SHORT TERM SCIENTIFIC MISSION (STSM)
SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA16224
STSM title: PAN-EUROPEAN ANALYSIS OF THE SPATIAL PATTERNS OF CONTAMINATION BY MERCURY, LEAD AND RODENTICIDES IN THE TAWNY OWL
STSM start and end date: 15/03/2022 to 05/04/2022
Grantee name: Tiago de Castro Brandão
Grantee home institution: Universidade de Évora
Host name: Rafael Mateo Soria
Host institution: Instituto de Investigación en Recursos Cinegéticos

PURPOSE OF THE STSM

(max.200 words)

This STSM aimed at contributing to the reporting of the Proof of Concept of the COST-Action ERBFacility. The purpose of the STSM was organizing, processing and analysing the data collected and compiled by the project previously. The goal of analysing this data has been to isolate the presence of contaminants in the environment from other variables that may influence contaminant concentration in Tawny Owls. This information allowed us, using concentration levels in Tawny Owl livers as proxy, to identify spacial and temporal trends in the presence and concentration of contaminants in the environment.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSM

(max.500 words)

The applicant was in charge of filling missing information on the database as it was given by the partners of the project, as well as standardize and, when appropriate, categorize the data so that it can be further processed and analysed on statistical analysis software. With the data, the applicant created resources, such as tables, graphs and maps to summarize the data, as well as help to visualize the results for the final reports of the project. Finally, the applicant analysed the data by using statistical tests and testing models in order to understand how the several contextual variables (cause of death, age of individual, geographic region, among others) that were recorded with each sample, could affect the presence and/or concentration of contaminants recorded in each individual.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

(max. 500 words)

In addition to processing the database so that it can be analysed, the applicant has created tables and graphs that serves to summarize and visually represent the compilled data for the project reports. Additionally, the applicant was able to assess if and how contextual variables affected the presence of contaminants in the samples. For example, it was found that females and adults (age > 1 year) tend have higher concentrations of Second Generation Anticoagolant Rodenticides than males and juveniles, respectively. The applicant produced results regarding the effects of several factors on the levels of 3 focal contaminant groups, using the tawny owl as focal species. These results demonstrate the relevance of analysing contaminant levels at the pan-European scale using raptors.
The geographical patterns found from the analyses have been incorporated in the report of the Proof-of-concept, that will be part of the final report of the COST-Action.

FUTURE COLLABORATIONS (if applicable)

(max. 500 words)

The Proof of Concept indicates the usefulness of Tawny Owls (and possibly other raptors) for large scale monitoring of environmental contaminants. These results will contribute largely to involve fieldworkers, collections and labs across Europe to maintain and create more collaborations among themselves for the purpose of contaminant biomonitoring.
During this STSM, the applicant has had the opportunity to work with the team of the host institution, but also to get to know several participants in the COST-Action, which may lead to future collaborations.