Speaker's name: Shaquille Matthys

Affiliation (Department and Institution): Conservation Biology, Institute of Ecology and Evolution

List of authors: Shaquille Matthys, Charlotte Ducotterd, Sylvain Ursenbacher, Benedikt Schmidt, Stefano Canessa

Multi-criteria assessment of control methods for the invasive *Trachemys scripta* in Switzerland

Invasive alien species (IAS) are a major cause of biodiversity loss, impacting endemic species via predation, competition for resources, habitat alteration and hybridization. There are numerous approaches to control IAS, but their success can vary widely depending on the target species and management context. A formal evaluation of different methods is helpful when dealing with limited resources and complex ethical implications of lethal and non-lethal control methods.

This study focuses on control methods for the pond slider Trachemys scripta, one of the 100 most invasive species according to the IUCN. The presence of T. scripta can have negative ecological impacts to native European pond habitats, particularly through competition with the European pond turtle (Emys orbicularis). In Switzerland the species already occurs and reproduces in several locations.

Our project assesses some common methods for T. scripta control in Switzerland, in terms of biological effectiveness, costs and welfare implications. For effectiveness, we have built a population model to project T. scripta population dynamics under different control methods, using a mix of existing data from previous projects and novel collected data. Based on the modelling results, we then estimate the total management costs for each method. Finally, for each control method we are collecting information about the physical conditions of turtle capture, transportation, and captivity; here we present preliminary results and the framework for this welfare assessment.

Through this assessment, we aim to facilitate rational planning, balancing ethical and financial constraints against biological evidence, allowing optimal protection of native species.