

DISTRIBUTION AND HABITAT TYPES OF THE
SEA URCHIN IN BIDONG ISLAND

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URCHIN IN BIDONG ISLAND**

BY

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Dedicated to my father and mother

Thank you for giving me such a wonderful life

**This project report is submitted in partial fulfillment of
the requirements for the Degree of
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Dedicated to my father and mother,

"Thank you for giving me such a wonderful life."

I would like to thank my parents, my father and mother, for their love and support. They have always been a good supporter for me at home. Specifically, I would like to thank Mom, my mother, for always been there for me and for giving me strength and inspiration whenever I am out of ideas. Without her, my life would not have been as wonderful as now.

Last but not least, I wish to express my deep gratitude to all those people, named and unnamed, who have supported and encouraged me through my years of pursuing this thesis. I offer my heartfelt thanks.

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Last but not least, I wish to express my deep gratitude to all those people, named and unnamed, who have supported and encouraged me through my years of preparing this thesis. I offer my heartfelt thanks.

Abstract

A study on the distribution and habitat types of sea urchins at Bidong Island was conducted from June to September 1999. Four species of sea urchins were identified in this study. The species were *Diadema setosum*, *D. savignyi*, *Echinothrix calamaris* and *Echinometra mathaei*. There are five varieties of *E. calamaris*.

The study also revealed that the most commonly found sea urchins were *D. setosum* and *E. calamaris*. The Diversity Index showed station 1 (ST1) recorded the highest index at the depth of 5m while the lowest index was at station 2 (ST2) at the depth of 10m. Generally, the distribution of sea urchins was abundant at 5m depths during the evening hours. Statistical analysis showed significant differences in the distribution of sea urchins with time but no significant difference between stations. Meanwhile there were no significant difference in the distribution of the sea urchins with depth and station.

The preferred habitat types of the sea urchin were found to be hard coral, followed by dead coral cover. Other types of substrates did not show any close relations with the habitat types of the sea urchin.

For further study, it is recommended that sampling of sea urchins for identification should be made at different time period. At the same time, marine environmental factors should be taken into consideration in the study of the distribution patterns of the sea urchin. In addition, other biological aspects such as feeding behaviour of the sea urchin should be carried out to determine its habitat types.

Abstrak

Kajian ke atas taburan dan jenis habitat landak laut di Pulau Bidong telah dijalankan dari bulan Jun hingga bulan September 1999. Empat spesies landak laut telah dikenalpasti dalam kajian ini. Spesies tersebut adalah *Diadema setosum*, *D. savignyi*, *Echinothrix calamaris* dan *Echinometra mathaei*. Terdapat lima variasi dalam *E. calamaris*.

Kajian ini menunjukkan bahawa landak laut yang terbanyak dijumpai ialah *D. setosum* dan *E. calamaris*. Indeks Diversiti menunjukkan stesen 1 (ST1) mencatatkan nilai tertinggi pada waktu petang untuk kedalaman 5m manakala indeks terendah dicatatkan di stesen 2 (ST2) pada kedalaman 10m. Secara amnya, taburan landak laut didapati paling banyak dijumpai pada waktu petang untuk kedalaman 5m. Analisis statistik menunjukkan perbezaan-perbezaan yang amat ketara untuk taburan mengikut masa tetapi tiada perbezaan untuk taburan mengikut stesen. Di samping itu, tiada perbezaan didapati untuk kedua-dua taburan mengikut kedalaman dan stesen.

Jenis habitat yang digemari oleh landak laut ialah karang keras dan diikuti pula oleh karang mati. Jenis substrat yang lain tidak menunjukkan sebarang perhubungan yang rapat dengan habitat kegemaran landak laut.

Untuk kajian susulan, adalah dicadangkan bahawa persampelan landak laut untuk pengenalpastian patut dijalankan dalam tempoh masa yang berlainan. Pada masa yang sama, faktor-faktor persekitaran marin juga harus diberi perhatian untuk kajian ke atas corak taburan landak laut. Sebagai tambahan, aspek biologikal yang lain seperti tabiat pemakanan landak laut patut dijalankan untuk menentukan jenis habitatnya.