RINGKASAN

MONA GUSLO SIBORO. Makrozoobentos sebagai Bioindikator Pencemaran di Perairan Estuari Tanjung Lanjut, Kota Tanjungpinang. Dibimbing oleh TRI APRIADI dan WINNY RETNA MELANI.

Perairan Tanjung Lanjut merupakan salah satu kawasan pesisir yang berada di Kota Tanjungpinang. Kawasan ini termasuk peralihan antara perairan tawar dan laut yang sangat dipengaruhi oleh pasang surut serta aktivitas manusia di sekitarnya seperti limbah domestik, dan transportasi kapal kecil yang memengaruhi kondisi lingkungan perairan. Tujuan penelitian ini untuk mengetahui kelimpahan dan indeks ekologi makrozoobentos, tingkat pencemaran perairan berdasarkan keberadaan makrozoobentos, serta hubungan antara kelimpahan makrozoobentos dengan parameter fisika-kimia perairan. Penelitian dilakukan di Perairan Estuari Tanjung Lanjut pada bulan Februari 2026. Pengambilan sampel menggunakan Ekman grab 30×30 cm dengan metode *systematic random sampling* sebanyak 30 titik sampel. Berdasarkan hasil identifikasi jenis makrozoobentos yang ditemukan di Perairan Tanjung Lanjut sebanyak 46 genera yang terdiri dari 6 kelas diantaranya yaitu, kelas Gastropoda (19 genera), Bivalvia (5 genera), Malacostraca (5 genera), Polychaeta (10 genera), Clitellata (6 genera), Sipunculidae (1 genus) dengan nilai kelimpahan rata-rata makrozoobentos sebesar 67,41 ind/m^2. Nilai indeks ekologi makrozoobentos di Perairan Tanjung Lanjut dengan indeks keanekaragaman (3,31) kategori "tinggi" menunjukkan ekosistem tersebut cenderung seimbang, indeks keseragaman (0,86) kategori "tinggi" menunjukkan nilai persebaran makrozoobentos yang merata, indeks dominansi (0,06) kategori "rendah" menunjukkan tidak terdapat genus yang mendominasi dalam komunitas makrozoobentos tersebut. Berdasarkan parameter fisika-kimia perairan di Perairan Tanjung Lanjut dapat dilihat bahwa kondisi perairan tersebut masih sesuai baku mutu air laut berdasarkan Peraturan Pemerintah Republik Indonesia No. 22 Tahun 2021 Lampiran VIII Peruntukan Biota Laut dan masih dapat mendukung kehidupan makrozoobentos di Perairan Tanjung Lanjut. Berdasarkan hasil perhitungan kriteria AMBI diketahui bahwa kualitas perairan di Tanjung Lanjut tergolong kategori "sedikit tercemar" dengan nilai (2,48) yang berarti kualitas perairan tersebut berpolusi bahan organik dan komunitas bentik yang tidak seimbang. Berdasarkan hasil uji korelasi *Spearman*, diketahui bahwa fraksi *mud* (lumpur) yang paling berpengaruh signifikan terhadap kelimpahan makrozoobentos di Perairan Tanjung Lanjut dengan nilai korelasi positif kuat (0,606) dan nilai p-value <0,001.

Kata kunci: Bioindikator, Kualitas Perairan, Makrozoobentos, Tanjung Lanjut

SUMMARY

MONA GUSLO SIBORO. Macrozoobenthos as Bioindicators of Pollution in the Tanjung Lanjut Estuary, Tanjungpinang City. Supervised by TRI APRIADI and WINNY RETNA MELANI.

The Tanjung Lanjut waters are one of the coastal areas in Tanjungpinang City. This area includes a transition between freshwater and marine waters that are strongly influenced by tides and human activities in the surrounding area such as domestic waste and small boat transportation that affect the condition of the aquatic environment. The purpose of this study was to determine the abundance and ecological index of macrozoobenthos, the level of water pollution based on the presence of macrozoobenthos, and the relationship between macrozoobenthos abundance and water physicochemical parameters. The study was conducted in the Tanjung Lanjut Estuary Waters in February 2026. Sampling used a 30x30 cm Ekman grab with a systematic random sampling method of 30 sample points. Based on the results of the identification of macrozoobenthos types found in Tanjung Lanjut Waters, there are 46 genera consisting of 6 classes, namely, Gastropoda (19 genera), Bivalvia (5 genera), Malacostraca (5 genera), Polychaeta (10 genera), Clitellata (6 genera), Sipunculidae (1 genus) with an average abundance value of macrozoobenthos of 67.41 ind/m2. The value of the macrozoobenthos ecological index in Tanjung Lanjut Waters with a diversity index (3.31) in the "high" category indicates that the ecosystem tends to be balanced, the uniformity index (0.86) in the "high" category indicates an even distribution of macrozoobenthos, the dominance index (0.06) in the "low" category indicates that there is no dominant genus in the macrozoobenthos community. Based on the physicochemical parameters of the waters in Tanjung Lanjut Waters, it can be seen that the condition of the waters is still in accordance with seawater quality standards based on Government Regulation of the Republic of Indonesia No. 22 of 2021 Appendix VIII Allotment of Marine Biota and can still support macrozoobenthos life in Tanjung Lanjut Waters. Based on the results of the AMBI criteria calculation, it is known that the water quality in Tanjung Lanjut is categorized as "slightly polluted" with a value of (2.48), which means the water quality is polluted by organic matter and an unbalanced benthic community. Based on the results of the Spearman correlation test, it is known that the mud fraction has the most significant effect on the abundance of macrozoobenthos in Tanjung Lanjut Waters with a strong positive correlation value (0.606) and a p-value <0.001.

Keywords: Bioindicators, Macrozoobenthos, Tanjung Lanjut, Water Quality