KERENTANAN FISIK ALAMI SEBAGIAN TIPOLOGI WILAYAH KEPESISIRAN GUNUNGKIDUL

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INTISARI

Fenomena pemanasan global yang memicu kenaikan muka air laut dan serangkaian anomali cuaca mengancam ekosistem di pesisir. Kejadian erosi marine lebih intensif dan gelombang tinggi akibat siklon sering berasosiasi dengan fenomena tersebut. Kawasan Pantai Baron – Pok Tunggal di wilayah kepesisiran Gunungkidul memiliki perkembangan wisata yang tinggi, kondisi alami pantai, dan dinamika pesisir yang rentan terpapar bahaya.

Tujuan penelitian ini adalah menilai kerentanan fisik sebagian tipologi wilayah pesisir di Kawasan Pantai Baron – Pok Tunggal dan menentukan faktor yang berpengaruh dominan terhadap kerentanan. Penilaian kerentanan menggunakan *Coastal Vulnerability Index* (CVI) dengan variabel geomorfologi, kemiringan pantai, lebar gisik, rata-rata tinggi gelombang signifikan, rata-rata rentang pasut, dan rata-rata kenaikan muka air laut. Data terkait morfodinamika diperoleh melalui observasi, pengukuran langsung di lapangan dengan *systematic sampling*, serta ekstraksi dari foto udara dan DSM. Data terkait hidrodinamika menggunakan hasil pemodelan dan prediksi oleh beberapa instansi.

Hasil penelitian diperoleh bahwa terdapat 12 dan 11 unit analisis tipologi pesisir *marine deposition coast* (pesisir ber-gisik) termasuk dalam kerentanan sedang dan tinggi. Kerentanan tinggi berada di pantai dengan gisik cenderung cembung dan cekung, serta lebih banyak bangunan di sepanjang gisik pantai. Pantai termasuk kerentanan sedang memiliki lebih banyak vegetasi di pingir pantai dan bentuk gisik lurus. Terdapat 24 unit tipologi pesisir *wave erosion coast* (pesisir ber-*cliff*) termasuk dalam kerentanan rendah. Pantai Buluk, Drini, Kosakora, Sarangan, dan Pantai Krakal hingga Pantai Indrayanti termasuk dalam kerentanan tinggi. Variabel geomorfologi, tinggi gelombang signifikan, dan kenaikan muka air laut lebih berpengaruh kuat terhadap kerentanan, di mana pada kerentanan sangat tinggi terdistribusi lebih banyak.

Kata kunci: kerentanan pesisir, *Coastal Vulnerability Index* (CVI), *cliff*, gisik pantai, kikisan gelombang

NATURAL PHYSICAL VULNERABILITY OF SEVERAL COASTAL TYPOLOGIES IN GUNUNGKIDUL COASTAL AREA

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ABSTRACT

Global warming phenomenon triggers sea level rise and a series of weather anomalies threaten coastal ecosystems. Intensive marine erosion and high waves due to cyclone often associated with this phenomenon. Baron - Pok Tunggal beach in Gunungkidul coastal area has high tourism development, natural beach conditions, and dynamic coastal which are prone to hazards.

This study aims to assess the natural physical vulnerability several of coastal typologies in Baron - Pok Tunggal beach and determine factor has strong effect on the vulnerability. Vulnerability assessment was conducted using Coastal Vulnerability Index (CVI) method with variables: geomorphology, coastal slope, beach width, mean significant wave height, mean tide range, and mean sea level rise. Data related to morphodynamics were obtained through observation, direct measurements in the field using systematic sampling, extraction from aerial photograph and DSM. Data related to hydrodynamics using modelling and predictions by agencies.

The results showed that there are 12 and 11 units of marine deposition coast typology included in moderate and high-class vulnerability. The coast with high-class vulnerability has beach form tend to convex or concave, and many buildings along the coast. The coast with moderate-class vulnerability has many vegetations along the coast and straight beach. There are 24 units of wave erosion coast typology included in low-class vulnerability. Buluk, Drini, Kosakora, Sarangan, and all beaches from Krakal to Indrayanti beach has high-class vulnerability. Variable geomorphology, significant wave height, and sea level rise has strong effect to the vulnerability. Those variables with very high vulnerability is largely distributed.

Keywords**:** *coastal vulnerability*, *Coastal Vulnerability Index* (CVI), *cliff, beach, wave erosion*