



# ABSTRACT BOOK



## SEFS11 Abstract book

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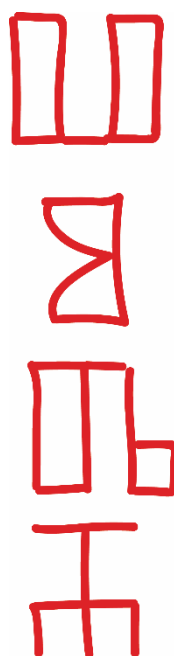
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## RS15\_O12\_Aquatic survey in the driest European country: Building a public aquatic macroinvertebrate DNA barcode reference library for Malta

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Maltese Islands are very poor in surface freshwaters due to geological and climatic conditions and various anthropogenic activities. In addition to the very few natural but highly intermittent streams, some man-made or strongly modified waterbodies (e.g. artificial ponds and canals, reconstructed wetlands) and rock pools represent the aquatic habitats. The aquatic macroinvertebrate fauna is little known and our knowledge is highly unbalanced: while hundreds of records are available on Odonates, almost nothing is known from other groups. Although the taxonomy, ecology and water quality assessment are increasingly moving towards the use of DNA-based methods, there was no aquatic invertebrate barcoding activity in Malta, so far. The aims of this study were to collect new records, revise recent knowledge on freshwater macroinvertebrate fauna of Malta using traditional and novel methods, validate species occurrences by DNA records, explore unknown species and finally to provide a checklist and a barcode reference library as powerful basis for DNA-based water quality assessment. In 2018, we visited 80 sampling sites on all the three bigger islands, morphological identification of Crustacea, Mollusca, Ephemeroptera, Odonata, Heteroptera, Coleoptera, Trichoptera and Diptera: Chironomidae resulted in occurrences of more than 115 species. 45 species have been reported here for the first time from Malta. All the species has now been subjected to DNA extraction, amplification and sequencing of the COI barcoding marker in order to build the database, validate species occurrences and explore the presence of plausible cryptic taxa. Project was supported by EFOP-3.6.1.-16-2016-00004, 20765-3/2018/FEKUTSTRAT and DNAqua-NET CA15219 STSM39774 grants.

