



EarthBridge

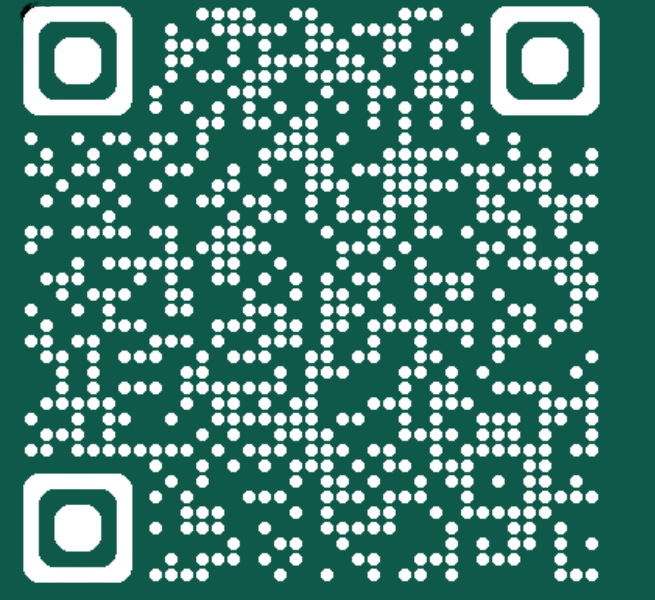
Building Bridges between Earth Observation and Environmental Sciences

earthbridge.eu

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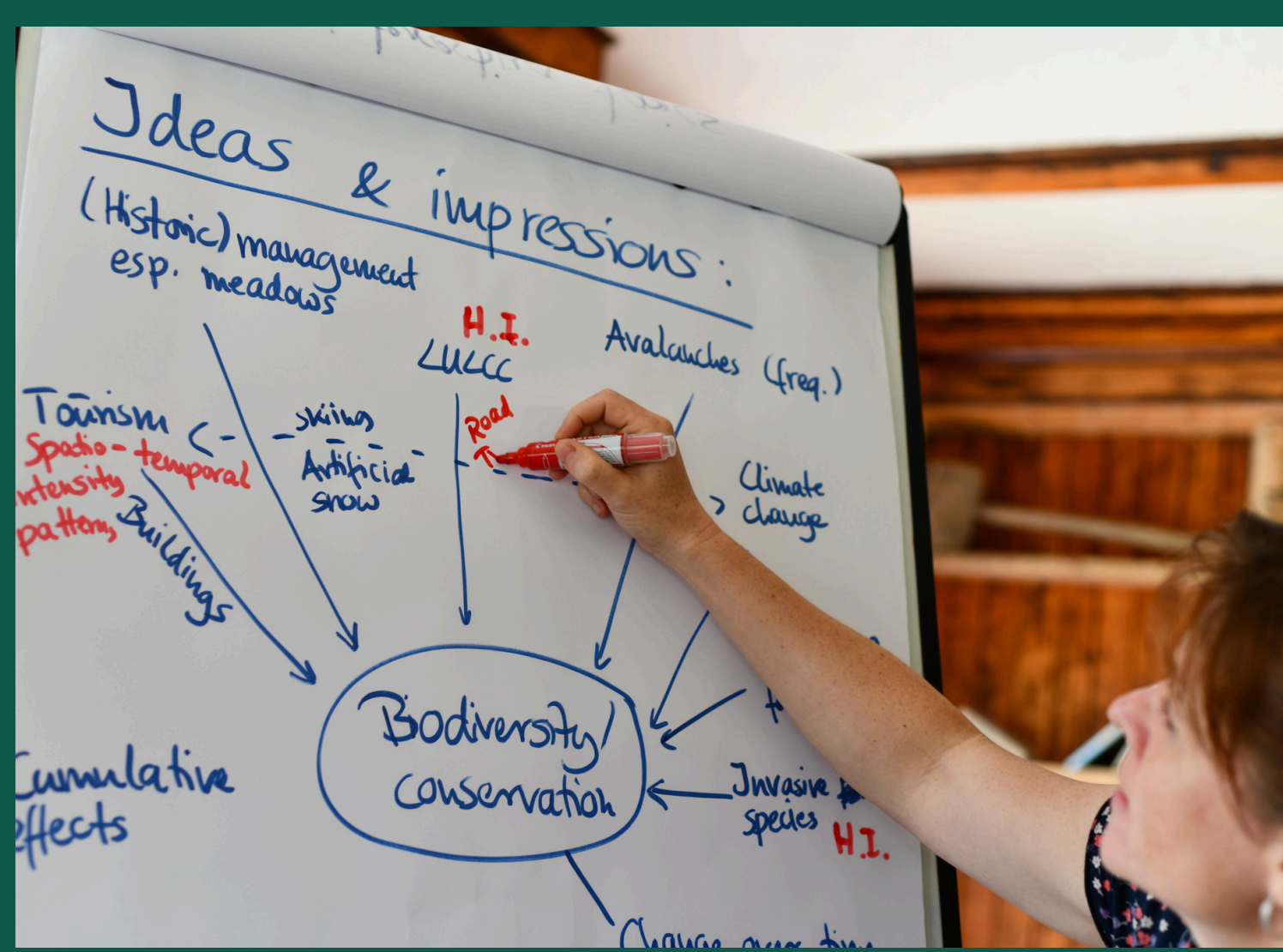
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EarthBridge is a three-year project funded by EU (No. 101079310) that started in January 2023. It ensures **knowledge transfer** and exchange by developing new methods and training new professionals in **environmental Earth Observation (EO)**. EarthBridge aims **to develop and further improve environmental EO tools** that are robust, transferable, and applicable across disciplines and landscapes. The project brings together EO and environmental sciences expertise to bridge the existing gaps between these two disciplines at educational, practical, and governmental levels. EarthBridge is focused on **the development and application of methods for monitoring, restoration, and conservation of biodiversity** in agricultural landscapes. Last but not least, it is the foundation upon which the bridges of cooperation between Czech University of Life Sciences Prague (CZU), Technische Universität Dresden (TUD) and Alma Mater Studiorum - Università di Bologna (UNIBO) and Universität Bonn (UBO) have been built.

