

## Karakteristik sedimen pantai di pesisir selatan Kabupaten Pacitan, Provinsi Jawa Timur = Characteristics of coastal sediments on the southern coast of Pacitan District, East Java

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### Abstrak

Pesisir selatan Kabupaten Pacitan merupakan salah satu wilayah yang berbatasan langsung dengan Samudera Hindia dan memiliki sebuah teluk bernama Teluk Pacitan. Proses erosi dan sedimentasi perlu diketahui untuk melihat kondisi fisik pantai. Ukuran dan diameter butir sedimen merupakan bagian dari sifat-sifat sedimen yang dapat memberikan informasi tentang proses transport sedimen. Distribusi sedimen memberikan gambaran mengenai asal sedimen, sejarah transportasi, dan kondisi pengendapannya. Penelitian ini bertujuan untuk menganalisis lingkungan sedimentasi dan menganalisis variabel yang paling berpengaruh terhadap diameter butir sedimen. Metode pengambilan sampel daerah acak berstrata pada setiap segmen sepanjang 150x150 meter untuk pengumpulan sampel sedimen dan data kemiringan gisik pantai. Pengelompokan sedimen dari hasil pengayakan yang dilakukan di laboratorium P2O LIPI berdasarkan skala Wentworth dan dilakukan uji granulometri. Arus pantai dan energi gelombang diperoleh dari sumber data BMKG Ocean Forecast System. Hasil penelitian menunjukkan bahwa sedimen dengan jenis pasir mendominasi di semua pantai. Nilai mean pada pantai hadapan samudera berkisar antara 0.18 ndash; 2.43, sorting adalah well sorted hingga poorly sorted, skewness adalah very fine skewed hingga very coarse skewed, dan kurtosis adalah very leptokurtic dan extremely leptokurtic. Pantai hadapan teluk, nilai mean 2.20 ndash; 4.49 dari sisi barat hingga timur, sorting adalah very well sorted hingga moderately sorted, skewness adalah very fine skewed hingga coarse skewed, dan kurtosis adalah very leptokurtic dan extremely leptokurtic. Hasil uji statistik dengan Analisis Regresi Linier Berganda diperoleh hasil arus pantai, energi gelombang, dan kemiringan gisik pantai berpengaruh secara simultan terhadap diameter butir sedimen.

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The southern coast of Pacitan regency is one of the areas directly adjacent to the Indian Ocean and has a bay called Pacitan Bay. The process of erosion and sedimentation should be known to see the physical condition of the beach. The size and diameter of the sediment grains are part of the sedimentary properties that can provide information about the sediment transport process. Sediment distribution provides an overview of the origin of sediments, transportation history, and deposition conditions. This study aims to analyze the sedimentation environment and analyze the variables that have the most influence on the diameter of the sediment grains. Methods of sampling stratified random areas on each segment along 150x150 meters for collection of sediment samples and slope data of coastal gradients. The grouping of sediments from the sieving result conducted in LIPI P2O laboratory based on Wentworth scale and granulometry test. Coastal currents and wave energy are obtained from BMKG Ocean Forecast System data source. The results showed that sediment with sand types dominates on all beaches. Mean values on oceanfront beaches range from 0.18 2.43, sorting is well sorted to poorly sorted, skewness is very fine skewed to very coarse skewed, and kurtosis is very leptokurtic and extremely leptokurtic. Beachfront bay, mean value 2.20 4.49 from west to east side, sorting is very well sorted to moderately sorted, skewness is very fine skewed to coarse skewed, and kurtosis is very leptokurtic and extremely leptokurtic. The result of statistical test with Multiple Linear

Regression Analysis showed that coastal currents, wave energy, and the slope of the coastal gradient influence simultaneously to the diameter of the sediment grains.