

WHAT DOES A TYPICAL eLTER SITE LOOK LIKE?

The Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research Infrastructure (eLTER RI) is founded on a distributed network of sites and platforms, designed to increase our knowledge of how ecosystems function. Together, these sites cover major European environmental and socio-economic gradients. This infosheet presents an archetypal eLTER Site, to help explain its general features.



eLTER is many things to many people: a community of experts, a physical infrastructure, computing systems and databases, and activities such as partnership building, events and projects. The place-based pan-European Research Infrastructure is designed to observe and investigate the environment in the long term. Therefore, at its heart, it is a network of in-situ facilities (i.e. the eLTER Sites and eLTER Platforms) for high-quality ecosystem, critical zone and socio-ecological research.

Since eLTER in-situ facilities differ in their history, they originally vary in their design, the observation programme, their instrumentation and so on. eLTER strives to harmonise their design and measurements aiming at a whole system approach.

eLTER Sites Category 1 and Category 2 (see [InfoSheet 17](#)) aim to holistically observe and investigate ecosystems, but they differ in their level of instrumentation. eLTER Platforms (see [InfoSheet 15](#)) meanwhile foster the collection of socio-ecological data and knowledge from various sources. They usually cover wider regions with one or more eLTER sites within their boundaries. eLTER includes sites studying terrestrial habitats such as forests, grasslands and agricultural systems, as well as freshwater and transitional water ecosystems.

Key characteristics of an eLTER Site

● DEFINED AREA

The site is delineated by a known boundary such as a catchment, a lake plus its shore or a forest patch. The site is described in detail on the site and data registry DEIMS-SDR (deims.org) and has a unique DEIMS.ID.

● WHOLE SYSTEM APPROACH

Aiming to describe and measure all critical structures and functions of the ecosystem by covering atmosphere, biosphere, hydrosphere, geosphere, and the main socio-economic drivers of change.

● LONG-TERM OBSERVATIONS & STUDIES

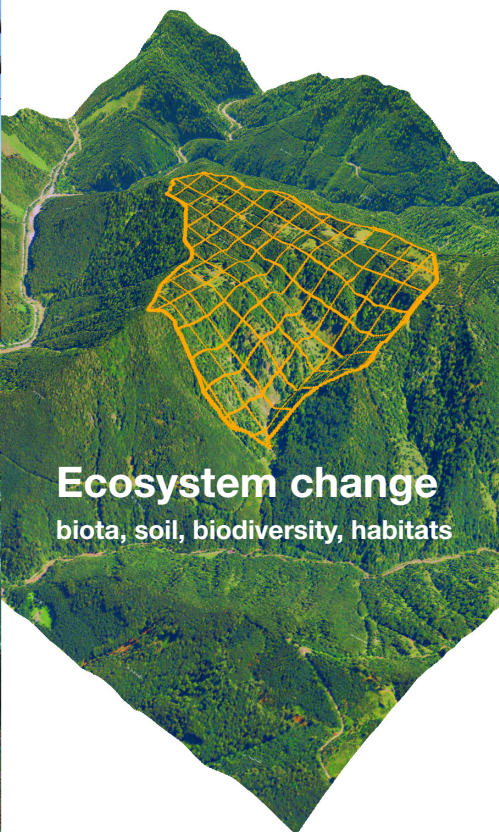
Continuous and simultaneous measurements of physical, chemical, and biological parameters aiming to span decades, creating a unique long-term time series to assess ecosystem change and cause-effect relationships. Data is collected both manually and via automatic sensors. The site supports both short- and long-term studies.





INPUT

energy, matter, water



Ecosystem change

biota, soil, biodiversity, habitats



OUTPUT

energy, matter, water



Other features of eLTER Sites

● PART OF A LTER SITE NETWORK

Formal part of a national LTER network and/or National Research Infrastructure (NRI)¹ contributing to the continental eLTER Research Infrastructure and ILTER.

● CO-LOCATION

Wherever possible, eLTER aims at co-locating activities with partner RIs and related observation and research networks and projects. Co-location enables innovative collaborative research and findings as well as funding and conceptual alignment. For example, many eLTER Sites are also stations of national monitoring schemes, e.g. for air and/or water quality, biodiversity or soil moisture. Some sites are part of European or international programmes like ICP Forests, ICP Waters, and some are co-located with other in-situ Research Infrastructures such as ICOS or ACTRIS.

● DATA

(1) Data gathered at the sites is quality-controlled, documented, assigned a Digital Object Identifier (DOI) and stored securely. Data is freely available for research and other non-commercial uses. (2) site-relevant data from other sources (e.g. Remote Sensing, modelling) are

properly scaled and provided to support whole system analyses. Access to all data is via the eLTER Data Integration Portal including several services such as data visualisation, integration and tools (e.g. via R).

● SUPPORT FOR ACCESS

An important element of site operations is facilitating access to eLTER Sites and their services (see also **Info-sheet 33**). Sites welcome visiting researchers and provide staff to support them for their measurements or through the collection of samples. The site operators may also provide accommodation, dining, staff rooms, laboratories, vehicles, boats, etc.

Further information



To learn about specific eLTER Sites and Platforms, visit DEIMS-SDR (deims.org) or the eLTER site catalogue (available from elter-ri.eu/).

¹ While a NRI is an official part of a European Research Infrastructure, a national LTER Network is not.