

**ECOLOGY, DIVERSITY AND DISTRIBUTION OF FRESHWATER
CRABS (DECAPODA: PARATHELPHUSIDAE) IN KNUCKLES
AND NUWARA ELIYA REGION OF SRI LANKA**

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ABSTRACT

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The present study was carried out in seven habitat types; primary forests, secondary forests, tea plantations, cardamom plantations, grasslands, paddy fields and marshy areas in Knuckles and selected areas in Nuwara Eliya region.

A total of 18 freshwater crab species belonging to a single family (Parathelphusidae) and four genera (*Ceylonthelphusa*, *Perbrinckia*, *Mahatha* and *Oziothelphusa*) were recorded. Out of the 18 species, three species remain unidentified. All the recorded 18 species are endemic to the island. Genera *Ceylonthelphusa*, *Perbrinckia* and *Mahatha* are endemic to the island. Genus *Oziothelphusa* is not endemic. New locality data for eight freshwater crab species were recorded.

The results indicate that freshwater crabs have diversified into different ecological habitats with some morphological and behavioral adaptations. They occupy various freshwater and terrestrial habitats and show different degree of dependence on water and different pH preferences.

Most stream habitats sampled contain at least two species of freshwater crabs: one species in lowland and the other in higher altitudes. The altitudinal distribution of freshwater crabs in Knuckles and Nuwara Eliya region shows a unique pattern of sympatry within a narrow zone of 200 meters. Within this zone, lowland large bodied common species are found to be co-existing with common highland species.

Most freshwater crab species found within the study area show very restricted distribution while *C. rugosa* and *C. soror* show wide range of distribution within both study areas.

Diversity indices indicate that primary forests have the highest freshwater crab species diversity followed by secondary forests and tea plantations respectively in both Knuckles and Nuwara Eliya regions. In Knuckles region, grasslands, paddy fields and marshy areas show the lowest freshwater crab species diversity where as in Nuwara Eliya region grasslands had the lowest crab species diversity. The Shannon Evenness indicated that the grasslands, paddy fields and marshy areas showed the highest species evenness (1.0). The primary and secondary forests showed the highest similarity in terms of freshwater crab diversity followed by tea plantations.

The species richness was higher in Knuckles region. This may be due to the presence of different habitat types. Less species richness in Nuwara Eliya region can be attributed to the extreme climatic conditions and less diversity of habitat types.