BIG_PICTURE: Developing data management and analytical tools to integrate and advance professional and citizen science camera-trapping initiatives across Europe.

The access to large volumes of robust and harmonised monitoring data from large spatial and temporal scales is one of the key prerequisites to address the current biodiversity crisis. An efficient and timely integration of such data allows an assessment of current trends, the elucidation of drivers, reaction to emerging threats and an evaluation of the success of management actions. However, multiple obstacles hamper the collection and use of such data. This project aims to address several of these to enhance the availability of data already being collected across Europe during the last 10-15 years. Working with the leading researchers, citizen science groups and stakeholders involved in **camera trapping** (**CT**) of wildlife we aim to identify, and then overcome, the legal, institutional, social, technical and practical barriers to processing, annotating, organising and sharing the vast amounts of CT data that are being collected every day across the continent. The development of digital CTs in the last decade has revolutionised both professional and citizen-scientist collection of data on a broad range of terrestrial mammalian and avian species. Unfortunately, the potential to utilise this rich data source is currently limited by a number of constraints:

(1) There are **legal** issues concerning both intellectual property rights to the data and privacy regulations in cases where there is a chance of humans being photographed.

(2) The sheer **volume of images** collected represents massive challenges for data processing. As a result, relatively few professional projects process all data, and instead only focus on the target species, because AI technology is currently not user enabled or adequately trained. Also **ctizen-science** data is rarely fully classified or entered into databases.

(3) Different professional users work with **different databases** that currently do not facilitate easy sharing. Non-professional users rarely enter their data into any form of database or secure storage, which entails a risk of data loss.

(4) The **analytical tools** for exploiting data are still under development, especially when it concerns integrating data across species or across study sites. Our project aims to support European, national, regional and stakeholder organisations' efforts to conserve and manage biodiversity by enhancing their timely access to robust monitoring data for a wide set of species not currently covered by accessible monitoring data. More specifically, the objectives are to:

- Address human, technological, and analytical bottlenecks to generate a set of tools that will permit the large-scale and efficient processing, sharing, analysis, and exploitation of CT data on an unprecedented continental scale.
- Link together professional scientists, citizen scientists, and stakeholders in a joint action to promote efficient conservation and management of biodiversity.
- Produce a European solution that fits the European setting (social, legal, institutional, ecological, technological) with transfer value to other settings beyond Europe.