ARPHA Conference Abstracts 8: e179452
doi: 10.3897/aca.8.e179452

OPEN ACCESS

Conference Abstract

Cryptic Diversity and Taxonomic Ambiguities in *Carassius carassius* from Czech Wetlands: Implications for Conservation

Pradeep Kumkar‡, Chandani R. Verma‡, Kiran Thomas§, Marek Šmejkal§, Dunja K. Lamatsch|, Lukáš Kalous‡

‡ Czech University of Life Sciences Prague, Prague, Czech Republic
§ Biology Centre of the Czech Academy of Sciences, České Budějovice, Czech Republic
| University of Innsbruck, Mondsee, Austria

Corresponding author: Pradeep Kumkar (kumkar@af.czu.cz)

Received: 23 Nov 2025 | Published: 30 Dec 2025

Citation: Kumkar P, Verma CR, Thomas K, Šmejkal M, Lamatsch DK, Kalous L (2025) Cryptic Diversity and Taxonomic Ambiguities in *Carassius carassius* from Czech Wetlands: Implications for Conservation. ARPHA Conference Abstracts 8: e179452. https://doi.org/10.3897/aca.8.e179452

Abstract

The crucian carp (*Carassius carassius*) is a native freshwater fish and an important indicator of wetland ecosystem health across Central Europe. However, its populations are increasingly threatened by habitat degradation and hybridization with non-native congeners. In this study, we present a mitochondrial cytochrome b (cytb) dataset from *C. carassius* populations sampled across various tributaries of the Danube and Elbe River basins in Czechia to evaluate genetic diversity and taxonomic clarity within the Carassius genus complex. Our preliminary results reveal multiple distinct mitochondrial haplotypes within nominal *C. carassius*, highlighting the presence of cryptic genetic diversity. These findings underscore the urgent need for integrative taxonomic approaches to support accurate species identification and conservation management. We advocate for the use of molecular tools in conservation monitoring programs to safeguard the genetic integrity of native *C. carassius* populations in vulnerable wetland habitats.

© Kumkar P et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Keywords

Crucian carp, Integrative taxonomy, Genetic structure, Native fish populations

Presenting author

Pradeep Kumkar

Grant title

This study was supported by the Ministry of Education, Youth and Sports of the Czech Republic under grant MŠMT 8J24AT008.

Conflicts of interest

The authors have declared that no competing interests exist.