

## Report on the outcomes of a Short-Term Scientific Mission<sup>1</sup>

Action number: CA18221

Grantee name: Trypidaki Eirini

### **Details of the STSM**

Title: Improvements and updates on the Atlas of Amphibians and Reptiles of Europe

Start and end date: 15/03/2023 to 15/06/2023

### **Description of the work carried out during the STSM**

During the STSM, the primary focus was to conduct a thorough analysis of spatial data on European herpetofauna as an extension of working group 2. Our objective was to assess the risk of exposure in the environment for herpetological fauna and establish a framework for risk assessment at the ecosystem level.

First goal was to compile all new distributional data from the Atlas of European Amphibians and Reptiles for amphibian and reptile species native to Europe from online depositories, using the updated species list provided by Speybroeck in 2020. This compilation provided us with a comprehensive and up-to-date reference for our study.

To gather occurrence data, a systematic download of data from online repositories such as GBIF, iNaturalist, VertNet, OBIS, and iDigBio was conducted. These platforms proved invaluable as they contain a vast amount of occurrence records contributed by researchers, citizen scientists, and institutions. We applied data cleaning procedures to eliminate duplicate records, rectify errors or inconsistencies, and standardize the data format and taxonomy. This ensured the quality and integrity of the collected data. To validate the reliability of the occurrence data, we cross-referenced it with reputable sources such as previously published distribution maps of the NA2re project or atlases. This process allowed us to compare the occurrence records with existing knowledge and the expertise of herpetologists, enabling the identification of any potential errors or outliers.

Simultaneously, we created a comprehensive database encompassing information about herpetologist societies and experts. This database served as a valuable resource for gathering additional data that may not be readily available in online repositories. We compiled relevant datasets and initiated contact with individuals or organizations through email or online forums, kindly requesting their contribution of occurrence data to enhance the comprehensiveness of our research.

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<sup>1</sup> This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.

### **Description of the STSM main achievements and planned follow-up activities**

The STSM successfully achieved its goals of compiling updated distributional data, cleaning and validating occurrence records, and improving the efficiency of species mapping. These achievements significantly contribute to the objectives of the Action by enhancing our knowledge of European herpetofauna distribution and assessing the risk of exposure for these species in their environment.

One of the major tasks of the STSM was the compilation of species within the defined study area. This comprehensive compilation resulted in the identification of 264 species, a reduction from the 301 species defined by SEH, as well as the discovery of 38 new species compared to the Atlas of 2014. Notably, two of these newly identified species are introduced. Another achievement was the gathering and cleaning of occurrence data from reliable online repositories. This thorough data cleaning process ensured the quality and reliability of our dataset, further enhancing the accuracy of our analyses. Moreover, the development of an efficient species mapping script significantly reduced the time required for mapping from 4 hours to just 14 minutes, improving our overall workflow and productivity. Additionally, the establishment of a comprehensive database of herpetologist societies and experts is a useful tool. This database will serve as a valuable resource for future research, collaborations, and data contributions. By fostering relationships with herpetology experts and societies, the comprehensiveness and accuracy of our dataset can be enhanced but also promote ongoing collaboration and knowledge exchange in the field.

To ensure the continuity of our work, all the collected and created data, including points, sources, and scripts, were organized and packed in an external drive. This compilation of resources will be readily available for future STMS candidates.

Overall, the current STSM has extended and strengthened collaborations between Portugal, Greece, and other COST Partner Countries and has opened new opportunities for future research and partnerships.