

ABSTRAK

Wilayah kepebisiran Kabupaten Kulon Progo rawan terhadap erosi marin, karena berhadapan langsung dengan Samudera Hindia yang memiliki sifat gelombang kuat dan merusak. Penelitian ini bertujuan untuk: 1) Menganalisis dinamika morfologi dasar pantai yang menyebabkan pergeseran pantai; 2) Menganalisis dinamika garis pantai ditinjau menggunakan citra multi-temporal tahun 2014-2023; 3) Menilai sempadan pantai yang sesuai berdasarkan dinamika garis pantai. Penelitian ini merupakan penelitian deduktif kuantitatif. Pengolahan morfologi dasar pantai dilakukan dengan software MIKE 21/3 *Coupled Model FM*, dengan data berupa pasang surut, arah dan kecepatan angin, batimetri, dan material sedimen. Sedangkan pengolahan dinamika garis pantai menggunakan citra satelit multi-temporal dilakukan dengan *software Digital Shoreline Analysis System (DSAS)* dengan data citra Landsat 8-9 OLI tahun 2014-2023. Penilaian lebar sempadan pantai dilakukan dengan membandingkan hasil penelitian dengan peraturan yang berlaku. Hasil penelitian tujuan 1 terdapat penurunan morfologi dasar pantai di wilayah kepebisiran Kabupaten Kulon Progo yang terjadi di Pantai Congot, Pantai Glagah, Pantai Bidara, Pantai Bugel, Pantai Trisik dan Muara Sungai Progo. kenaikan morfologi dasar terjadi di Muara Sungai Bogowonto dan Muara Sungai Serang. Sedangkan, Hasil penelitian tujuan 2, didapatkan Pantai Congot, Pantai Glagah, Pantai Bidara, Pantai Bugel, dan Pantai Trisik serta Muara Sungai Progo setiap tahunnya mengalami kemunduran pantai yang ditunjukkan dengan nilai EPR dan LRR yang negatif. Hasil tujuan 3 didapatkan hasil penilaian lebar sempadan pantai minimal diterapkan saat ini adalah 200 meter, akan tetapi perlu menjadi perhatian bahwa dinamika garis pantai akan selalu berlangsung, maka sebagai opsi selain memperlebar sempadan pantai juga dilakukan upaya perlindungan pantai yang lain.

Kata Kunci : Dinamika Garis Pantai, Erosi Marin, MIKE 21/3 *Coupled Model FM*, DSAS, Sempadan Pantai.

ABSTRACT

The coastal area of Kulon Progo Regency is prone to marine erosion. The area is directly facing the Indian Ocean which has strong and destructive waves. This research aims to: 1) Analyze the morphological dynamics of the seafloor that causes coastal drift; 2) Analyze shoreline dynamics using multi-temporal imagery from 2014-2023; 3) Assess the appropriate riparian area based on shoreline dynamics. This research is a quantitative deductive research. Processing of bed level change was carried out with MIKE 21/3 Coupled Model FM software, with data in the form of tides, wind direction and speed, bathymetry, and sediment material. Meanwhile, the processing of shoreline dynamics using multi-temporal satellite images was carried out with Digital Shoreline Analysis System (DSAS) software with Landsat 8-9 OLI image data for 2014-2023. Assessment of the width of the riparian area was carried out by comparing the research results with applicable regulations. The results of research objective 1 showed a decrease in bed level change in the coastal area of Kulon Progo Regency which occurred at Congot Beach, Glagah Beach, Bidara Beach, Bugel Beach, Trisik Beach and the Progo River Estuary. The increase in bed level change occurred at the Bogowonto River Estuary and the Serang River Estuary. Meanwhile, the results of research objective 2, obtained Congot Beach, Glagah Beach, Bidara Beach, Bugel Beach, and Trisik Beach and the Progo River Estuary each year experienced coastal retreat as indicated by negative EPR and LRR values. The results of objective 3 obtained the results of the assessment of the minimum riparian area width applied at this time is 200 meters, but it should be noted that the dynamics of the shoreline will always take place, therefore, as an option to widening the coastal boundary, other coastal protection efforts are also carried out.

Keywords : *Shoreline Dynamics, Marin Erosion, MIKE 21/3 Coupled Model FM, DSAS, Riparian Areas.*