

## Intisari

Penelitian ini bertujuan untuk mengetahui kualitas air Sungai Winongo. Data yang dikumpulkan berupa data fisik, kimia dan komunitas makrozoobentos. Pengumpulan sampel dilakukan sebulan sekali dari Mei hingga Juli 2016. Tiap jenis sampel makrozoobentos dihitung dan ditimbang kemudian diidentifikasi dengan menggunakan buku identifikasi seperti *Fresh water biology* (1963) dan *Invertebrates of streams and rivers* (1997). Data fisik dan kimia dianalisis secara deskriptif, sedangkan data makrozoobentos dianalisis dengan menggunakan indeks keanekaragaman Shannon-Wiener, indeks dominansi Simpson, indeks pemerataan Evenness dan indeks rasio kelimpahan-biomassa Warwick dan Clarke. Penentuan kualitas air dilakukan dengan scoring terhadap nilai terukur dari parameter-parameter terkait, seperti temperatur air, derajat keasaman air (pH), kandungan oksigen terlarut (DO), kandungan bahan organik, komposisi larva insekta Ephemeroptera Plecoptera Trichoptera (EPT), indeks keanekaragaman Shannon-Wiener, indeks pemerataan Evenness, indeks dominansi Simpson serta indeks rasio kelimpahan-biomassa makrozoobentos. Jumlah nilai scoring berkisar antara 0 hingga 210 dan terbagi menjadi 5 kelas dari kategori sangat buruk hingga sangat baik. Hasil penelitian menunjukkan bahwa kisaran nilai parameter fisika, kimia dan biologi dari keseluruhan stasiun selama tiga bulan yaitu: parameter suhu (26-29)°C; kecepatan arus (0,09-0,77) m/dt; derajat keasaman (6,60-7,15); kandungan oksigen (1,05-7,00) mg/L; kandungan bahan organik (1,27-21,51) mg/L; komposisi EPT (0-4) jenis individu; indeks keanekaragaman (0,84-2,06); indeks dominansi (0,17-0,64); indeks pemerataan (0,32-0,87); dan indeks rasio kelimpahan-biomassa (-11,44x10<sup>-19</sup> s/d 8,91x10<sup>-19</sup>). Kisaran jumlah skor 81 hingga 122, sehingga penelitian ini menyimpulkan kondisi kualitas air Sungai Winongo berada pada kategori buruk hingga cukup berdasarkan modifikasi baku mutu air kelas II.

**Kata kunci:** kualitas air, makrozoobentos, scoring, Sungai Winongo

## Abstract

The purpose of this study was to determine water quality in Winongo river. Data were collected in form of physical, chemical and macrozoobenthos community data. Samples were collected monthly from May to July 2016. The number each macrozoobenthos samples were measured and then identified with identification guide, like Fresh water biology (1963); and Invertebrates of streams and rivers (1997). Physical and chemical data was analized descriptively, while biological data was analyzed using the Shannon-Wiener diversity index, Simpson dominance index, Evenness index and abundance-biomass comparison of Warwick and Clarke. Determination of water quality was done by scoring the measured values of the parameters involved, such as water temperature, pH, DO, organic matter, the composition of Ephemeroptera Plecoptera Trichoptera (EPT), Shannon-Wiener diversity index, Evenness index, Simpson dominance index and abundance-biomass ratio index. Total score value was ranged from 0 to 210, and divided into 5 classes from very poor to very good. The results showed that the range of some parameters values such as physical, chemical and biological of the whole station for three months, was: temperature (26-29)°C; water velocity (0.09 to 0.77)m/s; water acidity (6.60 to 7.15); dissolved oxygen (1.05 to 7.00)mg/L; organic matter content (1.27 to 21.51)mg/L; composition of EPT (0-4) species; diversity index (0.84 to 2.06); dominance index (from 0.17 to 0.64); evenness index (0.32 to 0.87); and the index of abundance-biomass ratio ( $-11.44 \times 10^{-19}$  s/d  $8.91 \times 10^{-19}$ ). The total score was ranged from 81 to 122, so the water quality was categorized into poor to moderate as the modified second class of water quality standard role.

**Keywords:** water quality, macrozoobenthos, scoring, Winongo river