

STUDY ON SHORELINE CHANGES ALONG
KUALA TERENGGANU COASTAL USING
NUMERICAL SIMULATION

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2012

**STUDY ON SHORELINE CHANGES ALONG KUALA TERENGGANU
COASTAL USING NUMERICAL SIMULATION**

**By
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**A thesis submitted in partial fulfillment of
the requirements for the award of the degree of
Bachelor of Applied Science (Maritime Technology)**

**DEPARTMENT OF MARITIME TECHNOLOGY
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
2012**

TAJUK: KAJIAN PERUBAHAN PESISIR PANTAI SEPANJANG PANTAI KUALA TERENGGANU MENGGUNAKAN SIMULASI BERANGKA

ABSTRAK

Garis pesisir pantai ditakrifkan sebagai persilangan tanah dan air. Ia berubah dengan pesat di bawah proses kesan dinamik seperti ombak, pasang surut, arus dan angin. Oleh itu, perubahan garis pantai merupakan isu penting di Malaysia kerana kesan yang merosakkan. Projek penyelidikan ini memberi tumpuan kepada kajian perubahan garis pantai di sepanjang pantai Kuala Terengganu. Dalam kajian ini, pemodelan simulasi berangka telah digunakan untuk meramal perubahan pinggir pantai sebagai perisian LITPACK dipanggil. Ramalan perubahan garis pantai adalah simulasi dari April 2009 hingga Mac 2010 di Kuala Terengganu pantai. Panjang pantai adalah kira-kira 2000 meter. Dari keputusan satu tahun simulasi, ia boleh membuat kesimpulan bahawa julat pergerakan keladak antara $-262,115 \text{ m}^3 / \text{s}$ untuk $-256,990 \text{ m}^3 / \text{s}$ dan ia menunjukkan bahawa perubahan garis pantai adalah bernilai kecil. Ramalan perubahan garis pantai juga termasuk dua faktor yang mempengaruhi perubahan garis pantai. Faktor pertama, menggunakan sudut gelombang yang berbeza. Dari faktor ini, ia menyimpulkan bahawa sudut gelombang yang lebih kecil akan memberikan nilai yang besar untuk perubahan garis pantai. Faktor kedua, menggunakan paras air yang berbeza. Ia menyimpulkan bahawa, perubahan paras air akan menjejaskan kadar perubahan garis pantai. Kesimpulannya, paras air yang lebih terjejas perubahan garis pantai berbanding dengan sudut gelombang.

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ABSTRACT

Coastal shoreline is defined as intersection of land and water. It changes rapidly under dynamic processes effect such as wave, tides, currents and winds. Consequently, shoreline change is an important issue in Malaysia due to its destructive impact. This research project focuses on a study of shoreline changes along Kuala Terengganu coastal. In this study the numerical simulation modeling was used to predict the shoreline changes as called LITPACK software. The prediction of the shoreline changes was simulated from April 2009 to March 2010 at Kuala Terengganu coastal. The length of the coast was approximately 2000 meters. From the result of one year simulation it can concluded that the sediment transport range between $-262.115 \text{ m}^3/\text{s}$ to $-256.990 \text{ m}^3/\text{s}$ and it shows that the shoreline changes was small value. The prediction of the shoreline changes also includes two factors that affected the shoreline changes. The first factor was using the different wave angle. From this factor, it concluded that the smaller angle of wave will give the large value for the shoreline changes. The second factor was using the different water level. It can conclude that, the changes of water level will affected the rate of the shoreline changes. As a conclusion, the water level more affected the shoreline changes compare to the wave angle.

ACKNOWLEDGEMENTS

Firstly, Alhamdulillah and thank you to The Most Merciful Allah for giving me chances to complete the thesis at the given time.

I would like to offer my sincere thanks to many people who have contributed to this study, Assoc. Prof. Dr. Mohammad Fadhli bin Ahmad, my main supervisor, always provided me with intense guidance, critical comments, valuable suggestions, patient advice from beginning of this study.

Grateful acknowledgement is extended to Mr. Rodila bin Ibrahim, my supervisor's master student for his comment and helpful advice that had strengthened my confidence to finish this study. I would like to express my appreciation to Miss Zukirani binti Ashari because help me in study of using MIKE ZERO (LITPACK) software.

Besides that, I would like to thank my parent. Their endless love and support has enable me to see the value of education and encourage me to continue complete mine. Without their motivation, my vision of completing this study would not come to pass. Their patience and financial support gave me strength to complete my educational goal.

Lastly, I would like to thank to the department of maritime technology. The faculty and staff have always gone out of their way to help me. I realize that without them, my study would not complete. I would also to thanks them all for the memories and support that they give me. To my housemate that help me with my study direct or indirectly, thanks to you all.