

# Botany and Ecology



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## Characterizing studies

In the "botany and ecology" field, researchers study the dynamics of natural and semi-natural ecosystems in relation to climate change and land use, including the management and conservation of biodiversity in pastures and forests. The research is conducted at various biological-organizational scales (from species to communities) and spatiotemporal scales (from local levels to the biogeographical scale, from seasonal changes to long-term changes). The approaches used range from the taxonomic perspective (focused on species identity) to the functional perspective (related to functional traits).



On the left, the Montagna di Torricchio State Nature Reserve, managed by UNICAM and a long-term research site (LTER network). On the right, *Adonis fucensis*, a newly described endemic species recently identified in the Abruzzo Region. Below, from left to right: habitat mapping in the Sibillini Park; site of the long-term forest monitoring network (CONECOFOR); samples and structures of the two herbaria.



## Structures, research infrastructures and networks

Research is facilitated by the presence of two herbaria: the **Herbarium Universitatis Camerinensis** located in Camerino and the **Herbarium Apenninicum** at the **Centro Ricerche Floristiche dell'Appennino (CRFA)**, with a total of over 300,000 preserved specimens. A true research infrastructure is the **Montagna di Torricchio State Nature Reserve**, managed by UNICAM, a site in the **LTER** (Long Term Ecological Research) network and an open-air laboratory for monitoring and educational activities. Bridging research and scientific dissemination is the **Arboretum Apenninicum**, recently developed to enhance its accessibility. Particularly noteworthy is the participation in or leadership of national and international networks such as ICP Forests or initiatives related to the checklists of native and non-native plants of Italy.

## Projects

Recent projects include three **LIFE** initiatives: Modern NEC on forest monitoring, BEEadapt on pollinator insects and climate change, and Floranet on the conservation of species listed under the Habitats Directive. Three **PRIN** projects are currently underway: one focusing on the genetics and functionality of endemic Italian forest species, one on Italian forest biodiversity from a multitaxonomic perspective, and one on Mediterranean deciduous oak forests. The group has also benefited from an **Erasmus+** project (TranSuMan, on sustainable pasture management) and is currently involved in a project funded by **PNRR**, studying multitaxonomic diversity indicators in old-growth forests. Numerous **applied and territory-related projects** are also ongoing, including activities tied to the implementation of the Habitats Directive, participation in the new National Forest Inventory, and floristic-vegetational research in Italian national parks (Sibillini, Gran Sasso-Laga, Foreste Casentinesi, etc.).

