PROJECT FACTSHEET

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CAMPHIBIAN

Automating the observation of amphibians by the use of an underwater camera trap, and assess its value for the biodiversity monitoring.

Inspiration

Estimating the status of animal populations and the composition of ecological communities is not only important for gaining ecological knowledge, but it also provides key information on global biodiversity loss. Assessments of biodiversity changes and their underlying drivers such as those carried out by IPBES largely rely on the development of indicators that are based on local information reflecting the changing state of e.g. populations or ecological communities.

Reliable survey and monitoring methods are needed to collect such data that feeds into environmental research and policy support. As an important species group showing steep declines worldwide, amphibians are frequently included in such biodiversity indicators, but available methods are limited to document changes in their populations or communities.

During a former FNR-funded PoC project (PoC17/12250595), LIST prototyped an underwater camera trap - NEWTRAP- automating the production of images of underwater organisms (especially newts) and a web application -NEWTRAP Manager-to facilitate the management of images and metadata collected by NEWTRAP devices. An approach based on Artificial Intelligence (AI) automates image analysis and interpretation.

Innovation

In the CAMPHIBIAN project, NEWTRAP will be technologically improved to become more versatile and will be scientifically challenged to assess its added value for further exploitation as a user-friendly freshwater wildlife monitoring method.

Field and lab experiments will be carried out to test whether NEWTRAP offers a reliable and robust approach to optimise the detection of hardly surveyed amphibian species and to document their population size and dynamics. The CAMPHIBIAN project will bring NEWTRAP closer to a fully-fledged version through a partnership between LIST and NHBS.

Impact

The ability to automate amphibian field observations will greatly improve the well-being of observed individuals and their habitats by avoiding any live trapping and handling of individuals typically associated to standard survey methods.

NEWTRAP will be more easily deployed on the field, allowing to survey a higher number of sites, over a longer period of time, and with a higher temporal resolution than standard methods.

Higher standardisation of field observations also allows improved AI-based processing methods and their centralisation to produce essential well formatted databases for large scale and global change studies.

The technological transfer to be operated during the CAMPHIBIAN project will allow to make NEWTRAP devices available for field observers.

Partners

NHBS (UK)

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