



THE CHALLENGE

A NEW EUROPEAN RESEARCH INFRASTRUCTURE ADDRESSING TODAY'S ENVIRONMENTAL CHALLENGES

We live in a world of rapid social, economic and environmental change, **facing major environmental issues** such as global warming, biodiversity loss and unsustainable pressure on natural resources. To address these problems **requires world-class ecosystem research** by a well-connected, extensive community of experts, supported by advanced sites and facilities, openly shared, easily accessible data and capacity building programmes. This is the goal of the eLTER Research Infrastructure.



HOLISTIC ECOSYSTEM SCIENCE

INTEGRATED OBSERVATIONS SUPPORTING WHOLE ECOSYSTEM SCIENCE

eLTER RI will adopt a **fundamentally systematic approach to observe and analyse the environmental system**, encompassing biological, geological, hydrological and socio-ecological perspectives.

While several existing thematic environmental RIs focus on impacts of climate change and/or other elements of environmental change, **eLTER RI will be the only research infrastructure embracing holistically the integrated impacts** of such stressors on a wide variety of European benchmark ecosystems (major geo-eco-sociological systems across the continent's ecoclimatological zones).

eLTER will comprise **terrestrial, freshwater and transitional water sites**. It will allow, *in situ*, co-located acquisition and gathering of Essential Variables ranging from bio-physico-chemical to biodiversity and socio-ecological data. **Ecosystem change** caused by long-term pressures and short-term pulses will be **investigated in a nested design across the scales** covered by the eLTER site network.



eLTER WILL SERVE MANY RESEARCH COMMUNITIES

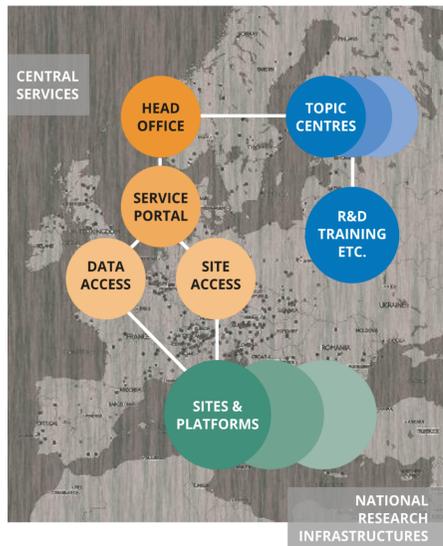


A DISTRIBUTED RESEARCH INFRASTRUCTURE

eLTER RI will comprise national Research Infrastructures (NRIs) and European level Central Services.

NATIONAL RESEARCH INFRASTRUCTURES (NRI)

eLTER Sites and **eLTER Platforms**: national building blocks and facilities, forming *in situ* backbone of eLTER RI. Site-based operations will be highly integrated and follow agreed policies. These facilities will be open for research and education via a centralised scheme.



CENTRAL SERVICES

A range of centrally-provided services will make eLTER RI more than the sum of its national networks. These Central Services are expected to consist of:

- **Head office:** coordination, strategic development, outreach
- **eLTER Service Portal:** access to data and sites
- **Topic Centres:** for e.g. technological development, capacity building, data processing & linking researchers to sites

KEY FEATURES OF eLTER RI

- Wide scale and **systematic coverage of major European** terrestrial, freshwater and transitional water **environments** – 250 research sites selected from a wider pool of \approx 400 sites
- Integrated observations across the critical zone, supporting whole ecosystem science
- Macrosystem ecology approach, studying interactions of abiotic and biotic ecosystems components at **multiple scales**, including human-environmental interactions
- Enables research into ecosystem processes influenced by **multiple drivers**, as well as socio-ecological research related to ecosystem services
- **Central Services** provided by: Head office, Service Portal and thematic Topic Centres
- Strong **links with other European environmental RIs** and embedded in the context of international LTER (ILTER).

WHAT WILL eLTER RI OFFER?

- **Filling a critical gap** for top-class, continental scale science
- **Access to** integrated research **sites** and local expert teams
- Easy access to long-term data, data products, models and analysis tools
- Support for research **project design**
- Support **for ground-truthing** and remote sensing service development
- Support for development and testing of **new observation technologies**
- **Education and training** programmes for RI providers, RI managers, researchers, other data users and students
- Information on the **state of European ecosystems** and impacts of pressures.

www.lter-europe.net

CONTACT US

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