

A COMPARATIVE STUDY ON THE CHEMICAL NUTRIENT
DISTRIBUTION IN COASTAL WATER OF MALACCA
STRAIT AND COASTAL WATER OF TERENGGANU,
SOUTHERN CHINA SEA

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**A COMPARATIVE STUDY ON THE CHEMICAL NUTRIENT DISTRIBUTION IN
COASTAL WATER OF MALACCA STRAIT AND COASTAL WATER OF
TERENGGANU, SOUTHERN CHINA SEA**

BY

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**This project report is submitted in partial fulfillment of
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Dickson waters showed a linear relationship with precipitation rate, El Nino has an negative effect on oceanic nutrient concentration. Chlorophyll a in Kuala Terengganu waters is proportional to nitrate and ortho-phosphate concentrations, where there is a relationship between both nutrients and primary productivity. Dissolved organic species concentration are much higher in bottom water than surface and middle water. Nutrients content decreasing seaward, coastal input plays a major role in oceanic nutrient distribution. Blue Lagoon in Port Dickson and Batu Buruk in Kuala Terengganu had distinct higher concentration of nutrients compare to other stations, thus there is a relationship between human activities and nutrient concentrations in the coastal waters.

ABSTRAK

Kepekatan ammonium, ortho-fosfat, alkaliniti, nitrit, nitrat, nitrogen organik, dan fosforus organik telah diukur di kawasan pantai Port Dickson pada bulan Mac, Mei dan Julai 1998. Kepekatan ammonium, ortho-fosfat, alkaliniti, nitrit, nitrat, nitrogen organik, fosforus organik, dan klorofil a telah diukur di kawasan pantai Kuala Terengganu pada bulan Ogos, Oktober dan Disember 1998.

Kepekatan ammonium, ortho-fosfat, alkaliniti, nitrit, nitrat, nitrogen organik, and fosforus organik di perairan Port Dickson dari Mac ke Julai adalah 0.0956 - 0.7125 $\mu\text{g-at}$ N/l (purata 0.3461 $\mu\text{g-at N/l}$); 0.0713 - 0.6793 $\mu\text{g-at P/l}$ (purata 0.2478 $\mu\text{g-at P/l}$); 100.00 - 143.33 ppm (purata 115.23 ppm); 0.0204 - 0.4784 $\mu\text{g-at N/l}$ (purata 0.1690 $\mu\text{g-at N/l}$); 0.0052 - 2.5036 $\mu\text{g-at N/l}$ (purata 0.6603 $\mu\text{g-at N/l}$); 14.69 - 44.76 $\mu\text{g-at N/l}$ (purata 24.29 $\mu\text{g-at N/l}$); dan 0.1048 - 4.8726 $\mu\text{g-at P/l}$ (purata 0.8487 $\mu\text{g-at P/l}$).

Kepekatan ammonium, ortho-fosfat, alkaliniti, nitrit, nitrat, nitrogen organik, fosforus organik dan klorofil a di perairan Kuala Terengganu dari Ogos ke Disember adalah 0.0695 - 1.4163 $\mu\text{g-at N/l}$ (purata 0.2831 $\mu\text{g-at N/l}$); 0.0881 - 0.9686 $\mu\text{g-at P/l}$ (purata 0.2855 $\mu\text{g-at P/l}$); 60.00 - 116.67 ppm (purata 102.50 ppm); 0.0781 - 0.3453 $\mu\text{g-at N/l}$ (purata 0.1595 $\mu\text{g-at N/l}$); 0.1771 - 5.4455 $\mu\text{g-at N/l}$ (purata 1.6437 $\mu\text{g-at N/l}$); 13.00 - 32.20 $\mu\text{g-at N/l}$ (purata 19.88 $\mu\text{g-at N/l}$); 0.0964-0.9435 $\mu\text{g-at P/l}$ (purata 0.6713 $\mu\text{g-at P/l}$); dan 0.919 - 14.223 mg/m^3 (purata 4.169 mg/m^3).

Perairan Port Dickson dan Kuala Terengganu mempunyai kepekatan nitrogen organik dan fosforus organik yang lebih tinggi daripada spesies inorganik. Beberapa parameter kimia perairan Port Dickson menunjukkan suatu hubungan linear dengan kadar

hujan, El Nino ada kesan negatif atas taburan nutrient lautan. Klorofil a di perairan Kuala Terengganu berkadar terus kepada kepekatan nitrat dan ortho-phosphate, terdapat suatu hubungan antara kedua-dua nutrient tersebut dengan produktiviti primer. Kepekatan spesies organik terlarut adalah lebih tinggi di lapisan dasar berbanding dengan lapisan permukaan dan pertengahan air. Kepekatan nutrient berkurangan menuju ke laut, sumber daratan memainkan peranan penting dalam taburan nutrient lautan. Blue Lagoon di Port Dickson dan Batu Buruk di Kuala Terengganu mempunyai kandungan nutrient yang jauh lebih tinggi daripada stesen-stesen lain, ini menunjukkan bahawa terdapat hubugkait antara aktiviti manusia dengan taburan nutrient lautan.

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