

ABSTRAK

ANALISIS KUALITAS PERAIRAN PANTAI BADAK, KECAMATAN LIMAU, KABUPATEN TANGGAMUS, BERDASARKAN METODE INDEKS PENCEMARAN

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ENDAH ERINAWATI

Pantai Badak berada di Kecamatan Limau, Kabupaten Tanggamus, Provinsi Lampung. Perairan Pantai Badak terdapat kegiatan pertambakan, pariwisata, dan tempat pelelangan ikan. Permasalahan utama wilayah pesisir, pantai, dan laut adalah terjadinya pencemaran yang mengakibatkan penurunan kualitas dan kuantitas sumberdaya pesisir. Tujuan dari penelitian ini adalah untuk: (1) menganalisis kualitas perairan; (2) mengetahui kelimpahan genus fitoplankton; (3) menentukan status mutu perairan Pantai Badak dengan Metode Indeks Pencemaran. Penelitian ini dilaksanakan pada bulan Juli-September 2024. Pengambilan sampel dilakukan di 3 stasiun. Stasiun 1 terletak di Muara Sungai Kuala berdekatan dengan tempat pelelangan ikan (TPI). Stasiun 2 terletak di Kawasan wisata Pantai Badak berdekatan dengan ekosistem mangrove. Stasiun 3 berdekatan dengan lokasi budidaya udang tempat pembuangan limbah tambak (kanal). Hasil penelitian diperoleh kelas fitoplankton terdapat 30 genus dari kelas Bacillariophyceae, Chlorophyceae, Cyanophyceae, Dinophyceae, dan Xantophyceae. Berdasarkan analisis indeks pencemaran yang diperoleh dengan nilai C_{ij}/L_{ij} maksimum 10,1 nilai rata-rata 2,897, dan nilai IP 55,20 (bulan Juli), nilai C_{ij}/L_{ij} maksimum 10,8, nilai rata-rata 3,509, dan nilai IP 65,47 (bulan September). Kesimpulan dari penelitian ini yaitu terdapat beberapa parameter perairan Pantai Badak seperti suhu, kedalaman, kecepatan arus, pH, DO, ortofosfat, dan salinitas masih sesuai baku mutu. Sedangkan parameter lain seperti TSS, BOD, COD, nitrat, dan ammonia sudah melebihi baku mutu. Fitoplankton yang ditemukan perairan Pantai Badak didapat 5 kelas yaitu Bacillariophyceae, Chlorophyceae, Chyanophyceae, Dinohycaeae, dan Xantphyceae. Jenis yang banyak ditemukan yaitu *Oscillatoria* dari kelas Chyanophyceae yang memiliki kelimpahan tertinggi di bulan September pada Stasiun 1 yaitu sebesar 2.364 Sel/L. Berdasarkan kelimpahan fitoplankton rata-rata setiap stasiun nilai yang diperoleh pada bulan Juli pada Stasiun 1 yaitu 4.007 Sel/L. Nilai Indeks Pencemaran perairan Pantai Badak bulan Juli dan September 2024 sebesar 55,20-64,47, sehingga perairan Pantai Badak tergolong tercemar berat.

Kata Kunci: Fitoplankton, Indeks Pencemaran, Kualitas Air, Pantai Badak.

ABSTRACT

WATER QUALITY ANALYSIS OF BADAK BEACH, LIMAU SUB-DISTRICT, TANGGAMUS DISTRICT, BASED ON POLLUTION INDEX METHOD

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ENDAH ERINAWATI

Badak Beach is located in Limau District, Tanggamus Regency, Lampung Province. The waters of Badak Beach are used for aquaculture, tourism, and fish auctions. The main problems facing coastal areas, beaches, and the sea are pollution, which causes a decline in the quality and quantity of coastal resources. The objectives of this study were: (1) analyze water quality; (2) determine the abundance of phytoplankton genera; (3) determine the water quality status of Badak Beach using the Pollution Index Method. This research was conducted from July to September 2024. Sampling was carried out at three stations. Station 1 was located at the Kuala River estuary near the fish auction site (TPI). Station 2 was located in the Badak Beach tourist area near the mangrove ecosystem. Station 3 is located near a shrimp farm where pond waste is discharged (canal). The results of the study showed that there were 30 genera of phytoplankton from the classes Bacillariophyceae, Chlorophyceae, Cyanophyceae, Dinophyceae, and Xantophyceae. Based on the pollution index analysis, the maximum Cij/Lij value was 10.1, the average value was 2.897, and the IP value was 55.20 (July), while the maximum Cij/Lij value was 10.8, the average value was 3.509, and the IP value was 65.47 (September). The conclusion of this study is that several parameters of Badak Beach waters, such as temperature, depth, current velocity, pH, DO, orthophosphate, and salinity, are still within the quality standards. Meanwhile, other parameters such as TSS, BOD, COD, nitrate, and ammonia have exceeded the quality standards. Five classes of phytoplankton were found in the waters of Badak Beach, namely Bacillariophyceae, Chlorophyceae, Chyanophyceae, Dinophyceae, and Xantophyceae. The most abundant species was *Oscillatoria* from the Chyanophyceae class, which had the highest abundance in September at Station 1, amounting to 2,364 cells/L. Based on the average phytoplankton abundance at each station, the value obtained in July at Station 1 was 4,007 cells/L. The Water Pollution Index for Badak Beach waters in July and September 2024 was 55.20-64.47, indicating that Badak Beach waters are heavily polluted.

Keywords: Badak Beach, Phytoplankton, Pollution Index, Water Quality.