

## **Utilization of dual stable isotopes to determine trophic structure in a mangrove - intertidal Mudflat of Johor Strait, Malaysia**

### **ABSTRACT**

The coastal environment of the Johor Strait is gradually being altered, thus degrading the ecosystem's health. The present study was conducted to determine the food web in mangrove-mudflat ecosystem in vicinity to Sungai Pulai estuary as revealed by stable isotope analysis. A wide range of biota and sediments were collected and analyzed for  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  isotopic ratios. Results showed  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values were ranged between -14‰ to -31‰ and 2.5‰ to 17.5‰, respectively. These data revealed that there are four trophic levels (primary producers up to tertiary consumers) that exist within the mangrove-mudflat ecosystem. Hence, a stable isotope analysis could be used to verify trophic structure in tropical mangrove ecosystem.

**Keyword:** Mangrove; Intertidal mudflat; Food web; Trophic level; Stable isotope