5th. Global Conference on Agriculture

Berlin, Germany 13 - 15 March 2025

# Assessing Benthic Community in Nypa Palm Invaded Mangrove Forest in Asarama Andoni Local Government Area of Rivers State

***Komi, G.W., Asuk, F.C. and Hart, A.I.**

*Department of Animal and Environmental Biology, Faculty of Science, University of Port Harcourt, PMB 5323 Choba, East-West Road, Rivers State Nigeria*

## Abstract

Mangrove and nypa palm forests are abundant in the Niger Delta, the latter being invasive had competed aggressively with the former and altering benthic community structure. This study determined the diversity and abundance of benthic community from August to November, 2023 in nypa palm invaded mangrove forest. Sediment samples were taken from the two sites, a mangrove forest and a nypa palm forest along the Andoni River using an Eckman grab and then transferred in well labelled containers to the laboratory. Laboratory analysis was done using standard procedures. Data was subjected to SPSS, ANOVA, Shannon Weiner, Pielou and Margalef analyses. Results showed that a total of 640 organisms were extracted from four taxonomic groups, 5 classes and 16 species in the study area. Mangrove forest recorded a higher diversity index (1.716) than Nypa palm forest (1.56), but the mangrove forest recorded a relatively lower species evenness (0.634) than the Nypa palm forest (0.679). Species richness showed that benthos in the mangrove had a higher richness than those in the Nypa palm. Results of water physico-chemical parameters revealed that the mangrove forest (28.68±0.67°C) recorded a lower temperature than the Nypa palm (29.06±0.63°C) ($p>0.05$); pH in the mangrove (8.86±1.15) was lower than in the Nypa palm ($p>0.05$). Total dissolved solid was higher in the mangrove (2327.25±1952.20 mg/l) than in the Nypa palm (2021.67±1697.08mg/l) ($p>0.05$). Mean salinity value was higher in mangrove (0.72±0.17) than in the Nypa palm (0.70±0.16) ($p>0.05$). The mean DO values were higher in the mangrove (4.95±0.62mg/l) than in the Nypa palm (4.20±0.76) ($p>0.05$). This study revealed that nypa palm has an adverse effect on the abundance, richness and evenness of benthic organisms in the study area. Longer period of study of the ecosystem is required.

**Keywords:** Benthic community, nypa palm, mangrove forest, species diversity and abundance