

## Forest structure and regeneration of gray mangrove (*Avicennia marina*) in Red Sea coastal region of Egypt

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### Abstract

In the Red Sea coastal region of Egypt, established mangrove communities are uniquely different from mangrove forests in other parts of the world because of their low biodiversity and harsh habitat of arid and highly saline conditions. Therefore mangrove forests in this area appear in patchy and scattered patterns at mouths of wadi or in sheltered lagoons with rare and irregular flooding. Most of them are pure forests of *Avicennia marina*, occasionally mixed with *Rhizophora mucronata* in the southern part of the Red Sea. In this study, we investigated the forest structure of *A. marina* and discuss the regeneration strategy and the forest dynamics of this unique mangrove species. At the study site, we established the study plot in an *A. marina* mangrove forest and classified each mature individual (trees more than 5 years old) into grazed tree and ungrazed tree by eye. We also measured the tree height, diameter, and branch spread at four cardinal points. The mean height of grazed trees was  $0.80 \pm 0.25$  m and that of ungrazed trees was  $2.38 \pm 1.14$  m respectively. The grazed trees tended to be dwarfed than the ungrazed trees. This result suggests grazing by camels reduces the height of mangrove tree and there is severe effect of the high grazing pressure by camels on tree growth. In addition, these dwarf trees were growing intensively at the landside forest edge and no regeneration was observed under the forest canopy of these trees. It is suggested that the camel grazing prevented the seedling growth on the landside edge of the forest.

### Keywords

*Avicennia marina*, forest structure, seedling bank, camel grazing, Egypt's Red Sea coast