

**EFFECT OF CORAL COVER AND SUBSTRATE ON GROUPERS  
DENSITY AND DIVERSITY AT PULAU BIDONG**

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**EFFECT OF CORAL COVER AND SUBSTRATE ON GROUPERS DENSITY  
AND DIVERSITY AT PULAU BIDONG**

**By**

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the requirements for the degree of  
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**JABATAN SAINS MARIN  
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:

Effect of Coral Cover and Substrate on Goupers Density and Diversity at Pulau Bidong  
oleh Anita Sude, No.Matrik UK 12761 telah diperiksa dan semua pembedaan yang  
disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin  
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## LIST OF ABBREVIATIONS

LIT	Line Intercept Transect
m	metre
S.I	Surface Index
m <sup>2</sup>	metre square

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## ABSTRACT

This study was conducted to see the effect of coral cover and substrate complexity on groupers density and diversity at Bidong Island. The data was collected from nine stations during two sampling sessions, in September 2007 and January 2008. All the data collections were conducted by direct observation using SCUBA diving. Fish abundance was collected using fish belt transect and benthic coverage data was taken by Line Intercept Transect (LIT) method. The structural complexity of the reef substrates was determined by using Dahl method. One hundred and seventy three individuals from six species of groupers were obtained which were *Cephalopolis boenak*, *C. microprion*, *C. cyanostigma*, *C. argus*, *C. formosa* and *Epinephelus fasciatus*. *C. boenak* was the most abundant species encountered throughout this study, whereas *C. formosa* was the least abundant species. The density of groupers in Bidong waters was 0.038 individual per m<sup>2</sup>. The study showed that structural complexity of the reef substrates has no significant correlation ( $P < 0.05$ ) with abundance and diversity of groupers.

## ABSTRAK

Kajian ini dijalankan untuk melihat kesan litupan karang dan kekompleksan struktur substrat ke atas kepadatan dan kepelbagaian ikan kerapu di Pulau Bidong. Data dikumpulkan daripada sembilan stesen semasa dua kali sesi penyampelan yang telah diadakan pada September 2007 and January 2008. Semua data dikumpul dengan kaedah pemerhatian secara langsung dengan menggunakan selam SCUBA. Taburan ikan kerapu diambil dengan menggunakan kaedah 'fish belt transect' dan kekompleksan struktur substrat ditentukan dengan menggunakan kaedah Dahl. Sebanyak seratus tujuh puluh tiga individu daripada enam spesies ikan kerapu telah diperolehi. Spesies-spesies yang diperolehi adalah *Cephalopolis boenak*, *C. microprion*, *C. cyanostigma*, *C. argus*, *C. formosa* and *Epinephelus fasciatus*. *C. boenak* adalah spesies yang mempunyai kelimpahan yang paling tinggi sepanjang kajian ini dijalankan. Kepadatan ikan kerapu di perairan Bidong adalah 0.038 individu per m<sup>2</sup>. Kajian ini telah mendapati bahawa kekompleksan struktur substrat tidak berkorelasi secara bererti ( $P < 0.05$ ) dengan kelimpahan dan kepelbagaian ikan kerapu..