



Conference Abstract

Establishing the first DNA barcode reference library for freshwater decapod species (Crustacea: Decapoda) in Republic of North Macedonia

Valentina Slavevska Stamenkovic[‡], Jelena Hinic[‡], Michal Grabowski^{§,§}, Tomasz Mamos[§], Leona Lovrenčić[¶], Mišel Jelić[¶], Goran Klobučar[¶], Ivana Maguire[¶]

[‡] Institute of Biology, Faculty of Natural Science and Mathematics, Ss. Cyril and Methodius University, Republic of North Macedonia, Skopje, Yugoslavia

[§] Dept. Invertebrate Zoology & Hydrobiology, University of Lodz, Lodz, Poland

[¶] Department of Biology, Faculty of Science, University of Zagreb, Croatia, Zagreb, Croatia

[¶] Varaždin City Museum, Entomological Department, Varaždin, Croatia

Corresponding author: Valentina Slavevska Stamenkovic (vstamen14@gmail.com)

Received: 26 Feb 2021 | Published: 04 Mar 2021

Citation: Slavevska Stamenkovic V, Hinic J, Grabowski M, Mamos T, Lovrenčić L, Jelić M, Klobučar G, Maguire I (2021) Establishing the first DNA barcode reference library for freshwater decapod species (Crustacea: Decapoda) in Republic of North Macedonia. ARPHA Conference Abstracts 4: e65138. <https://doi.org/10.3897/aca.4.e65138>

Abstract

The freshwater ecosystems in the Republic of North Macedonia are considered as biodiversity hotspot on the European level since they provide diverse habitats that correspond with the complex of ecological preferences that many species require. This specially applies to the freshwater crustaceans that, unfortunately, have never been in the focus of a continuous research. In R. North Macedonia, freshwater crustaceans usually inhabit ecosystems exposed to negative anthropogenic impact. Thus, some species may become extinct presenting an irreversible loss for the Macedonian natural heritage. Although DNA barcoding, as a highly effective tool for fast species detection, is already a routine protocol in many taxonomical studies all over the world, there is still no official national DNA barcoding initiative in Republic of North Macedonia. This study employs DNA barcoding based on the ca. 650-bp long standard fragment of the mt *COI* gene of *Astacus astacus*, *Austropotamobius torrentium*, *Potamon fluviatile* and *Potamon ibericum*

previously identified based on morphological characters, collected from different parts in R. North Macedonia. The ability of the DNA barcoding to rapidly identify all species has been proven. Our research presents the first comprehensive study that employs DNA barcoding as a molecular tool in decapod taxonomy in Republic of North Macedonia, giving the first attempt to establish DNA barcode reference library for freshwater decapod species in the country. We hope that further application of this approach will lead to the construction of DNA barcode reference library for different aquatic biota in the country. Such a library will find purpose in effective and modern bioassessment protocols as well as in phylogenetic research detecting interpopulation genetic variability.

Keywords

molecular taxonomy, freshwater decapods, mtCOI, DNA

Presenting author

Jelena Hinic, Msc

Presented at

1st DNAQUA International Conference (March 9-11, 2021)