

# Macrobenthic community at nesting grounds of horseshoe crabs (*Tachypleus gigas* and *Carcinoscorpius rotundicauda*) at Pahang coast, Malaysia.

\*Akbar John, B., Sihin, S., Jalal, K.C.A., Kamaruzzaman, B.Y.

Institute of Oceanography and Maritime Studies, Kulliyah of Science,  
International Islamic University Malaysia, Bandar Indera Mahkota,  
25200 Kuantan, Pahang, Malaysia.

Presenter : Akbar John

ID: LSP-35

## INTRODUCTION

1. **Macrobenthos** consists of the organisms that live at the bottom of the water column and are visible to the naked eye (usually >0.5mm in size)
2. About 80% of the benthic organisms are Epifauna that are living on or are attached to the surface of rocky areas or firm sediments play an important role in ecosystem processes such as nutrient cycling, pollutant metabolism, dispersion and burial, and in secondary production
3. Macro invertebrate species offers a spectrum of responses to environmental stresses and a broad range of responses to different pollutants
4. The food preferences of horseshoe crabs are well studied from the wild environment while the similar studies are still scanty along their nesting grounds



Major groups of Macrobenthos

## RESULTS

Table 1: Macrobenthic diversity along the sampling stations at full and New moon days

Diversity Indices	Balok		Pekan	
	Full moon	New moon	Full moon	New moon
Shannon H' Log Base 10.	0.998	1.03	1.019	1.026
Shannon J'	0.925	0.954	0.944	0.951
Simpsons Diversity (D)	0.111	0.101	0.105	0.104
Simpsons Diversity (1/D)	9.009	9.901	9.524	9.615
Margaleff M Base 10.	2.756	2.881	2.992	3.066
Mackintosh Diversity (D)	1.01	1.012	1.015	1.016
Berger-Parker Dominance (d)	0.136	0.139	0.155	0.157
Berger-Parker Dominance (1/d)	7.33	7.169	6.47	6.384

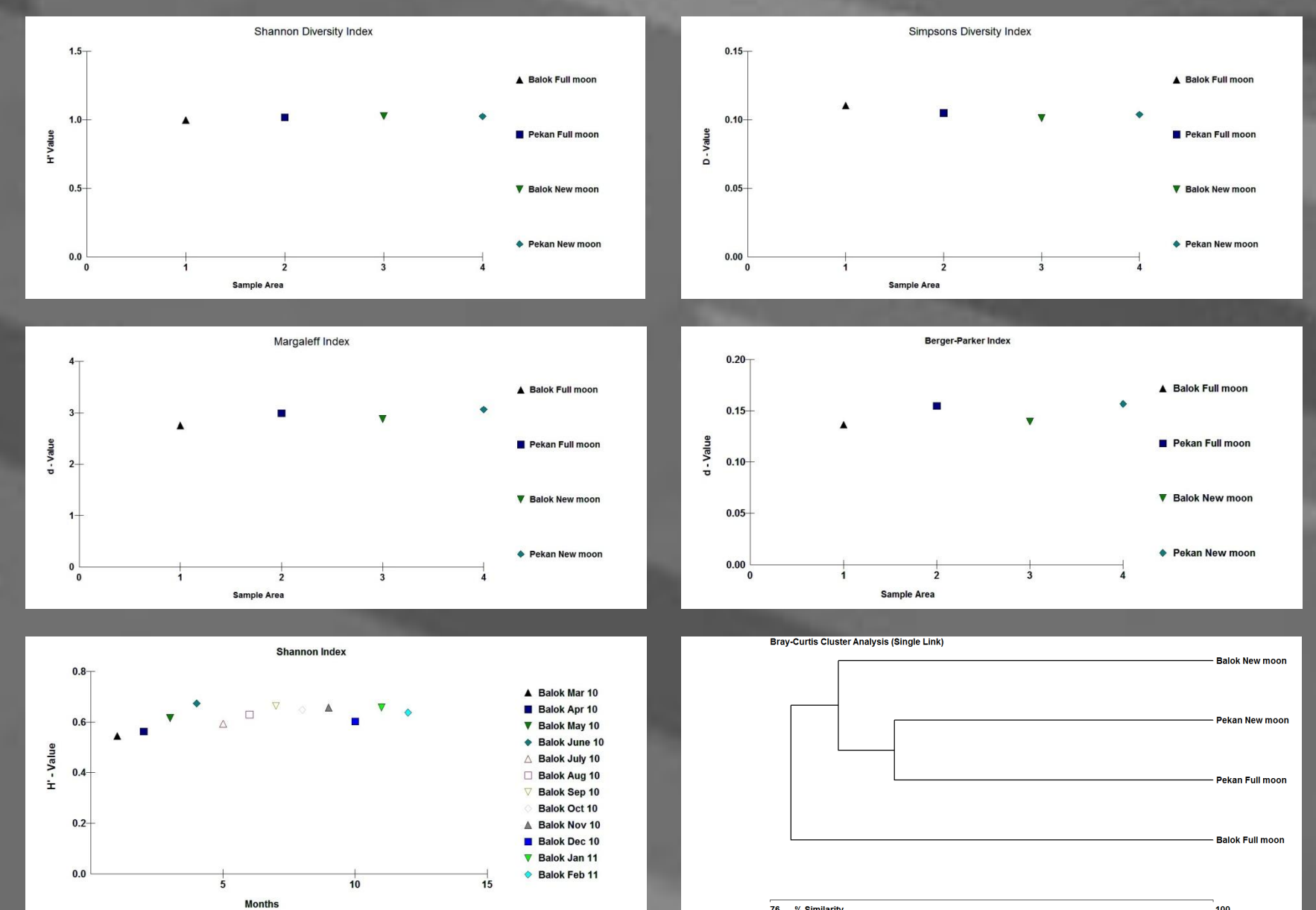


Fig 1: Graphical representation of different diversity indices

Table 2: percentage of species similarity between sampling area

	Balok Full moon	Pekan Full moon	Balok New moon	Pekan New moon
Balok Full moon	*	65.3457	77.1345	56.3017
Pekan Full moon	*	*	79.7036	82.7338
Balok New moon	*	*	*	73.9983
Pekan New moon	*	*	*	*

## Discussion

1. The influence of lunar cycle on the diversity of macrobenthic assemblages at 2 sampling stations showed that diversity was higher during new moon (NM) days at Balok station ( $H' = 1.03$ ; Simpson  $1/D = 9.901$ ) followed by Pekan station ( $H' = 1.026$ ; Simpson  $1/D = 9.615$ ). Lowest diversity was observed during full moon (FM) days at Balok ( $H' = 1.019$ ; Simpson  $1/D = 9.524$ ) followed by Pekan ( $H' = 0.998$ ; Simpson  $1/D = 9.009$ ) station.
2. There was no much fluctuation in diversity of macrobenthos observed during monsoon and Non-monsoonal periods in both the sampling sites.
3. Shannon diversity value ( $\leq 1$ ) proved the degradation of habitat structure in both Balok and Pekan.

