SEDIMENTOLOGY AND ACCRETION RATE OF PULAU BESAR MANGROVE SETIU TERENGGANU

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SEDIMENTOLOGY AND ACCRETION RATE OF PULAU BESAR MANGROVE, SETIU, TERENGGANU

By

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LIST OF ABBREVIATIONS / SYMBOLS

GPS	Global Positioning System
ha	Hectare
PSA	Particle size analysis
TR	Transect
ST	Station
y^{-1}	Per year
Ø	Phi
μm	Micron metre
^{o}N	North in degree
^{o}E	East in degree
$p>0.05$	No significant differences
$p<0.05$	Significant differences

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ABSTRACT

Mangroves are diverse ecosystem with utilizable natural resources, dynamic and worthy of protection but are little understood in terms of their physical abilities and characteristics. Surface sediment samples from 3 transects, of Pulau Besar were analyzed for sedimentology and accretion rate. In this study, the average of accretion rates was 0.1667 cm per month determined using perspex as base markers. The high sedimentation was probably caused by the geographical position of the study area, which was located close to the mouth of the estuary. Sedimentological characteristics of Pulau Besar were as follows: the mean sediment size in June ranged from 1.190Ø to 2.50Ø for TR 1, 1.72Ø to 2.64Ø for TR 2 and for TR 3 was 2.130Ø to 2.84Ø. However in November, the mean ranged from 0.0Ø to 2.36Ø for TR 1 while for TR 2 and TR 3 1.45Ø to 2.708Ø and 1.18Ø to 2.56Ø, respectively were recorded. The other sediment characteristics in June for TR 1, TR 2 and TR 3 were mostly poorly sorted (except TR 3; which was moderately sorted), very negatively skewed and extremely leptokurtic. However these characteristics types for three transects changed in November to moderately sorted (except TR 3 was moderately well sorted), very negatively skewness, extremely leptokurtic (except TR 1 was very leptokurtic). The variation in temporal and spatial accretion induced changes in the sediment characteristics of the mangrove surface.

KAJIAN CIRI-CIRI SEDIMEN PERMUKAAN DAN KADAR PEMENDAPAN KAWASAN HUTAN PAYA BAKAU DI PULAU BESAR, SETIU, TERENGGANU

ABSTRAK

Paya bakau mempunyai kepelbagaian ekosistem dengan sumber semulajadi yang boleh digunakan, bersifat dinamik dan memberi perlindungan namun hanya sedikit kajian mengenai ciri-ciri dan keupayaanya secara fizikal. Sample permukaan sediment dari 3 transek dari Pulau Besar telah dianalisa ciri-ciri sedimen dan kadar pemendapannya.. Daripada kajian ini, purata kadar pemendapan adalah 0.1667 cm per bulan dan telah ditentukan dengan menggunakan perpex sebagai penanda. Kadar sedimentasi yang tinggi didapati berkemungkinan disebabkan oleh kedudukan geografi kawasan kajian, yang berdekatan dengan mulut muara. Ciri-ciri sediment di Pulau Besar adalah seperti berikut: Purata size sediment bagi Jun berjulat dari 1.190Ø hingga 2.50Ø untuk TR 1, 1.72Ø hingga 2.64Ø untuk TR 2 dan TR 3 adalah 2.130Ø to 2.84Ø. Walau bagaimanapun bagi November nilai min adalah berjulat dari 0.0Ø hingga 2.36Ø untuk TR 1 serta untuk TR 2 dan TR 3 masing-masing adalah 1.45Ø hingga 2.708Ø dan 1.18Ø hingga 2.56Ø. Di antara ciri-ciri sediment yang lain bagi June untuk TR 1, TR 2 dan TR 3 adalah kebanyakannya adalah sisihan tidak sempurna (kecuali TR 3; di mana ianya adalah sisihan sederhana sempurna), kepencongan sangat negetif dan paling leptokurtik (kecuali TR1 yang sangat leptokurtik).Perbezaan masa dan tempat telah mendorong kepada perubahan ciri-ciri sediment di permukaan paya bakau.