

FIELD WORK CPalim Telaga Balekambang Dieng

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Molecular research in Indonesia is still considered expensive. For example, diatom data, although is one of the key species determining the health of water, the diatom molecular database from Indonesia is still very limited.

Research using a molecular approach, such as DNA Barcoding is now being developed because it provides a fast and massive method for detecting organisms from the environment or identifying cryptic species. Newer methods with environmental DNA can also detect the presence of organisms without having to see the organisms directly. This is important because some important organisms in the environment are very difficult to detect directly.

Diatoms have an important role in the aquatic ecosystem and had been used widely for water quality assessment. Diatoms' morphology is usually used for biomonitoring programs. Molecular technology development, such as environmental DNA (eDNA) recently provided a new approach for diatom identification fastly and accurately. This research aims to identify the diatom community structure from Balekambang Lake using eDNA metabarcoding in line with the morphological method and to assess the applicability of eDNA metabarcoding as a reliable tool for biomonitoring assessment. However, implementing this method has its own challenges, as protocols and methods still vary between laboratories and require standardization to define good methodological uniformity. This study focuses on diatoms in Balekambang Lake, one of the ancient lakes and has a historical human settlement at Dieng next to Arjuna Temple. The Lake ecosystem plays a unique role in flood protection, irrigation, and habitat for biodiversity. Hopefully, this initial research for eDNA will provide protocols of sampling, molecular identification, marker determination, and method analysis for diatoms in Indonesia. This study aims to identify the epipelagic diatom community in the Balekambang Lake, Dieng Plateau, Central Java, Indonesia. In future research, this method will be used as an additional approach to assessing the diatom community in freshwater, brackish, and saltwater in Indonesia. This study aims to identify the epipelagic diatom community in the Balekambang Lake, Dieng Plateau, Central Java, Indonesia. In future research, this method will be used as an additional approach to assessing the diatom community in freshwater, brackish, and saltwater in Indonesia.

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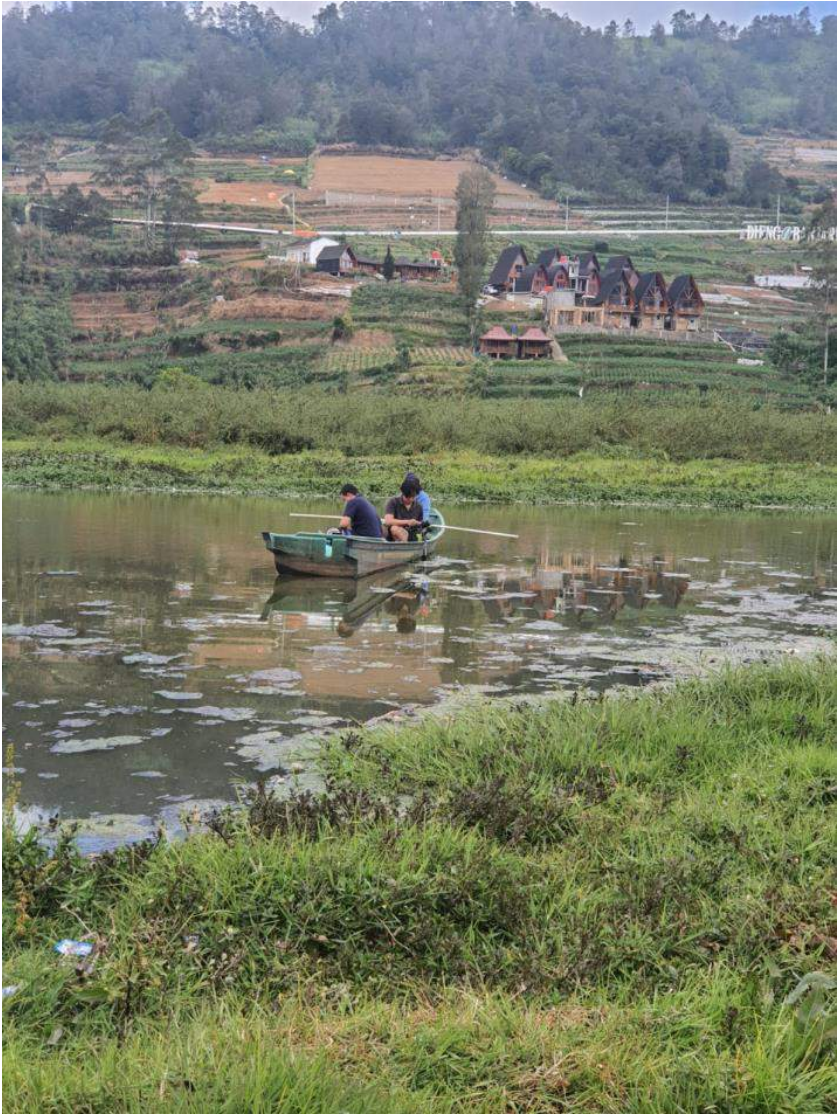
Sediment samples for eDNA



water quality and plankton



Vegetation Analysis



STOCK CARBON ABOVE GROUND



ANALYSIS CARBONATE AND CHLOROPHYLL-A



Before

and

after

