

DNA BARCODING FOR THE ASSESSMENT OF THE TAXONOMY OF THE FISH FROM CHILIKA LAGOON OF INDIA, ONE OF THE WORLD'S BIODIVERSITY HOTSPOTS.

Rahul Suryawanshi¹, Rohidas Jogdand¹, and Dinesh Nalage¹

¹Dr Babasaheb Ambedkar Marathwada University

August 30, 2023

Abstract

DNA barcoding is a technique in which species identification is performed by generating DNA barcodes from a small fragment of the mitochondrial genome. Here, molecular methods were used for assessment of 226 barcodes belonging to 83 fish species from 83 genera, 39 families and 21 orders of fishes with the average divergence within a species is 0.10%, 13.57% within a genus, and 17.33% within a family with 97–100% identity with comparison to the Genbank database and BOLD of the Chilika lagoon India, using, Barcode gap analysis, barcode index number and automatic barcode gap discovery, these methods had their potential to discriminate 97.53%, 93.90% and 95.06%, of species respectively. This is the first effort to generate the DNA barcode reference library of freshwater fishes from Chilika lagoon of India, one of the world's biodiversity hotspots. These findings will contribute to the barcode database of global marine fish species identification, provide baseline data for fishes in Chilika Lagoon waters based on the CO1 region, and serve educational purposes in universities, research institutes, fishery managers, and fish stock assessment. The Barcode Index Number (BIN) discordance report showed that 226 specimens represented 83 BINs, of which 73.49% were taxonomically concordant and 26.50% were singletons and no discordant BIN found in our dataset.

Hosted file

Main Document.docx available at <https://authorea.com/users/657985/articles/662510-dna-barcoding-for-the-assessment-of-the-taxonomy-of-the-fish-from-chilika-lagoon-of-india-one-of-the-world-s-biodiversity-hotspots>

Hosted file

Figure.docx available at <https://authorea.com/users/657985/articles/662510-dna-barcoding-for-the-assessment-of-the-taxonomy-of-the-fish-from-chilika-lagoon-of-india-one-of-the-world-s-biodiversity-hotspots>