RINGKASAN

AUNNIKE JUNIWATI BR MARBUN. Analisis Transpor Sedimen Di Sekitar Lokasi Reklamasi Kota Tanjungpinang menggunakan Model Hidrodinamika. Dibimbing oleh MARIO PUTRA SUHANA dan RISANDI DWIRAMA PUTRA.

Transpor sedimen berpotensi pengikisan atau disebut dengan erosi yang menyebabkan pengurangan kedalaman perairan dan penambahan material atau yang bisa disebut peristiwa sedimentasi. Kajian tentang karakteristik sedimen di perairan Tanjungpinang melihat kondisi perairan yang berpengaruh terhadap transpor sedimen seperti pengaruh arus pasang surut, elevasi muka air laut, angin yang membawa partikel meninggalkan perairan ke perairan lainnya. Tujuan penelitian ini untuk menganalisa pola transpor sedimen di sekitar reklamasi serta mengetahui faktor pendukung transpor sedimen dan karakteristik sedimen di Perairan Tanjungpinang. Penelitian ini dilaksanakan pada bulan Oktober 2021, dengan pengolahan data memodelkan transpor sedimen menggunakan 21/3 couple modul pilihan sand transpor pada software MIKE21. Metode yang digunakan dalam penelitian ini metode *purposive sampling*. Hasil akan dilihat pola arus terbentuk menggunakan 4 kondisi pasang surut, pola perubahan dasar perairan *(rate bed level change), bed level* dan *bed level change* Perairan Tepi Laut Tanjungpinang. Berdasarkan hasil penelitian diketahui karakteristik sedimen menunjukan bahwa pengaruh hidro-oseanografi menyebabkan terjadinya transpor sedimen. Dilihat dari nilai karakteristik *mean size, sorting, skewness* dan *kurtosis* menunjukan arus bergerak tidak stabil mengakibatkan terjadinya pengikisan dan penambahan material sedimen di perairan. Hasil arus menggunakan 4 kondisi pasang surut menunjukan nilai kecepatan arus mampu mengangkut sedimen saat kondisi menuju pasang dan kondisi menuju surut, namun bila dilihat dari kondisi pasang dan kondisi surut perairan Tepi Laut Kota Tanjungpinang nilai kecepatan arus melemah. Hasil grafik *bed level* pada dasar perairan menunjukan bahwa perairan Tepi laut kota Tanjungpinang memiliki potensi abrasi bila dilihat dari hasil nilai *bed level change* perstasiun hal ini diakibatkan pengaruh arus yang membawa tekanan mentranspor sedimen. Perairan Tepi Laut Kota Tanjungpinang rentan terjadi nya transpor sedimen yang menyebabkan perubahan dasar perairan seperti peristiwa erosi dan sedimentasi.

Kata kunci: Arus Pasang Surut, Perairan Tanjungpinang, Transpor Sedimen

SUMMARY

AUNNIKE JUNIWATI BR MARBUN. Hydrodynamic Model of Two Dimensions of Wave. Supervised by MARIO PUTRA SUHANA and RISANDI DWIRAMA PUTRA.

Sediment transport has the potential for erosion or called erosion which causes a reduction in water depth and the addition of material or what can be called sedimentation events. The study of sediment characteristics in Tanjungpinang waters looks at water conditions that affect sediment transport such as the influence of tidal currents, sea level elevation, winds that carry particles from the waters to other waters. The purpose of this study was to analyze the pattern of sediment transport around the reclamation and to determine the supporting factors of sediment transport and sediment characteristics in Tanjungpinang waters. This research was conducted in October 2021, with data processing modeling sediment transport using the 21/3 couple sand transport option module on the MIKE 21 software. The method used in this research is purposive sampling method. The results will be seen that the current pattern is formed using 4 tidal conditions, the pattern of changes in the bottom of the waters (rate bed level change), bed level and bed level change in the Tanjungpinang Seaside Waters. Based on the results of the study, it is known that the sediment characteristics indicate that the effect of hydro-oceanography causes sediment transport to occur. Judging from the characteristic values of mean size, sorting, skewness and kurtosis, the currents move unstable so that irregular sediment transport results in erosion and then addition of sedimentary material in the waters. The results of currents using 4 tidal conditions show that the current velocity value is able to transport sediment when conditions are heading towards high tide and conditions leading to low tide, but when viewed from tidal conditions and low tide conditions the waters of the Tanjungpinang City Seaside value weakens the current velocity. The results of the bed level graph on the bottom of the water show that the waters of the Tanjungpinang city have the potential for abrasion when viewed from the results of the bed level change at the station this is due to the influence of currents that carry sediment transport pressure. The waters of the Tanjungpinang City Seaside are prone to sediment transport which causes changes in the bottom of the waters such as erosion and sedimentation events.

Keywords: Tidal Currents, Tanjungpinang sea, Sediment Transport