# EFFECT OF MONSOON ON DISTRIBUTION OF TOTAL AND INORGANIC PHOSPHOROUS IN SEDIMENT OF SETIU LAGOON, SOUTH CHINA SEA

NOR ASYIKIN BTE RAZAK

FACULTY OF MARITIME STUDIES AND MARINE SCIENCE UNIVERSITI MALAYSIA TERENGGANU 2008

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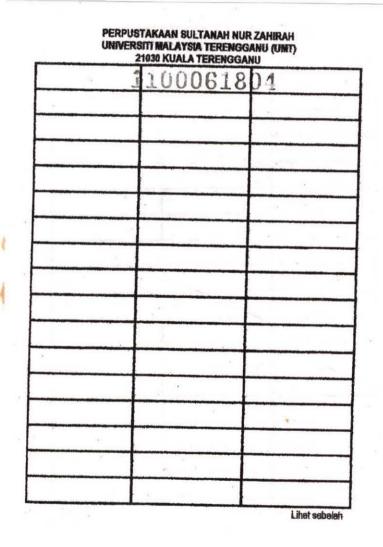
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HAK MILIK PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

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### PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Effect of Monsoon on Distribution of Total and Inorganic Phosphorous in Sediment of Setiu Lagoon, South China Sea oleh Nor Asyikin binti Razak, No.Matrik UK 11578 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 (Sains Samudera), Fakulti Pengajian Maritim dan Sains Marin, Universiti Malaysia Terengganu.

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## LIST OF ABBREVIATION

DIP	Dissolve Inorganic Phosphorous
DOP	Dissolve Organic Phosphorous
GPS	Global Positioning System
$H_2SO_4$	Hydrogen Sulphate
KH <sub>2</sub> PO <sub>4</sub>	Potassiun Dihydrogen Phosphate
М	Molarity
mL	mililitre
mg	miligram
Kg	kilogram
Ν	Normality
nm	nanometer
(NH <sub>4</sub> ) <sub>6</sub> Mo <sub>24</sub> .4H <sub>2</sub> O	Amonium paramolybdate
ppm	Part Per Million
ТР	Total Phosphorous

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### ABSTRAK

Kajian projek ini tertumpu kepada kesan monsun terhadap taburan jumlah fosforus dan fosforus tak organik di dalam sedimen di Setiu Lagun. Kajian sebanyak tiga kali telah dilakukan dari September hingga Disember, 2007. 14 stesen dipilih dan sampel sediment diambil di bahagian permukaan. Purata kepekatan jumlah fosforus untuk penyampelan pertama, kedua dan ketiga masing –masing adalah 3.263 + 3.255 mg/Kg, 17.168 + 2.689 mg/Kg and 3.830 + 1.008 mg/Kg. Manakala fosforus tak organik adalah  $1.376 \pm 1.247 \text{ mg/Kg}$  untuk penyampelan pertama,  $14.201 \pm 8.596 \text{ mg/Kg}$  penyampelan kedua dan penyampelan ketiga adalah  $1.881 \pm 1.844 \text{ mg/Kg}$ . Analisis statistik menyatakan terdapat nilai perbezaan ketara (P < 0.05) di antara masa penyempelan untuk jumlah fosforus (P = 0.000) dan fosforus tak organik (P = 0.000). Manakala tidak terdapat nilai perbezaan ketara (P > 0.05) di antara stesen penyampelan untuk jumlah fosforus (P = 0.070) dan fosforus tak organik (P = 0.125). Secara umumnya, jumlah taburan jumlah fosforus dan fosforus tak organik di dalam sedimen tinggi pada pre – monsun, diikuti ketika monsun Timur Laut dan monsun Barat Daya.

### ABSTRACT

This study focused on the monsoon effect on the distribution of the total and inorganic phosphorous in sediment at Setiu Lagoon. Sampling was done three times from September until December 2007. Fourteen sampling stations were chosen and the sediment collected was the surface sediment. The concentration of first, second and third sampling for total phosphorous were 3.263 + 3.255 mg/Kg, 17.168 + 2.689 mg/Kg and 3.830 + 1.008 mg/Kg respectively. Same goes to the inorganic concentration, that is 1.376 + 1.247 mg/Kg, 14.201 + 8.595 mg/Kg and 1.881 + 1.844 mg/Kg for first, second and third sampling period. The statistical analysis shows that, there are significant difference (P < 0.05) among the sampling period for total phosphorous (P = 0.000) and inorganic phosphorous (P = 0.000). Whereas there are no significant difference (P > 0.05) among the station for the total phosphorous (P = 0.070) and inorganic phosphorous (P = 0.125). Generally, the total and inorganic phosphorous is highest during the pre – monsoon, followed by North East monsoon and South West monsoon.