

ABSTRAK

Distribusi nutrisi sebagai aspek penting pada indikator kualitas perairan dalam mempengaruhi keseimbangan ekosistem dan kehidupan biota air. Perairan Pesisir Utara Pekalongan dihadapkan dengan permasalahan rob, dimana rob ini mengakibatkan adanya perubahan tatanan lahan dan kerusakan mangrove yang dapat menyebabkan perubahan komposisi nutrisi di dalam perairan. Penelitian ini bertujuan untuk mengetahui distribusi makronutrien (nitrat, fosfat, dan silikat) di Pesisir Utara Pekalongan yang dipengaruhi oleh berbagai sumber serta status dan implikasi dari kualitas perairan di Pesisir Utara Pekalongan berdasarkan metode CCME-*Water Quality Index*. Pengambilan sampel dilakukan dengan menggunakan metode *simple random sampling*. Penelitian dilakukan pada bulan Januari 2023. Analisis data yang digunakan adalah analisis menggunakan spektrofotometer UV-Vis untuk memperoleh kadar makronutrien, analisis PCA untuk mengetahui keterkaitan antar parameter, dan analisis status kualitas perairan menggunakan metode CCME-*Water Quality Index*. Hasil penelitian diperoleh kadar nitrat, fosfat, dan silikat secara berturut-turut di Sungai Mrican berkisar 0,3894-1,4162 mg/L; 0,0137-2,5485 mg/L; dan 0,2493-2,5485 mg/L; di Sungai Pencongan berkisar 0,2358-0,5792 mg/L; 0,0154-0,077 mg/L; dan 0,2884-1,7081 mg/L; serta di Pantai Wonokerto berkisar 0,9799-1,3431 mg/L; 0,45-0,8319 mg/L; dan 1,3792-2,0325 mg/L. Nilai kualitas perairan di Sungai Mrican sebesar 50,6382 berstatus kurang; Sungai Pencongan sebesar 59,3916 berstatus kurang; dan Pantai Wonokerto sebesar 18,8386 berstatus buruk. Kondisi ini disebabkan karena tingginya masukan dari aktivitas di sekitar pesisir, sehingga dapat berimplikasi terhadap pencemaran perairan.

Kata kunci: Distribusi Nutrien, Kualitas Perairan, Implikasi, Pekalongan

ABSTRACT

Nutrient distribution is an important aspect of water quality indicators in influencing the balance of ecosystems and aquatic biota. The waters of Pekalongan's North Shore are faced with the problem of tidal flooding, which results in changes in land use and mangrove damage that can cause changes in nutrient composition in the waters. This study aims to determine the distribution of macronutrients (nitrate, phosphate, and silicate) in the North Coast of Pekalongan influenced by various sources as well as the status and implications of water quality in the North Coast of Pekalongan based on the CCME-Water Quality Index method. Sampling was conducted using simple random sampling method. The research was conducted in January 2023. The data analysis used was analysis using a UV-Vis spectrophotometer to obtain macronutrient levels, PCA analysis to determine the relationship between parameters, and analysis of water quality status using the CCME-Water Quality Index method. The results obtained nitrate, phosphate, and silicate levels in Mrican River each ranged from 0.3894-1.4162 mg/L; 0.0137-2.5485 mg/L; and 0.2493-2.5485 mg/L; in the Pencongan River each ranged from 0.2358-0.5792 mg/L; 0.0154-0.0779 mg/L; and 0.2884-1.7081 mg/L; and in Wonokerto Beach ranged from 0.9799-1.3431 mg/L; 0.45-0.8319 mg/L; and 1.3792-2.0325 mg/L. The water quality value in Mrican River is 50.6382 with poor status; Pencongan River is 59.3916 with poor status; and Wonokerto Beach is 18.8386 with poor status. This condition is caused by high input from activities around the coast, so that it can have implications for water pollution.

Keywords: Nutrient Distribution, Water Quality, Implications, Pekalongan