

**MONITORING KEANEKARAGAMAN ULAR (SUBORDO: SERPENTES)
DI BAGIAN HULU SUNGAI CODE, DAERAH ISTIMEWA YOGYAKARTA
DENGAN METODE E-DNA**

Rahma Izzati
(18/426492/BI/10084)

Pembimbing: Donan Satria Yudha, S.Si., M.Sc

INTISARI

Penelitian mengenai keanekaragaman jenis ular di bagian hulu Sungai Code telah dilakukan di tahun 2012 dan 2017. Penelitian tersebut menggunakan metode sampling konvensional atau observasi langsung di lapangan yaitu *Visual Encounter Survey*. Guna memonitor keanekaragaman ular di sungai Code, maka pada penelitian kali ini, dilakukan kembali monitoring dengan menggunakan metode yang berbeda, yaitu *environmental DNA*. Dalam air sungai sendiri terkandung berbagai macam DNA terlarut dari organisme. DNA ini berasal dari berbagai bagian dari tubuh organisme seperti kulit, urin, dan feses. Berdasarkan hal tersebut, maka dilakukan monitoring keanekaragaman ular di Sungai Code. Penelitian ini bertujuan untuk mengetahui keanekaragaman ular di Sungai Code berdasarkan e-DNA dan membandingkan dengan penelitian sebelumnya, serta mengetahui efektifitas penggunaan e-DNA dalam monitoring ular di Sungai. Sampel air dari sungai diambil untuk kemudian difilter. Setelah itu, sampel tersebut diekstraksi dan diamplifikasi. DNA yang didapat kemudian dielektroforesis dan hasil dari elektroforesis tersebut dianalisis. Pengelompokan taksa dilakukan menggunakan MIDORI dengan metode RDP Classifier. Hasil analisis berupa 5 jenis ular dari 5 familia berbeda yang sebagian besar memiliki distribusi di luar Indonesia. Hasil ini mengalami kenaikan dibandingkan dengan penelitian sebelumnya. Namun, hasil tersebut memiliki nilai *consensus* yang rendah, sehingga diragukan kebenarannya. Penggunaan e-DNA dinilai kurang efektif untuk monitoring ular di Sungai.

Kata kunci: monitoring, keanekaragaman, ular, Sungai Code, e-DNA

**DIVERSITY MONITORING OF SNAKES (SUBORDER: SERPENTES)
IN THE UPSTREAM PART OF CODE RIVER, SPECIAL REGION OF YOGYAKARTA
USING E-DNA METHODS**

Rahma Izzati
(18/426492/BI/10084)

Supervisor: Donan Satria Yudha, S.Si., M.Sc

ABSTRACT

Research on the diversity of snakes on the upstream part of Code River had been done in 2012 and 2017. Method used in the research was direct capture or direct observation on the field using Visual Encounter Survey. To monitor the snakes' diversity on the Code River, on this research we use different method, which is environmental DNA. River water contains various kinds of dissolved DNA from organisms. The DNA comes from various parts of the organism's body such as skin, urine, and feces. Based on this, monitoring the diversity of snakes in the Code River was carried out. The aims of this research were to determine the diversity of snakes in the Code River based on environmental DNA, to compare with the previous research, and knowing the effectiveness of using e-DNA for monitoring snakes in rivers. Water samples from the river were taken for filtering. After that, the sample will be extracted and amplified. The DNA obtained was then electrophoresed and the results were analyzed. Taxon assignment was done using MIDORI server with RDP Classifier method. The result obtained were 5 species of snakes from 5 different families, most of them were not from Indonesia. There was an increase of taxon richness compared to the previous study. However, this result has a low consensus value, so the taxon assignment is uncertain. The use of e-DNA is considered less effective for monitoring snakes in rivers compared to conventional sampling method.

Keywords: Monitoring, Diversity, Snakes, Code River, environmental DNA.