

# SCIENZE A SISTEMA PER LA SOSTENIBILITÀ

## La ricerca al Dipartimento di Biologia Ambientale

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### Dynamic process analysis in Italian protected areas: reconstructing long-term changes of plant biodiversity

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#### RESEARCH OBJECTIVES

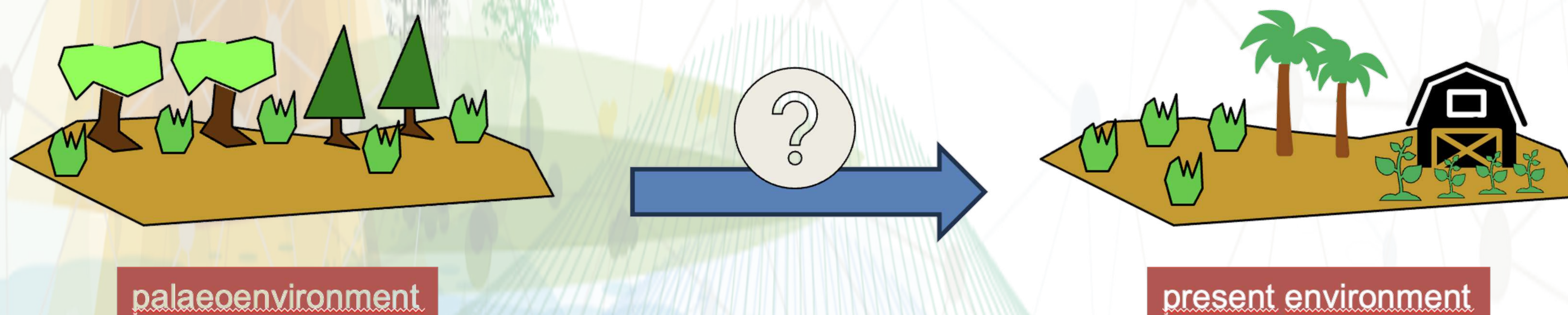
Our research aim is to contribute to the reconstruction of past environments and their changes over time in some **Italian protected areas** by analyzing fossil pollen grains preserved in lake sediments. We expect to calibrate an accurate timescale for past vegetation changes occurring within the study areas (including recent climate and a variety of land-use changes), as well as to reconstruct the **evolution of plant communities** in response to natural and anthropogenic events.

**Study sites in Parco Nazionale d'Abruzzo Lazio e Molise: Lago di Scanno (left) and the peat bog of Passo Godi (right)**



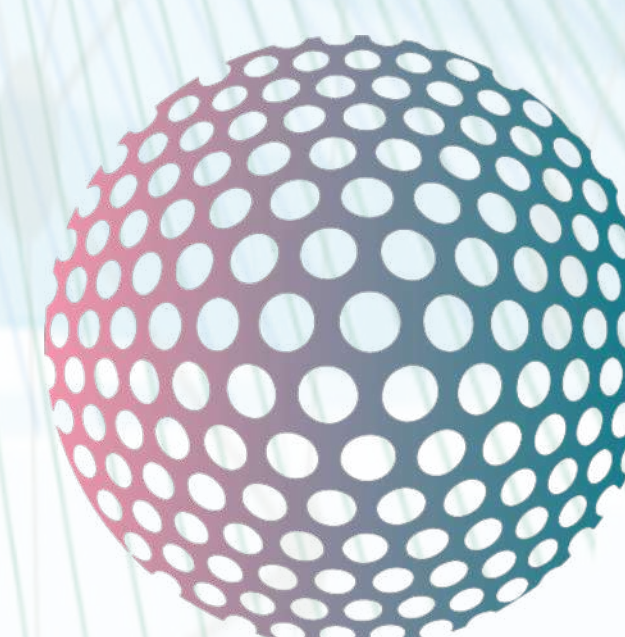
#### INNOVATIONS

Our research activities seek to develop and apply a new **palaeoecological approach** to the study of present terrestrial ecosystems. Such an approach is based on the reconstruction of past vegetation changes during the last millennia by using pollen analysis of ancient sediments. It can contribute to the definition and evaluation of **conservation strategies** for the present plant biodiversity in terrestrial ecosystems, considering the resilience of plant communities to past climatic changes and the effects of human activities on the local environment.



#### COHERENCE WITH THE PNRR PROJECT

Our research outcomes will provide the essential baseline for the National Biodiversity Future Center, NBFC (PNRR – Spoke 4 Activity 4), which aims to address the impact of area-based conservation strategies on **long-term trajectories** of populations, communities and ecosystems. By interrogating multiple temporal records of biodiversity trends, such as the pollen one, NBFC will be able to provide the first experimental assessment of how alternative strategies of area-based conservation can interact with global changes to shape **biodiversity patterns** over time.



## NATIONAL BIODIVERSITY FUTURE CENTER



[nbfc.it](http://nbfc.it)



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