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Abstract book

"Shaping aquatic science for the future we envision"

Preliminary results of genetic analysis of *Dreissena polymorpha* (zebra mussel) populations in northern and central Italy

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The zebra mussel (*Dreissena polymorpha* Pallas, 1771), listed among the world's 100 worst invasive alien species, was first documented in Italy in 1973 in Lake Garda. Since then, it has progressively expanded its range across northern and central Italian freshwater systems. As part of the BIOALPEC Project (Biodiversity of Alpine Ecosystems in a Changing World), supported by the National Biodiversity Future Centre (NBFC, Spoke 3), this study aims to characterize the genetic diversity of non-indigenous bivalve molluscs using mitochondrial cytochrome c oxidase subunit I (COI) gene sequencing (mtDNA COI). We report preliminary results based on specimens of *D. polymorpha* collected from seven lakes in northern Italy (Garda, Iseo, Ledro, Caldonazzo, Levico, Lases, and Monticolo) and one lake in central Italy (Trasimeno). Phylogenetic analysis revealed that individuals from Lake Monticolo clustered with Eastern European lineages, including samples from Croatia, the Caspian region, Moldova, and Hungary. In contrast, populations from the remaining lakes showed closer genetic affinity to Central European, Canadian, and North American clades. Our investigation contributed to integrating and updating the distribution and genetic characteristics of *D. polymorpha* in the Italian peninsula. This investigation is part of a more considerable effort aimed at evaluating the present status of the distribution of invasive molluscs in Italian water bodies.