakage of the main stem.

In terms of species composition, 89% of all woody species in Mana Pool National Park were trees, while shrubs accounted for 11%. In Lower Zambezi National Park, trees constituted 64.5% of the woody species, while shrubs accounted for 35.5%. The most frequent species in both parks was *Faidherbia albida*.

In Mana Pools National Park the percentage of all trees that showed old and new elephant damage were 35 % and 15.2 %, respectively, whereas for shrubs, it was 0 % and 13 %, respectively. Other forms of damage, such as push over, branch breakage and conversion, were 13.8% for trees, and 23.2% for shrubs. Old and new damage in Lower Zambezi National Park amounted to 7.8 % and 7.9 % for trees and 0 % and 2 % for shrubs, respectively. Other forms of damage amounted to 27.0 % for trees and 42.9% for shrubs. Statistical analyses showed that most sites in Mana Pools National Park were associated with bark damage (old and new) and conversion, while those of Lower Zambezi National Park were associated with branch breakage and pushing over of trees.

Most woody species showed light to moderately light bark damage, with *Combretum imberbe* having the highest mean percent bark damage. *C. imberbe* consequently recorded the highest preference index value in Mana Pools National Park.

The most preferred species in Mana Pools National Park were *C. imberbe* and *Kigelia Africana*, with preference indices of 21.23 and 6.32, respectively. In Lower Zambezi National Park, the most preferred species were *Acacia sieberiana* and *Acacia tortilis*, with preference indices of 41.49 and 18.47, respectively.

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