Ecological Footprints for Aquaculture Possibility in Selected Mangrove Regions

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Abstract

The present study was carried out to analyze the possibility of aquaculture in selected mangrove regions in Jaffna, Sri Lanka. A detailed study on the possibility of aquaculture was carried out in Sarasaalai (L1) and Kapputhu (L2) mangrove regions. Relevant water quality parameters were measured, organic matter was estimated and available fish species were collected and identified during the study period. Samples were collected in the second week of each month fromJune2016 to November 2016. Water quality parameters such as water temperature, salinity, pH, dissolved oxygen, water depth and turbidity were measured. Organic matter in the collected soil samples were estimated. Water quality parameters were analyzed by two sample t-test using minitab13.Identification of all the collected fish species were confirmed according to the standard literature by observing their morphological and meristic characters. Statistical analysis did not show a significant difference ($p > 0.05$) between Sarasaalai and Kapputhu in water temperature, salinity, dissolved oxygen, pH and water depth though a significant difference ($p < 0.05$) was observed for turbidity. High percentage of organic matter was observed in Sarasaalai. The identified fish species in both locations were *Chanos chanos, Platycephalus fuscus*, *Oreochromis mossambicus*, Nematalosa nasus, *Hyporhamphus limbatus, Hemiramphus marginatus, Etroplus maculates, Gerres abbreviatuis and Gerres oyena*. The most abundant species in Sarasaalai was *O. mossambicus* and in Kapputhu were *O. mossambicus, C. chanos, G. abbreviatus* and *G. oyena*. It can be concluded that a few of the economically valued and non-invasive species can be cultured in the said regions however after a detailed study.

Keywords - Aquaculture, C. chanos, G. abbreviatus, Mangrove, O. mossambicus