

Environmental interaction and biodiversity of mangrove crabs in the Kadolkele mangrove

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Abstract

Mangrove ecosystems are considered as complex and extraordinary ecosystems. The mangrove ecosystem is composed of flowering halophytic shrubs and trees and living creatures that maintain their connection with the flora. The interaction between these two components results the function of an ecosystem. Even though there is a certain amount of mangroves in Sri Lanka, studies on environmental interaction and biodiversity of mangrove crabs are almost rare.

Therefore, the objective of the present study is to investigate the biodiversity and environmental interaction of mangrove crabs in the Kadolkele mangrove. The research was conducted at Kadolkele, which is located adjacent to the Negombo lagoon in the west coast of Sri Lanka. Data were collected from a part of Kadolkele mangrove using random transects. The data on crab diversity and abundance. Soil salinity, soil pH, soil carbon, soil moisture, soil temperature, ambient temperature and floral species of mangrove were collected.

The study succeeded in identifying six crab species in the study area of Kadolkele mangrove of which five were identified up to species level. The identified species were *Episesarma versicolor*, *Sesarma smithii*, *Sesarma guttatum*, *Metopograpsus thukuhar* and *Metopograpsus messor*. According to the literature this is the first record of *Metopograpsus thukuhar* in Sri Lanka. The distribution pattern of crabs varied significantly with the soil salinity and soil moisture content ($p = 0.05$). Each environmental factor showed different correlation to each species. *Metopograpsus thukuhar* and *Sesarma smithii* species were distributed throughout the mangrove while *Metopograpsus messor* and undefined species were occurred close to the mangrove water level. *Episesarma versicolor* and *Sesarma guttatum* species were mainly concentrated to land side. Seven species of mangrove flora were identified and clear zonation was observed. The identified species were *Avicennia marina*, *Bruguiera gymnorhiza*, *Aegiceras corniculatum*, *Lumnitzera racemosa*, *Acanthus ilicifolius*, *Sonneratia caseolaris* and *Rhizophora mucronata*.

Keywords: Eco-system, Crabs, Bio Diversity