Hubungan Pencemaran Air dengan Keanekaragaman Udang di Perairan Sungai Bederak Terjun Kecamatan Medan Marelan Kota Madya Medan

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Abstrak

Penelitian ini bertujuan untuk mengetahui keadaan sifat fisikokimia perairan pada aliran Sungai Bederak, mengetahui keanekaragaman udang air tawar yang terdapat di aliran Sungai Bederak dan mengetahui hubungan fisikokimia air dengan keanekaragaman udang air tawar di aliran Sungai Bederak di Kelurahan Terjun, Kecamatan Medan Marelan. Pengukuran parameter fisika dilakukan langsung dilapangan, sedangkan pengukuran parameter kimia sampel air yang diamil dari setiap stasiun dibawa ke Laboratorium Badan Lingkungan Hidup Provinsi Sumatera Utara. Data yang diperoleh dari hasil pengukuran suhu berkisar 24 -28 ^{0}C, kecerahan berkisar 3 – 7 cm, pH berkisar 4,5 – 7,5, COD berkisar 15 – 19 mg/L, BOD berkisar 12 – 13 mg/L dan NO_3 berkisar 15 – 20 mg/L. 1. Kondisi sifat fisikokimia pada perairan Sungai Bederak pada parameter fisika seperti suhu belum melewati batas baku mutu kelas II, sedangkan tingkat kecerahan sudah tercemar dan menurut parameter kimia seperti pH sudah melewati batas baku mutu kelas II, COD belum melewati batas baku mutu kelas II, BOD sudah melewati batas baku mutu kelas II dan NO3 sudah melewati batas baku mutu kelas II yang ditetapkan pemerintahan. Pengambilan sampel udang dilakukan dengan menggunakan metode *purposive sampling* diambil dengan dengan 3 kali pengulangan dan diidentifikasi udang di Laboratorium Biologi FMIPA UNIMED. Dari penelitian didapat 3 famili Crustacea yakni Palaemonidae, Tetrasquilidae, Penaeidae. Nilai indeks keanekaragaman udang (H') berkisar antara 0,65 – 1,86. Hasil analisis korelasi menunjukan bahwa parameter fisika dan kimia yakni suhu 0,717, kecerahan 0,68, pH 0,65, COD 0,835, BOD 0,98, NO_3 0,86, memiliki hubungan terhadap keanekaragaman udang. Kontribusi hubungan suhu 51,4 %, kecerahan 46,2 %, pH 42,2 %, COD 69,7 %, BOD 96 %, NO_3 73,9 %.

Kata kunci : Fisikokimia, Udang, Keanekaragaman, Analisis Korelasi

The Relationship Between The Pollution of Water with The Diversity of Shrimp in Bederak Terjun River on Medan Marelan District of Medan City

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Abstract

This study aims to know the condition of water physicochemistry of Bederak River, to know the diversity of shrimp which contained in Bederak River and to know the relationship between water physicochemical with shrimp diversity in Bederak River in Urban Communities of Terjun, Marelan District. The physical parameter measurement was done directly in the field, while the measurement of chemical parameters of water sample which taken from each station was done in the Laboratory of Environment Agency, North Sumatera. The data were obtained from the temperature measurements ranged from 24 - 28 ^{0}C, the brightness ranged from 3 to 7 cm, the pH ranged from 4.5 to 7.5, the COD ranged from 15 to 19 mg / L, BOD ranged from 12 to 13 mg / L and NO3 ranged 15 - 20 mg / L. The condition of physicochemical properties in Bederak River waters on physical parameters such as temperature has not exceeded the standard quality limit of class II, while the brightness level has been contaminated and according to chemical parameters such as pH has exceeded the standard quality limit of class II, COD has not passed the standard quality limit of class II, BOD Beyond the limit of class II and NO_3 quality standards have exceeded the limit of class II quality standards set by the government. Shrimp sampling was done by *purposive sampling* method that was taken with 3 times of repetition and the shrimp was identified in Biology Laboratory of FMIPA UNIMED. As the result, there are 3 families of Crustacea, those are: Palaemonidae, Tetrasquilidae, and Penaeidae. The value of shrimp diversity index (H') ranged from 0.65 to 1.86. The result of correlation analysis shows that the physical and chemical parameters are temperature 0,717, brightness 0,68, pH 0,65, COD 0,835, BOD 0,98, NO_3 0.86 are relates to the diversity of shrimp. The contribution of each relation temperature 51.4%, brightness 46.2%, pH 42.2%, COD 69.7%, BOD 96%, NO_3 73.9%.

Keyword: Physicochemistry, Shrimp, Diversity, Correlation Analysis