

## 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 ≈ 400 sites
- **Integrated observations** across the critical zone, supporting whole ecosystem science, including socio-ecological research
- Macrosystem ecology approach, studying interactions of abiotic and biotic ecosystem components at **multiple scales**, including human-environment interactions
- Enables research into ecosystem processes influenced by **multiple drivers**, as well as socio-ecological research relating 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).



### USERS

Researchers  
Policymakers  
Students  
Authorities  
Civil society

## 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 and approaches**
- **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.

### OUR MISSION

Research into ecosystem structures and functions

Site-based

Multi-scale

Cross-disciplinary

ATMOSPHERE

SOCIAL & ECONOMIC SPHERE

BIOSPHERE

HYDROSPHERE

GEOSPHERE

SERVING ECOSYSTEM CRITICAL ZONE SOCIO-ECOLOGICAL AND RELATED RESEARCH

## CONTACT US

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Current/recent development of eLTER RI is via the European Union-funded **eLTER** and **Advance\_eLTER** H2020 projects. A proposal to include eLTER RI on the ESFRI 2018 roadmap was submitted in August 2017.

Images 'To measure is to know' and 'Don't poison our water' by The Climate Reality Project on Unsplash. Other images courtesy of LTER-Europe members.



## INTEGRATED EUROPEAN LONG-TERM ECOSYSTEM CRITICAL ZONE AND SOCIO-ECOLOGICAL RESEARCH INFRASTRUCTURE



TAKING THE PULSE OF EUROPE'S ENVIRONMENTAL SYSTEM

[www.lter-europe.net](http://www.lter-europe.net)



**INTRODUCING THE eLTER RESEARCH INFRASTRUCTURE**



**HOLISTIC ECOSYSTEM SCIENCE**

**INTEGRATED OBSERVATIONS SUPPORTING WHOLE ECOSYSTEM SCIENCE**

eLTER RI will adopt a **fundamentally systemic 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 and Earth's critical zone).

eLTER RI 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 RI site network.



**A DISTRIBUTED RESEARCH INFRASTRUCTURE**

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

**NATIONAL RESEARCH INFRASTRUCTURES (NRI)**

- **eLTER Sites and eLTSER Platforms:** national building blocks and facilities, forming the *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.

**THE CHALLENGE**

**A NEW EUROPEAN RESEARCH INFRASTRUCTURE ADDRESSING TODAY'S ENVIRONMENTAL CHALLENGES**

**W**e 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 whole 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.

