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**A STUDY ON SPECIES AND ABUNDANCE OF MACROBENTHOS WITHIN  
MANGROVES VEGETATION ZONES IN PENKALAN GELAP, SETIU**

**By**

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**Research Report submitted in partial fulfillment of  
The requirements for the degree of  
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FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN  
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**PENGAKUAN DAN PENGESAHAN  
LAPORAN PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk

**A Study on Species and Abundance of Macrobenthos within Mangrove Vegetation**

**Zones in Pengkalan Gelap, Setiu** oleh **Nor Azmaliza Salleh**, no matrik **UK10202** telah


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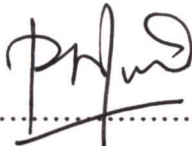
  
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## LIST OF ABBREVIATION AND SYMBOLS

$\mu\text{m}$	Micrometer
mm	millimeter
$\text{m}^2$	Meter Square
$\text{mgL}^{-1}$	Milligram per liter
$^{\circ}\text{C}$	Degree Celcius
%	Percentage
$\Sigma$	Total
ln	Natural Logarithm
Sp.	Species
Ppt	Parts per Thousand
DO	Dissolve oxygen
$H'$	Shannon Weiner Index
$E'$	Evenness Index
$R'$	Margalef's Index

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## ABSTRACT

Study on distribution of macrobenthos had been done in mangrove forest at Pengkalan Gelap, Setiu. This study was associated with the project of Petra- UNDP mangrove regeneration community project which supported by the Terengganu State Government and UMT. The main objective of this study was to estimate diversity and distribution of macrobenthos in Pengkalan Gelap, Setiu. Sediment characteristics and environmental factors were the most important factors directly affecting the diversity and density of macrobenthos. There were eight species of macrobenthos that regularly found in Pengkalan Gelap; polychaeta, Olygochaeta, Bivalvia, Gastropoda, Echinodermata, Polyplacophora, Crustacea and others. Highest diversity for macrobenthos was found in station 4 transect 1 ( $H'=0.9268$ ) with the evenness  $E'$  value of 0.4763 and Margalef's richness value of 1.6053 while the lowest diversity index for macrobenthos in Pengkalan Gelap, Setiu were found at station 5 with the average ( $H'=0.504$ ), evenness  $E'$  value of 0.259 and Margalef's richness value of 2.6309. Gastropoda was resulted as the dominant species from phylum mollusca in the study area. Results show that the texture of sediments was coarse sand. These indicated that there was a correlation between total and type of macrobenthos with the size of sediment in the mangrove of Pengkalan Gelap, Setiu.

## ABSTRAK

Kajian terhadap taburan makrobentos telah dijalankan di kawasan Hutan Paya Laut Pengkalan Gelap, Setiu. Kajian ini adalah seiringan dengan Projek Kemasyarakatan Pemuliharaan Paya Laut Petra- UNDP dengan kerjasama Kerajaan Negeri Terengganu dan UMT . Tujuan utama kajian adalah untuk mengkaji taburan makrobentos di Pengkalan Gelap, Setiu. Bentuk saiz endapan dan parameter persekitaran merupakan faktor terpenting yang mempengaruhi densiti dan kepelbagaian makrobentos. Terdapat lapan taksa makrobentos yang sering dijumpai di Pengkalan Gelap iaitu polychaeta, Olygochaeta, Bivalvia, Gastropoda, Echinodermata, Polyplacophora, Crustacea serta beberapa spesis lain. Indeks kepelbagaian Spesis yang paling tinggi adalah ( $H'=0.9268$ ) adalah di Stesen 4 dengan nilai indeks keserataan  $E'=0.4763$  dan nilai indeks kekayaan  $R'=1.6053$  manakala indeks kepelbagaian yang paling rendah adalah ( $H'=0.504$ ) di Stesen 5 dengan nilai indeks keserataan  $E'=0.259$  dan nilai indeks kekayaan  $R'=2.6309$  Gastropoda daripada Phylum Moluska menunjukkan spesis yang paling dominan di kawasan kajian. Kajian ini juga menunjukkan bahawa terdapat korelasi antara kelimpahan dan jenis makrobentos dengan saiz endapan di Hutan Paya Laut Pengkalan Gelap, Setiu.