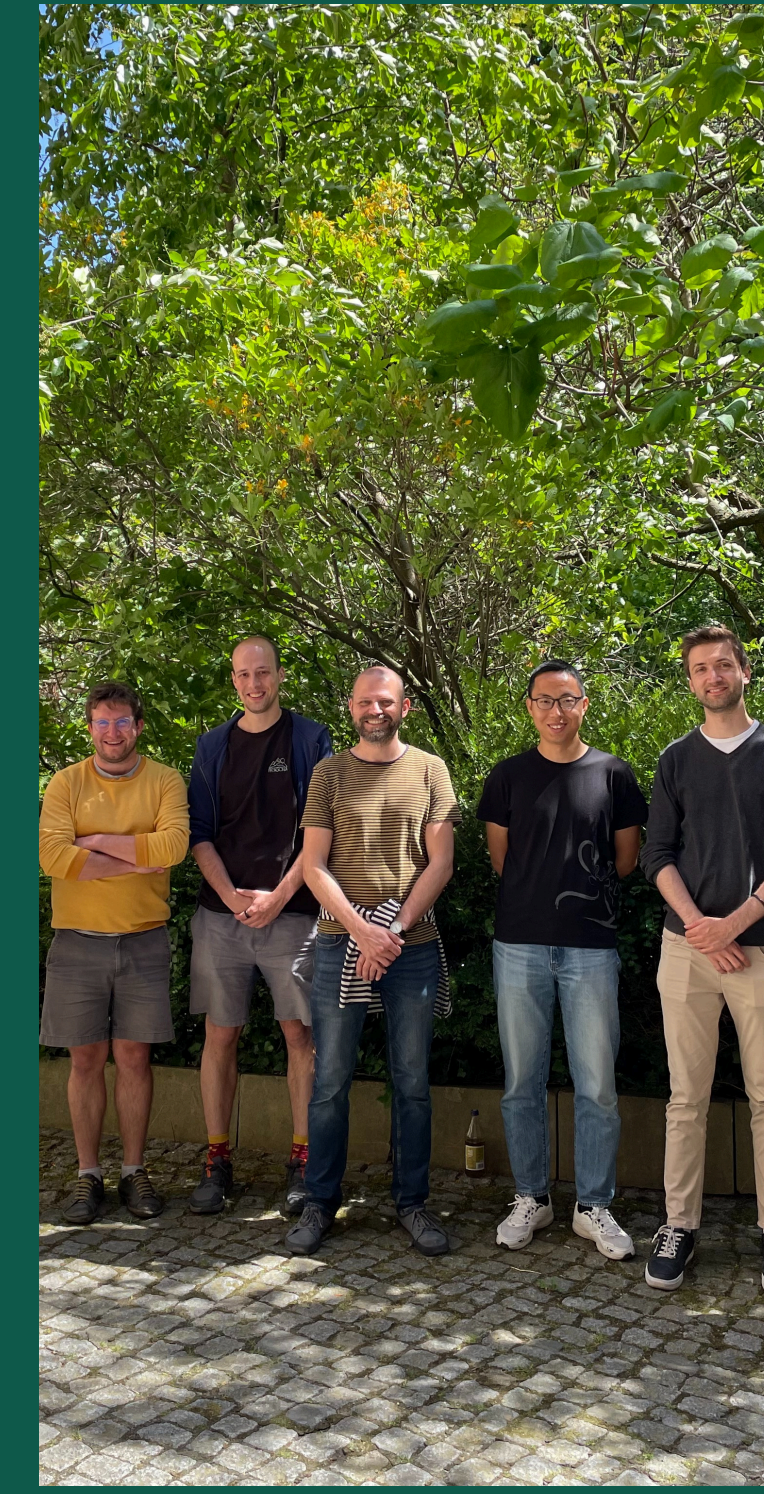
Synthesis Project

This task centred on a collaborative synthesis project implemented as a two-part series aimed at fostering research collaboration and capacity among early-career scientists. The first synthesis workshop was organised by CZU in May 2024 in the Obří důl valley of the **Krkonoše National Park (KRNAP)** in Czechia. A second meeting was held in September 2024 at UBO. The overarching goal of the synthesis project was a joint preparation and submission of a manuscript to an international peer-reviewed journal, co-authored by all participants.



Research Exchanges

To foster international collaboration and broaden the research experience of both, young and senior scientists, **short-term research exchanges** were organised for the total of fifteen persons. Five CZU senior researchers and ten early-career researchers participated in extended stays (averaging two months) at partner institutions (TUD, UBO and UNIBO). Additionally, eleven early-career researchers from TUD and UNIBO visited CZU for short-term stays of up to one month. These exchanges facilitated **mutual learning, collaborative research, and networking** across institutions. By providing early-career researchers with hands-on experience in new research environments, the exchanges played a vital role in expanding professional networks, generating new insights, and promoting long-term cooperation.



Research

In the EarthBridge project, our research looks at **how differences in vegetation structure and spectral properties relate to biodiversity**. We explore how modern satellite and airborne technologies, including both passive and active remote sensing, can help us better understand different aspects of **biodiversity in farmland and forested landscapes**. We also use new types of data and methods to create **detailed maps of canopy height and terrain**, which are essential for studying habitat complexity and where species live. In addition, we work on improving models of species distributions by making the data more reliable, reducing errors, uncertainties, and biases that can affect results.



Summer School

The EarthBridge Summer School was a six-day intensive training course jointly organised by CZU, UNIBO, and TUD, hosted at CZU. This initiative formed a core part of the EarthBridge project's activities, focusing on the use of Earth Observation (EO) technologies for biodiversity conservation and ecological monitoring. The school welcomed 25 early-career researchers from 11 countries, graduate students in environmental and EO-related fields, and professionals interested in expanding their EO competencies. The programme blended lectures on theory, field visits, and hands-on sessions, covering a broad spectrum of topics including optical and microwave remote sensing, radiative transfer modelling, UAV-based data collection, lidar data processing, and radar signal interpretation.



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