

DISTRIBUTION OF NITROGEN AND PHOSPHORUS IN SETIU LAGOON,
TERRANGGUNI, SOUTH CHINA SEA.

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DISTRIBUTION OF NITROGEN AND PHOSPHORUS IN SETIU LAGOON,
TERENGGANU, SOUTH CHINA SEA.

By

Chung Wun Nei

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

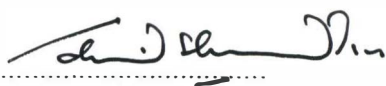
Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Distribution Of Nitrogen And Phosphorus In Setiu Lagoon, Terengganu, South China Sea oleh Chung Wun Nei UK 6403 telah diperiksa dan semua pembedaan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains (Biologi Marin), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS

%	-	percentage
°C	-	degree centigrade
ppm	-	part per million
ppt or ‰	-	part per thousand
mg/L	-	milligram per liter
mm/day	-	millimeter per day
μM	-	micromolarity
μg-at P.L ⁻¹	-	microgram atom phosphorus per liter
μg-at N.L ⁻¹	-	microgram atom nitrogen per liter
cm	-	centimeter
g	-	gram
mg	-	milligram
kg	-	kilogram
L	-	liter
mL	-	milliliter
M	-	molarity
N	-	normality
TN	-	total nitrogen
TP	-	total phosphorus
P	-	phosphorus
TA	-	total alkalinity
Ave.	-	average
w/v	-	weight per volume
C:N:P	-	carbon: nitrogen: phosphorus molar ratio

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ABSTRACT

The distribution of nitrogen and phosphorus in Setiu Lagoon, Terengganu were studied. Twelve sampling stations established from previous study were used in this study and they were visited three times from August to November 2004. The water samples of these stations were taken at mid-depth due to the shallowness of the lagoon. The first sampling, second and third sampling was carried out on 21 August, 23 October and 27 November on year 2004 respectively. The average values of total ammonium, nitrite, total nitrogen, orthophosphate, total phosphorus and total organic carbon during first, were 1.90 μM , 0.66 μM , 63.13 μM , 0.57 μM , 9.67 μM , second sampling were 73.63 μM and 5.03 μM , 0.26 μM , 32.63 μM , 0.40 μM , 13.74 μM , 71.44 μM and third sampling were 6.50 μM , 0.23 μM , 120.3 μM , 0.96 μM , 5.46 μM and 103.19 μM respectively. Nitrite, total nitrogen, orthophosphate, total phosphorus and total organic carbon showed no significant difference ($p>0.05$) among stations. Total ammonium showed significant difference ($p<0.05$) between stations. Total ammonium, total nitrogen, orthophosphate, total phosphorus and total organic carbon indicated a significant difference ($p<0.05$) between the first, second and third samplings. Nitrite and total phosphorus revealed no significant difference ($p>0.05$) between the first, second and third samplings. Nevertheless, the nitrogen concentration was higher than the phosphorus concentration throughout this study. The C:N:P ratio of sampling in Setiu Lagoon was 11: 10: 1.

ABSTRAK

Taburan nitrogen dan phosphorus di lagun Setiu Terengganu telah dikaji sebanyak tiga kali dari Ogos hingga November, 2004. Sebanyak 12 stesen yang telah dipilih dan dikategorikan sebagai kawasan lagun pada kajian tahun lepas digunakan sebagai stesen dalam kajian ini. Sampel air diambil pada kedalaman pertengahan disebabkan kecekatan air lagun. Persampelan pertama, kedua dan ketiga telah dijalankan pada 21 Ogos, 23 Oktober dan 27 November pada tahun 2004 masing-masing. Purata kepekatan jumlah ammonium, nitrit, jumlah nitrogen, orthofostat, jumlah fosforus dan jumlah karbon organik persampelan pertama dengan 1.90 μM , 0.66 μM , 63.13 μM , 0.57 μM , 9.67 μM , 73.63 μM masing-masing, kedua dengan 5.03 μM , 0.26 μM , 32.63 μM , 0.40 μM , 13.74 μM , 71.44 μM masing-masing dan ketiga dengan 6.50 μM , 0.23 μM , 120.3 μM , 0.96 μM , 5.46 μM , 103.19 μM masing-masing. Jumlah nitrogen, nitrite, orthofosfat, jumlah fosforus dan jumlah karbon organik tidak menunjukkan perbezaan yang ketara ($p > 0.05$) di antara stesen. Jumlah ammonium menunjukkan perbezaan ketara ($p < 0.05$) di antara stesen. Jumlah ammonium, jumlah nitrogen, orthofosfat dan jumlah karbon organik menunjukkan perbezaan yang ketara ($p < 0.05$) di antara ketiga-tiga persampelan. Nitrit dan jumlah fosforus tidak menunjukkan perbezaan yang ketara ($p > 0.05$) di antara ketiga-tiga persampelan. Kepekatan nitrogen adalah lebih tinggi daripada kepekatan fosforus bagi ketiga-tiga kali persampelan. Nisbah C:N:P bagi persampelan di Lagun Setiu adalah 11: 10: 1.