

**THE COMPARATIVE STUDY ON THE EFFECT OF SOIL
ORGANIC MATTER, SOIL PH AND AMMONIA TO THE
DISTRIBUTION AND ABUNDANCE OF MUDSKIPPERS
BETWEEN TWO MANGROVE ZONES**

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ABSTRACT

THE COMPARATIVE STUDY ON THE EFFECT OF SOIL ORGANIC MATTER, SOIL PH AND AMMONIA TO THE DISTRIBUTION AND ABUNDANCE OF MUDSKIPPERS BETWEEN TWO MANGROVE ZONES

Mangroves are a tidal habitat that comprises trees and shrubs. Mudskippers are an amphibious fish that can live in both water and land. This study was done to assess the distribution and abundance of mudskippers between two mangrove zones based on the soil organic matter, soil pH and Ammonia. This study was conducted for three months from August until October 2019 by using line transect and quadrat sampling method. SOM was assessed by using Loss on Ignition (LOI) method. Soil pH and Ammonia concentration were analysed *in situ* by using portable soil pH meter and Ammonia (NH₃/NH₄⁺) test kit, respectively. A total of 27 mudskippers were obtained from both mangrove zones. The mudskipper species found in this study are *Periophthalmus argentilineatus* and *Periophthalmus malaccensis*. The distribution pattern for mudskippers in both mangrove zones were categorized as group as it tends to be uniform. There was no difference in the distribution and abundance of mudskippers between the two mangrove zones ($p = 0.859$) perhaps due to the availability of habitat in both zones that was not influenced by the tides and the mechanism of habitat selection. Soil organic matter, soil pH and Ammonia concentration were higher in *Rhizophora apiculata* zone ($p < 0.001$) perhaps due to less tidal inundation and flushing, duration of tidal flooding and the density of the mangroves. Mudskippers were not affected by SOM, soil pH and Ammonia concentration ($p > 0.05$). There was no difference in the distribution and abundance of mudskippers in both mangrove zones and SOM, soil pH and Ammonia concentration have no effect to the distribution and abundance of mudskippers. As recommendations, future study should be done by studying other factors such as temperature or relative wet area to see how these factors affect the distribution and abundance of mudskippers in the mangroves.