

COMPARATIVE STUDY ON THE MORTALITY AND  
GROWTH OF TRANSPLANTED CORALS  
AT DIFFERENT DEPTHS

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ACKNOWLEDGEMENTS

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BY

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**This project report is submitted in partial fulfillment of  
the requirements for the Degree of  
Bachelor of Science (Marine Science)**

**Faculty of Applied Science and Technology  
UNIVERSITI PUTRA MALAYSIA TERENGGANU**

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**1100024246**

## ACKNOWLEDGEMENTS

First of all, I would like to express my deepest appreciation and sincere gratitude to my supervisor, **Mr. Liew Hock Chark**, for his dedicated and patient guidance, advice, encouragement and time in helping me to complete my project. Truly I had learnt a lot from him and without his precious supervision, I might be unable to handle my project. *Thank you, Mr. Liew!!!*

I would also like to thank Professor Madya Dr. Chan Eng Heng, SEATRU UPMT for their support in funding my sampling trips and accommodations in Chagar Hutang.

Besides, my heartiest gratitude also reaches out to Dr. Khalid Hj. Samo, Mr. Kassim, Mr. Zulkefli Mat Teh, Mr. Mat Muda SCUBA Unit and MARINE Unit UPMT and Marine Park staff for their technical assistance throughout the whole sampling period.

My deepest appreciation also reach to Miss Chin Yee Wan, Mr. Yap Kian Fatt, Miss Yuen Yeong Shyan, Miss Yong Huey Lee, Mr. Baharim Mustapa, Mr. Kang Soo Lim, Maya, Miss Tan Ai Kim, Miss Tai Yi Ai, Miss Norine Majaman, Miss Teoh Miang Joo, Aziz, Mahadi, Johan and Ai Pying. And all the best in pursuing their future undertakings in their separate vocations in life.

Last but not least, I am much blessed by the support and understanding of my mother and father also Michelle Lee. Finally, I want to say that I certainly won't forget those who have helped me throughout the year. Thanks a lot!!!

## ABSTRACT

The growth and survival of corals transplanted to different depths were monitored in this study. Results obtained showed that corals from deep water rarely survive transplantation to shallow water with growth and recovery rates diminishing with increasing change in depth. Species with differing growth morphology were compared. The species selected were *Acropora yongei*, *Pocillopora damicornis*, *Fungia repanda* and *Porites lutea*. The species that exhibited the best growth was *Acropora yongei* and they recovered much faster than *Porites lutea*. Most of the samples from *Porites lutea* did not survive.

This study showed that transplanted corals grow but at a rate slower than the natural inhabitants. It needed a very long time and optimum environment to recover such as adequate light penetration, optimal temperature and salinity. The most suitable depth for optimum growth of corals is at 5 m as concluded in this study.

Smaller colonies of transplanted corals died much faster than the bigger colonies. The mortality rates decreased with depth. The monitoring of coral mortality will give some clue to how well corals adapt with regards to parameters such as depth and changes in environment.

## ABSTRAK

Pertumbuhan dan kemandirian batu karang yang telah dipindah ke kedalaman yang berbeza telah diperhatikan dalam kajian ini. Keputusan menunjukkan bahawa batu-batu karang yang dipindah dari kawasan yang dalam ke kawasan cetek, kurang berjaya menyesuaikan diri di mana pertumbuhan dan kadar pemulihan berkurang dengan penambahan kedalaman. Perbandingan morfologi pertumbuhan setiap spesis telah dibuat. Spesis yang dipilih adalah *Acropora yongei*, *Pocillopora damicornis*, *Fungia repanda* dan *Porites lutea*. Didapati *Acropora yongei* merupakan spesis yang terbaik di mana ia menunjukkan pertumbuhan dan kadar pemuliharaan yang lebih cepat berbanding *Porites lutea*. Hampir kesemua batu karang jenis *Porites lutea* tidak berjaya untuk hidup.

Kajian juga menunjukkan bahawa batu karang yang dipindahkan turut menunjukkan pertumbuhan tetapi pada kadar yang lebih lambat berbanding batu karang asal. Ia memerlukan masa yang lebih lama dan keadaan yang optimum untuk pulih seperti penembusan cahaya yang mencukupi, suhu dan saliniti yang optimal. Kajian ini juga menyimpulkan bahawa kedalaman yang paling sesuai untuk pertumbuhan batu karang yang optimum adalah pada kedalaman 5 m.

Koloni batu karang yang dipindahkan dimana saiznya lebih kecil akan lebih senang mati daripada koloni batu karang yang bersaiz besar. Didapati juga, kadar kematian adalah berkurang dengan peningkatan kedalaman. Pemerhatian kadar kematian batu karang dapat memberi petunjuk kepada bagaimana batu karang menyesuaikan diri dan juga kaitannya dengan perubahan kedalaman dan keadaan persekitaran.