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Lihat sebelah

A PRELIMINARY STUDY ON DISTRIBUTION OF RIPARIAN VEGETATIONS AT SUNGAI BARI, SETIU, TERENGGANU

By

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To all the people who shared their love and knowledge with me……

KUSTEM

JABATAN SAINS SAMUDERA
FAKULTI SAINS DAN TEKNOLOGI
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PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **A Preliminary Study of Distribution of Riparian Vegetations at Sungai Bari, Setiu, Terengganu** oleh **Haramaini Bt. Arifin, UK 8048** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains (Biologi Marin), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS / SYMBOLS

DBH	Diameter at Breast Height
PC-ORD	(Multivariate Analysis of Ecological Data)
DGPS	Digital Global Positioning System
km	kilometers
m	meter
%	percentage
^{o}C	degree celcius
S	Species richness
E	Species Evenness
H	Species diversity
Π	3.142
cm	centimeter

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ABSTRACT

The specific objectives were to determine of riparian species, to study the distribution of vegetation and to study the species richness, species evenness and species diversity. Sungai Bari was chosen as a study area which was located at Setiu, Terengganu. Transect Line Method was used to collect data while herbarium was used for plant identification. One plot was set up for each transects line at both side of the river. After built one transect, observation were done at each transect. The vegetation data were analyzed using univariate technique contained in the PC-ORD software package. The univariate data were species richness, species evenness and species diversity. Similarity matrices were constructed using the Cluster Analysis. The analysis were also using quantitative estimate of density of individuals, dominance, and frequency for describing the structure of riparian plant community. This vegetation results indicated that this river was mainly covered by riparian vegetation such as palmae, shrubs, climbers, fern and trees. Overall, total of 20 species belonging to 14 families were found and identified in the study. From the 14 total plots, only 6 plots were built while the other 8 plots were rejected. This area has no data and observation was only done. For species, *Acrosticum speciosum* was the species richness, 4.0, *Eugenia longoflora* was the species evenness, 1.0 and *Acrosticum speciosum* was the species diversity, 1.283. For plot, plot 8 showed the species richness and species diversity with 16 and 2.286 respectively. Species evenness was plot 1 with the value 1.0. From Cluster Analysis, there were 2 major groups of species and two sub groups. The vegetation data was calculated using the formula for describing the structure of plant communities. Density, dominance, frequency and important value can be determined for each species. Seedling of *Flagillaria indica* was

recorded as the highest density with 0.0332. For frequency, *Acrosticum speciosum* sapling was the highest with 0.666. Dominance value for *Melalueca leucadendron* with 21.2351 was the highest. Important value for *Melalueca leucadendron* was recorded as the highest with 57.3229. This area was mangrove ecosystem with several number of mangroves vegetation. The abundance of fern shows that this area still has salt water and there was transition zone between seawater and freshwater land or ecotone.

ABSTRAK

Objektif utama kajian ini adalah untuk menentukan spesies riparian. untuk mengkaji taburan spesies riparian dan untuk mengkaji 'species richness', 'species evenness' dan 'species diversity'. Sungai Bari dipilih sebagai kawasan kajian yang terletak di daerah Setiu, Terengganu. Transect Line Method digunakan untuk mengumpul data manakala herbarium digunakan untuk mengenalpasti spesies. Selepas satu transet dibuat, pemerhatian dijalankan pada setiap transet. Data dianalisis dengan menggunakan teknik 'univariate' dalam perisian PC-ORD. Data-data adalah 'species richness', 'species evenness' dan 'species diversity'. Matrik kesamaan diperolehi dengan menggunakan Analisis Cluster. Data analisis juga menggunakan penggangaran kuantitatif seperti density, dominant dan frekuensi untuk menjelaskan komuniti tumbuhan riparian. Keputusan menunjukan bahawa sungai ini mengandungi tumbuhan riparian seperti palma, pokok renek, pokok memanjat, fern dan pokok berkayu. Secara keseluruhannya, sebanyak 20 spesies daripada 14 family telah dikenalpasti dan dijumpai di kawasan kajian. Daripada jumlah 14 plot, sebanyak 6 plot telah dibuat manakala 8 plot terpaksa ditolak. Plot yang ditolak tidak mempunyai data dan hanya pemerhatian yang dapat dijalankan. Spesies *Acrosticum speciosum* adalah 'species richness', 4.0. '*Eugenia longoflora*' adalah 'species evenness', 1.0 dan '*Acrosticum speciosum*' adalah species diversity, 1.283. Untuk plot, plot 8 menunjukkan 'species richness' dan 'species diversity' dengan nilainya adalah masing-masing 16 and 2.286. 'Species evenness' adalah plot 1 dengan nilainya adalah 1.0. Daripada Analisis Cluster, jarak peratusan tertinggi adalah spesies berikut; *Melaleuca leucadendron*, anak benih *Melastoma malabathricum*. *Baringtonia racemosa*, and anak pokok *Acrosticum speciosum*. Jarak

peratusan terendah adalah *Melaleuca leucadendron*, anak benih *Melastoma malabathricum, Baringtonia racemosa*, anak pokok *Acrosticum speciosum,* anak pokok *Flagilaria indica*, *memecylon edule, Licuala spinosus*, *Calophyllum inophyllum,* dan *Eugenia grandis*. Data juga dihitung dengan menggunakan formula untuk menjelaskan mengenai struktur komuniti tumbuhan. Densiti, dominant, frekuensi dan nilai penting boleh ditentukan untuk setiap spesies. Anak pokok *Flagillaria indica* direkodkan sebagai nilai tertinggi dengan nilai 0332. Untuk frekuensi, anak pokok *Acrosticum speciosum* adalah nilai tertinggi iaitu 0.666. Nilai dominant untuk *Melalueca leucadendron* dengan 21.2351 adalah yang tertinggi manakala nilai penting *Melalueca leucadendron* direkodkan sebagai tertinggi dengan 57.3229. Kawasan sungai ini merupakan kawasan ekosistem paya laut yang mempunyai kejadiran pokok bakau dalam kuantiti yang sedikit. Kelimpahan pokok piai lasa dan dominasi oleh pokok gelam menunjukkan kawasan ini merupakan kawasan peralihan antara kawasan berpaya dan kawasan kering.