

DISTRIBUTION AND FEEDING HABIT OF SEA CUCUMBER
AT BIDONG ISLAND, TERENGGANU

SITI NORKAMALIA BINTI KHALIL

FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

2011

**DISTRIBUTION AND FEEDING HABIT OF SEA CUCUMBER AT BIDONG
ISLAND, TERENGGANU**

By

Siti Norkamalia Binti Khalil

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

**Department of Marine Science
Faculty of Maritime Studies and Marine Science
UNIVERSITI MALAYSIA TERENGGANU
2011**



DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:

Study of Distribution and Feeding Habit of Sea Cucumber at Bidong Island, Terengganu by **Siti Norkamalia Binti Khalil** Matric No. **UK17323** have been examined and all errors identified have been corrected. This report submitted to the Department of Marine Science and as a partial fulfillment toward obtaining the Degree of Marine Biology, Faculty of Maritime Study and Marine Science, University Malaysia Terengganu, Terengganu, Malaysia.

Verified by: 

Principal Supervisor

Name: Prof Madya Dr. Mohamed Kamil bin Abdul Rashid

Official stamp: 

Date: 24.4.2011

Second Supervisor

Name:

Official stamp:

Date:.....



Head of Department of Marine Science

Name: Dr. Razak bin Zakariya

Official stamp:

Date: 29/4/11

DR. RAZAK ZAKARIYA
 Ketua Jabatan Sains Marin
 Fakulti Pengajian Maritim dan Sains Marin
 Universiti Malaysia Terengganu
 (UMT)



**DEPARTMENT OF MARINE SCIENCE
 FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
 UNIVERSITI MALAYSIA TERENGGANU**

**PROPOSAL CONFIRMATION AND APPROVAL FORM
 RESEARCH PROJECT I AND II**

Student's Name: Siti Norkamalia Binti Khalil.

Program: Ijazah Sarjana Muda Sains (Biologi Marin) Matric No.: UK 17323

Principal Supervisor: Prof. Madya Dr. Mohamed Kamil Abdul Rashid.

Second Supervisor (if applicable):

Research Project Title : Distribution and feeding habit of Sea cucumber at Bidong Island, Terengganu.

With this, it is declared that *I/We (Supervisor) have read, corrected and approved the project proposal of the student mentioned above. This Project is suitable for a final year research project and can be conducted in the Faculty of Maritime Studies and Marine Science, within the specified duration.

Signature:
 (Principal supervisor)

.....
 (Second supervisor) if applicable

Name :

Date:

.....

Official stamp:

ACKNOWLEDGEMENT

IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

Bless be to Allah (S.W.T), the Almighty who had created me and then gave me such opportunity to conduct a research and to complete its thesis as my bachelor.

Zillion thanks to main supervisor, **Prof. Madya Dr. Mohamed Kamil Abdul Rashid**, that gave me the chance to run this project and for the advices, guidance, help, support and support, and comments throughout the project and who patiently supervised all his students; and the coordinator, Dr. Antonina for her full commitment in ensuring each student to complete their undergraduate projects.

Special thank to UMT Student Coucil's Vice Chancellor for the usage of Bidong Research Station, boats, and trucks, Mr. Azman, team of Mr. Imran, Mr. Sainol, Mr. Mahazan and Ms. Kartini for their commmitment in diving equipments, logistic, sampling materials and tools, guidance, help and all staffs directly and indirectly involved towards the completion of this project and thesis.

Appreciation to all my beloved friends, dive buddies, laboratory group, and last not be leas, my understanding and sporting family for everything youhave contributed, big or small, spirit and encouragement, deep from the bottom of my heart – Thank you.

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LIST OF ABBREVIATIONS

UMT	Universiti Malaysia Terengganu
m	Meter
N	North
E	East
cm	Centimeter
%	Percentage
ANOVA	Analysis on variance
SPSS	Statistical Package for the Social Sciences
T1	Transect 1
T2	Transect 2
T3	Transect 3
H'	Shannon-Wiener diversity index
J'	Evenness index
a.m	<i>ante meridian</i> (before noon)
p.m	<i>post meridian</i> (after noon)
P	significant value
°C	Degree Celsius
‰	Parts per thousand

ABSTRACT

A total of 4 sea cucumber species were observed and identified along the period of study in Pulau Bidong. Of these, two species belonged to Family Holothuridae and two to Family Stichopodidae. The highest sea cucumber diversity was observed in transect 3, that outer slope and sandy area. *Holothuria atra*, *Holothuria edulis*, *Stichopus variegatus* and *Stichopus chloronotus* were found in the area but these species were not very frequent in catches. Sea cucumbers were harvested by fishers through diving and hand picking. Family Holothuriidae had the highest diversity overall with two species followed by Family Stichopodidae had two species. The study of species diversity and abundance revealed that Family Holothuriidae dominated observed transects with 82% of the total number of individuals. Family Holothuriidae observed transect with 50 % of the total number of species. This study shows that not only morphology and coral structure played in important role in sea cucumber biodiversity, but also the adjacent area of dead coral, sand, rocks and boulders. The outcome of this study shows that Shanon-Wiener diversity index was not suitable comparing sea cucumber biodiversity due to certain species or family dominated study area in Pulau Bidong. The index was influenced by rarer species and not sensitive to the abundance of common species.

ABSTRAK

Sebanyak 4 spesis gamat (timun laut) telah dijumpai dan dikenal pasti sepanjang kajian yang dijalankan di Pulau Bidong. Daripada jumlah spesis gamat yang didapati, 2 spesis adalah Famili Holothuridae dan 2 spesis lagi adalah Famili Stichopodidae. Bilangan gamat yang dijumpai palig tinggi adalah pada transet 3, iaitu di kawasan berpasir ataupun di lantai laut. *Holothuria atra*, *Holothuria edulis*, *Stichopus variegatus* dan *Stichopus chloronotus* telah dijumpai dikawasan itu iaitu di lantai laut Pulau Bidong tetapi jenis spesis ini jarang ditangkap. Gamat (timun laut) ini diperolehi semasa menyelam dengan mengambil menggunakan tangan. Famili Holothuridae adalah bilangan tertinggi berbanding Famili Stichopodidae. Semasa kajian dijalankan, diperhatikan Famili Holothuridae mempunyai 82% daripada jumlah individual keseluruhan kajian. Tambahan pula, Famili Holothuridae diperhatikan mempunyai 50% daripada jumlah spesis yang dijumpai. Di dalam kajian ini, menunjukkan bukan sahaja morfologi dan keadaan terumbu karang memainkan peranan yang penting didalam menentukan biodiversiti gamat. Tetapi taburan gamat juga berdekatan di kawasan terumbu karang yang mati, pasir dan batuan. Hasil daripada kajian ini menunjukkan Shahnnon-Wiener indeks yang tidak sesuai digunakan untuk biodiversity dan taburan gamat kerana sesetengah spesis ataupun family gamat menguasai kawasan kajian di Pulau Bidong. Hal ini kerana, indeks telah dipengaruhi spesis dan kepadatan spesis yang biasa ditemui.