A STUDY ON DISTRIBUTION AND ABUNDANCE OF POLYCHAETA (PHYLUM ANNELIDA) IN THE SHALLOW SUBTIDAL ZONE OF KALONG BAY, KEMAMAN, TERENGGANU

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SCHOOL OF MARINE SCIENCE AND ENVIRONMENT
UNIVERSITI MALAYSIA TERENGGANU

2014

A study on distribution and abundance of polychaete (phylum annelida) in the shallow subtidal zone of Kalong Bay, kemamamn, Terengganu / by Noor Zalika Mohamad.

Lihat Sebelah

A STUDY ON DISTRIBUTION AND ABUNDANCE OF POLYCHAETA (PHYLUM ANNELIDA) IN THE SHALLOW SUBTIDAL ZONE OF KALONG BAY, KEMAMAN, TERENGGANU

By

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Research Report submitted in partial fulfillment of

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DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled A Study on Distribution and Abundance of Polychaeta (Phylum Annelida) in the Shallow Subtidal Zone of Kalong Bay, Kemaman, Terengganu by Noor Zalikha Binti Mohamad, Matric No. UK25518 have been examined and all errors identified have been corrected. This report is submitted to the School of Marine Science and Environment as partial fulfillment towards obtaining the Degree Bachelor Science of Mairne Biology, School of Marine Science and Environment, Universiti Malaysia Terengganu.

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indv/m^2	-	Individual per meter square (^{2})
mm	-	millimeters
%	-	Percent
µm	-	micrometer
m^2	-	meter square (^{2})
cm^2	-	centimeter square (^{2})
m	-	meter
mgC/g	-	milligram Carbon per gram
STD		Standard deviation
St	-	Station
TOC	-	Total Organic Carbon

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ABSTRACT

This study was conducted at Kalong Bay, Kemaman where there were 43 sampling stations. This study was conducted to determine the polychaete present and also determine the abundance and diversity of the polychaete. The most dominant species of polychaete was also determined. The samples were collected, identify and calculated for their abundance and diversity. Univariate and multivariate analysis were calculated, for example density (no. indv/m^2), Shannon-Wiener, evenness, Margalef index and Bray-Curtis by using PRIMER software. One-way ANOVA also was calculated using SPSS software. There are 11 order, 32 families and 110 species present. Station 40 has the highest density (1710. no. indv/m^2), might due to the sediment grain size and total organic carbon, TOC. Station 39 has lowest density because absent of polychaete. Order Phyllodocida has highest density (5360.00 no. indv/m^2). Order with lowest density is Opheliida (13.33 no. indv/m^2). Family with highest density is Scalibregmidae (3136.67 no. indv/m^2) and families with lowest density were Chrysopetalidae, Pontodoridae and Flabelligerida with density of 3.33 no. indv/m^2. Highest density of polychaete was *Scalibregma* sp. 1 with 1910.00 no. indv/m^2. There were about 26 species with lowest density of 3.33 no. indv/m^2. For the Shannon-Wiener index, highest index was at station 26 (2.938) and lowest index is at station 14 and 41 (0.231). For evenness index, station 9 has highest index value which is 0.967 and lowest at station 14 and 41 with index of 0.333. Most of the stations were evenly distributed. Highest index of Margalef was determined at station 26 with value of 3.716 and the lowest was determined at station 14 and 41 with value of 0.111.

Highest diversity of Shannon-Wiener and Margalef index is the same because of the high number of species in station 26. Diversity index with lowest value might be due to the anthropogenic pollution and industrial pollution.

Kajian Terhadap Taburan dan Bilangan Polychaeta (Filum Annelida) di Zon Subtidal Teluk Kalong, Kemaman

ABSTRAK

Kajian ini dijalankan di Teluk Kalong, Kemaman, Terengganu dimana terdapat 43 stesen penyampelan. Kajian ini dijalankan untuk menentukan cacing polychaeta wujud dan menentukan banyak dan kepelbagaian cacing polychaeta. Spesis polychaeta yang paling dominan juga ditentukan. Sample akan dikumpul, dikenal pasti dan juga di kira untuk mengenal pasti banyak dan kepelbagaian cacing polychaeta. Analisis univariate dan juga multivariate dikira, sebagai contoh kepadatan (no. indv/m^2), kepelbagaian indeks Shannon-Wiener, kesamaan indeks dan Margalef indeks dan juga Bray-Curtis dengan bantuan perisisan PRIMER. ANOVA sehala juga digunakan dan dikira mengunakan perisian SPSS. Kajian mendapati kewujudan 11 order, 32 keluarga dan 110 species. Stesen 40 mempunyai kepadatan cacing polychaeta iaitu 1710.00 no. indv/m^2, berkemungkinan kerana butiran saiz sedimen dan nilai keselurahan organic carbon, TOC. Stesen 39 mempunyai kepadatan cacing polychaeta yang paling rendah kerana tidak mempunyai langsung cacing polychaete. Order Phyllodocida mempunyai kepadatan yang paling tinggi dengan nilai 5360.00 no. indv/m^2. Order yang mempunyai kepadatan yang paling rendah sekali adalah Opheliida dengan nilai 13.33 no. indv/m^2. Keluarga yang mempunyai kepadatan yang paling tinggi adalah keluarga Scalibregmidae dengan nilai 3136.67 no. indv/m^2. Keluarga yang mempunyai kepadatan yang paling sedikit adalah keluarga Chrysopetalidae, Pontodoridae dan Flabelligerida dengan nilai 3.33 no. indv/m^2. Kepadatan polychaeta yang paling tinggi yang ditemui adalah *Scalibregma* sp. 1

dengan nilai 1910.00 no. indv/m^2. Kepadatan polychaeta paling sedikit mempunyai lebih kurang 26 spesis dengan nilai 3.33 no. ind/m^2. Bagi kepelbagaian indeks, stesen yang paling tinggi Shannon-Wiener indeks adalah stesen 26 dengan nilai indeks 2.938 dan stesen yang paling rendah indeks adalah stesen 14 dan juga 41 dengan nilai indeks 0.231. Kesamaan indeks pula menunjukan stesen 9 mempunyai nilai indeks yang paling tinggi dengan nilai 0.967 dan yang paling rendah adalah pada stesen 14 dan 41 dengan nilai 0.333. Kebanyakkan stesen menunjukkan agihan polychaeta adalah sama rata. Kepelbagaian indeks untuk Margalef pula menunjukan stesen 26 mempunyai nilai yang paling tinggi iaitu 3.716 dan stesen 14 dan 41 memiliki nilai indeks 0.111 yang mempunyai paling rendah. Nilai kepelbagaian indeks mungkin disebabkan oleh pencemaran antropogenik dan pencemaran industri.