

## **Sustainable Mangrove Environment and Biodiversity of Gastropods and Crabs: A Case Study on the Effect of Mangrove Replantation under Ecotourism and Restoration in Ko Libong, Trang, Thailand**

**Authors :** Wah Wah Min

**Abstract :** The relative abundance and diversities of gastropods and crabs were assessed for mangrove areas of Ko Libong, Kantang district, Trang, Thailand in June 2022. Two sample sites (I and II) were studied. The site I was replanted under ecotourism, whereas site II represented the protected natural restored mangroves. This study is aimed to assess faunal diversity and how it could become re-established and resemble to natural restored mangroves. There was one sample plot at each study site with the dimension (10m x 25m) in study site I and (20m x 30m) in site II. The sample was randomly taken from each plot by using a quadrat measuring at (1 m<sup>2</sup>) in site I and (3m<sup>2</sup>) in site II; there were four quadrates in total of each site. The species richness (S), Shannon Index (H') and Evenness Index (J'), vegetative measurements and physico-chemical parameters were calculated for each site. Seventeen gastropod species belonged to 11 families and six crab species under two families, which were collected in both study sites. Overall, in gastropod species, the highest relative abundance of *Nerita planospira* exhibited (53.45%, category C) with lower population density (1.61 individuals/m<sup>2</sup>), which was observed in study site II and for crab species, *Parasesarma plicatum* (83.33%, category C) with lower population density (0.33 individuals/m<sup>2</sup>). The diversity indices of gastropod species at the study site I was calculated higher indicating by (S= 12, H'= 2.27, J' and SDI=0.91) compared to study site II (S= 7, H'= 1.22, J' and SDI=0.63, 0.62). For the crabs, (S= 4, H'=1.33, J' and SDI=0.96, 0.9) in study site I and (S= 2, H'=0.64, J' and SDI=0.92, 0.67) in site II. Overall, the higher species diversity indices of study site I can be categorized "very equally" with a very good category according to evenness criteria (>0.81). This can be gained by increasing restoration sites through an ecotourism replanting program for achieving the goals of sustainable development for mangrove conservation and long-term studies are required to confirm this hypothesis.

**Keywords :** biodiversity, ecotourism, restoration, population

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