Distribution and Diversity of Economically Important Bivalves and Shrimps in Rekawa Lagoon in Sri Lanka

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Abstract

The present study was undertaken to study distribution, diversity and correlation of bivalves and shrimps community in relation to environmental factors in Rekawa lagoon. Samples were randomly obtained from 19 selected sites in Rekawa lagoon and were separated by wet sieving method and identified up to family and genus level. In addition to that available mangrove species, sea grasses, soil texture, plankton diversity were recorded to investigate their correlation with bivalves and shrimp. Two types of benthic bivalves belonging to family Corbiculidae were identified up to the family level and they were most abundant in Parappuwa. *Macrobrachium* sp, and *Atya* sp. were recorded as shrimp species in the lagoon. In addition to that *Pseudocalanus elongates*, *Calanus* sp. and *Naviculas*p., were identified as planktons. Mean pH, ambient temperature, salinity, dissolved oxygen, water temperature and depth values of the lagoon were respectively 7.5, 36.3 C^0, 21ppt, 11.2mg/L, 31.6 C^0, and 70.3cm. Sand, clay and muddy soil textures were identified. Sea grasses *Halophilaovalis, Hallophila, H. minor* and *Ruppia maritime* and mangroves such as *Aegicera scorniculatum, Avicennia marina, Avicennia officinalis, Bruguiera sexangula, Ceriopstagal, Excoecaria agallocha, Heritiera littoralis, Lumnitzera racemosa, Nypa fruticans, Rhizophora mucronata* and *Sonneratia caseolaris* were among the identified species. In this study a significant correlation ($p<0.05$) between sea grass *Halophila, H.ovalis*and both *Macrobrachium* Sp. and *Atya* Sp.,water temperature and distribution pattern of *Atya* species, salinity level and *Macrobrachium* Sp., Dissolved Oxygen and *Macrobrachium* Sp., and water depth and *Atya* Sp. were observed. Shrimp fishery was observed as the main economic activity while *Penaeus indicus*, *Penaeus monodon*, *Penaeus semisalcatus*, *Macrobrachium rosenbergii* were recorded in the lagoon and off shore catch. Though diversity of bivalves is very low in Rekawa lagoon, diversity and availability of shrimp is very high due to government shrimp stocking programs and favorable water quality parameters.

Keywords: Bivalves, Mangroves, Planktons, Rekawa lagoon, Shrimp

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