A STUDY OF SPATIAL AND TEMPORAL VARIATON OF GROUPERS (FAMILY SERRANIDAE) AT PULAU BIDONG

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A STUDY OF SPATIAL AND TEMPORAL VARIATON OF GROUPERS (FAMILY SERRANIDAE) AT PULAU BIDONG

By

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Research Report submitted in partial fulfillment of the requirements for the degree of Bachelor of Science (Marine Biology)

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

A Study of Spatial and Temporal Variation of Groupers (Family Serranidae) at Pulau Bidong oleh **Natra Binti Marzuki**, No.Matrik **UK 12328** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Marin sebagai memenuhi sebahagian daripada keperluan memperolehi **Ijazah Sarjana Muda Sains (Biologi Marin)**, Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

LIT	-	Line intercept transect
S.I	-	Surface index
m	-	Metre
%	-	Percentage
N	-	North
E	-	East
o	-	Degree
'	-	Minute
"	-	Second

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ABSTRACT

The study was conducted at Pulau Bidong, Terengganu, which was one of the unprotected coral areas in the east coast of peninsular Malaysia. The study sites were focused at the areas in front of the island, where three transect lines were set up at different depths. Six sets of temporal variations were used for this study to see the effect of time and grouper abundances. Line intercept transect and fish belt transect were the two main methods used in this study. Four groupers species, from two genuses, were observed during the study period. The species observed were *Cephalopholis boenak*, *Cephalopholis cyanostigma*, *Cephalopholis microprion* and *Epinephelus fasciatus*. *C. boenak* and *C. cyanostigma* were the most dominant species and they were found at all sites but were highest at middle and slope areas, and *E. fasciatus* was the least abundant species observed. In this study, significant difference was observed for number of individual groupers and sites ($P<0.05$), with an exception for *E. fasciatus*, but there was no significant difference ($P>0.05$) for the number of groupers and time for temporal variation study. Based on the Pearson correlation coefficient analysis, the mean number of groupers (ind./500m^2) for each site was not significantly correlated to the coral complexity ($P>0.05$). This analysis indicated that the coral complexity did not give any effect to the number of groupers at Pulau Bidong.

Kajian Terhadap Variasi Ruang Dan Masa Ke Atas Ikan Kerapu

(Famili Serranidae) di Pulau Bidong

ABSTRAK

Kajian ini dijalankan di Pulau Bidong, Terengganu, yang mana merupakan salah satu kawasan terumbu karang yang tidak dilindungi di pantai timur semenanjung Malaysia. Tempat kajian adalah tertumpu di kawasan hadapan pulau, di mana tiga "transect line" diletakkan di kedalaman yang berbeza. Enam set variasi masa digunakan untuk kajian ini bagi melihat kesan masa dan kelimpahan ikan kerapu. "Line intercept transect" dan "fish belt transect" adalah merupakan dua kaedah utama yang digunakan dalam kajian ini. Empat spesies ikan kerapu daripada dua genus dilihat dalam tempoh kajian dijalankan. Spesies tersebut adalah *Cephalopholis boenak*, *Cephalopholis cyanostigma*, *Cephalopholis microprion* dan *Epinephelus fasciatus*. *C. boenak* dan *C. cyanostigma* adalah merupakan spesies dominan dan dijumpai di kesemua kawasan kajian, tetapi tertinggi di kawasan "middle" dan "slope", dan *E. fasciatus* merupakan kelimpahan ikan kerapu terendah. Dalam kajian ini, perbezaan secara bererti ($P<0.05$) dilihat untuk bilangan individu ikan kerapu dan tempat kajian, kecuali bagi *E. fasciatus*, dan tiada perbezaan secara bererti ($P>0.05$) untuk bilangan ikan kerapu serta masa bagi kajian variasi masa. Berdasarkan analisis korelasi berpangkat Pearson, didapati bahawa kekompleksan terumbu karang tidak berkorelasi secara bererti ($P>0.05$) dengan purata ikan kerapu (ind./500m^2) untuk setiap tempat kajian. Ini menunjukkan bahawa kekompleksan terumbu karang tidak mempengaruhi bilangan ikan kerapu di Pulau Bidong.