Diversity of Mangrove Associated Brachyuran Fauna in Panama Lagoon, Eastern Coastal of Sri Lanka

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Mangroves are salt-tolerant plant communities that provide unique habitats for a wide range of faunal communities. Panama lagoon is pristine with rich mangrove coverage. The present study was carried out to investigate the diversity of mangrove associated brachyuran fauna in the Panama lagoon, on the East coast of Sri Lanka. Field sampling was conducted in six sampling sites, covering the entire lagoon from November 2019 to January 2020. In each site, three belt transects were laid perpendicular to the lagoon. The belt transects were 10 m to 30 m depending on the length of the mangrove patch. It was subdivided into 10 m×10 m plots and which had six 1 m×1 m randomly selected sampling units. The sampling area was dug into the water level until the crabs were caught and picked by hand. Several crabs from different species were recorded. Crabs were identified up to species level using external morphological characters. Salinity, temperature, and pH of mangrove soil were measured. Seven species of brachyuran crabs belonging to four families were identified up to the species level. They were *Parasesarma plicatum*, *Metopograpsus thukuhar*, *Metasesarma obesum*, *Episesarma mederi*, *Episesarma versicolor*, *Cardisoma armatum,* and *Varuna litterata*. The *Parasesarma plicatum* was recorded as the most dominant species due to it was recorded in whole sites of the lagoon. The lower and middle areas of the lagoon recorded 1.51 and 1.13 for the Shannon wiener indexes and no species found in the upper area of the lagoon. The distribution pattern of dominant species up to 10 m, 20 m, 30m level. The salinity showed a negative correlation ($p < 0.01$) with the increasing distance from the lagoon. The distribution of *Cardisoma armatum* showed a positive correlation ($p< 0.01$) with the soil salinity. Panama lagoon consists of rich brachyuran fauna diversity and it plays a virtual role in the ecological process and must be conserved for the future generation.

Keywords: Brachyuran crabs, Fauna, Mangrove, Panama lagoon, Shannon wiener indexes