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BEACH PROCESS DYNAMIC AND LOCAL COMMUNITY PERCEPTION IN KUALA NERUS

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Beach processes are a natural phenomenon caused by the influence of hydrodynamic changes. During extreme changes such as strong waves, wind and currents occur, the normal beach processes are disturbed, indirectly affecting the local community. This study aims to investigate the beach processes between different beaches in Kuala Nerus in response to natural processes and its impact on the coastal defence structure and to analyse the impact of beach processes on the local community, focusing on the socio-economic status. This study covers eight stations along the coastline of Kuala Nerus, starting from Batu Rakit to Seberang Takir. There are two main approaches to achieve the objectives of the study namely, to investigate the changes in the beach process and to investigate the impact of the beach process towards the local communities. The beach process was measured from June 2018 to January 2020 using a Topcon (GPT-3100N) total station. A total of 72 profiles were recorded during the entire period. The measurements were analysed using Profiler 3.0 and 3.2XL to obtained beach elevation, volume and slope of the beach. Statistical analysis was also conducted using Past 4.03 software and normality and Kruskal-Wallis tests were performed. Pengkalan Maras is the most impacted with irregular beach elevation, volume and slope. The impact of the coastal processes on the socio-economic conditions of the local communities was determined through questionnaire surveys. Initially, a pilot study was conducted at four selected sites. 60 responses (22% of the

recommended sample size of 271) were collected in October 2018. Based on the collected responses, statistical analyses such as reliability, normality and EFA test were conducted using SPSS software. Meanwhile, during the actual quantitative survey, 137 responses were collected in all eight sampling stations in September 2019. The collected responses were also subjected to the same statistical analysis with the addition of a regression test. The result of the analysis revealed that the socioeconomic conditions of local communities are influenced by income, occupation, family size and family relationship, and health status. These research findings help to better understand the perspectives of local communities in order to identify the best adaptation and effective mitigation measures that can be proposed to local authorities in the future.

Abstrak tesis yang dikemukakan kepada Senat Universiti Malaysia Terengganu sebagai memenuhi keperluan untuk Ijazah Master Sains

PROSES PANTAI DINAMIK DAN PERSEPSI KOMUNITI TEMPATAN DI KUALA NERUS

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Proses pantai merupakan fenomena semulajadi yang berlaku disebabkan oleh pengaruh daripada perubahan hidrodinamik. Semasa berlakunya perubahan melampau seperti ombak, angin dan arus yang kuat proses pantai yang biasa akan diganggu menyebabkan impak secara tidak langsung kepada penduduk sekitar. Kajian ini bertujuan untuk menyelidiki proses pantai diantara pantai-pantai di Kuala Nerus sebagai tindak balas kepada proses semulajadi atau pengaruh daripada struktur pertahanan pantai dan untuk menganalisis impak proses pantai ke atas penduduk sekitar khususnya status sosio-ekonomi. Kajian ini meliputi lapan kawasan kajian di persisiran Kuala Nerus bermula daripada Batu Rakit sehingga ke Seberang Takir. Terdapat dua pendekatan untuk mencapai matlamat kajian iaitu dengan meneliti perubahan proses pantai dan meneliti kesan proses pantai terhadap komuniti setempat. Proses pantai diukur menggunakan tiodolit elektronik Topcon (GPT-3100N) daripada bulan Jun 2018 sehingga Januari 2020. Keseluruhan profil yang diukur sepanjang proses persampelan adalah 72 profil. Bacaan hasil daripada pengukuran pantai dianalisa menggunakan Profiler 3.0 dan 3.2XL untuk mendapatkan ketinggian, isipadu dan kecerunan pantai. Analisa statistik seperti ujian normaliti dan ujian Kruskal-Wallis juga turut dijalankan menggunakan perisian Past 4.03. Pengkalan Maras merupakan pantai yang paling terjejas melalui bacaan ketinggian, isipadu dan kecerunan pantai. Impak proses pantai terhadap sosio-ekonomi penduduk sekitar dijalankan

menggunakan tinjauan soal selidik. Pada mulanya, kajian rintis dijalankan di empat kawasan terpilih mengumpulkan 60 jumlah maklum balas (22% daripada 271 saiz sampel yang disyorkan) pada bulan Oktober 2018. Daripada maklum balas yang dikumpulkan, analisa statistik seperti ujian kebolehpercayaan, normaliti dan EFA telah dijalankan menggunakan perisian SPSS. Semasa tinjauan soal selidik yang sebenar, 137 maklum balas telah dikumpulkan pada September 2019 di kelapan-lapan stesen kajian. Maklum balas yang dikumpulkan turut melalui analisa stastitik yang sama dengan penambahan analisa regresi. Keputusan daripada analisis mendapati sosio-ekonomi penduduk sekitar adalah terkesan oleh status pendapatan, pekerjaan, saiz dan hubungan kekeluargaan dan juga kesihatan. Dapatan daripada kajian ini dapat menunjukkan perspektif masyarakat untuk mencari penyesuaian terbaik dan langkah mitigasi yang berkesan yang boleh dicadangkan kepada pihak berkuasa tempatan pada masa hadapan.