

## DISTRIBUTED PHYSICAL NETWORK


Member countries of the eLTER RI provide the national building blocks (National Research Infrastructures, NRIs) of eLTER RI's in-situ backbone: eLTER Sites (focal points for long-term ecosystem & critical zone observation and research) and eLTSEr Platforms (large areas facilitating socio-ecological research and exemplary stakeholder engagement).


About 200 eLTER Sites and 50 eLTSEr Platforms have been selected from a wider pool of >600 registered LTER- Europe sites.

Core elements of the distributed site operations are interoperable and follow agreed policies. eLTER in-situ facilities are open for research and education via a common access scheme.

## CENTRAL SERVICES

A wide range of services connects the network of eLTER Sites and eLTSEr Platforms across countries. The central eLTER Service Portal enables service access by a wide range of users. Services are provided by:

 **Head office:** coordination, communication and outreach, strategic development & collaborations (currently hosted by UFZ, Germany).

 **Topic Centres:** covering six Thematic Service Areas incl. Quality Assurance for Data, Modelling and Analysis Tools, Design Interoperability, Synthesis towards actionable knowledge, Technological Innovation & Development, and Central Analytics.

## BROAD SUPPORT FOR eLTER RI

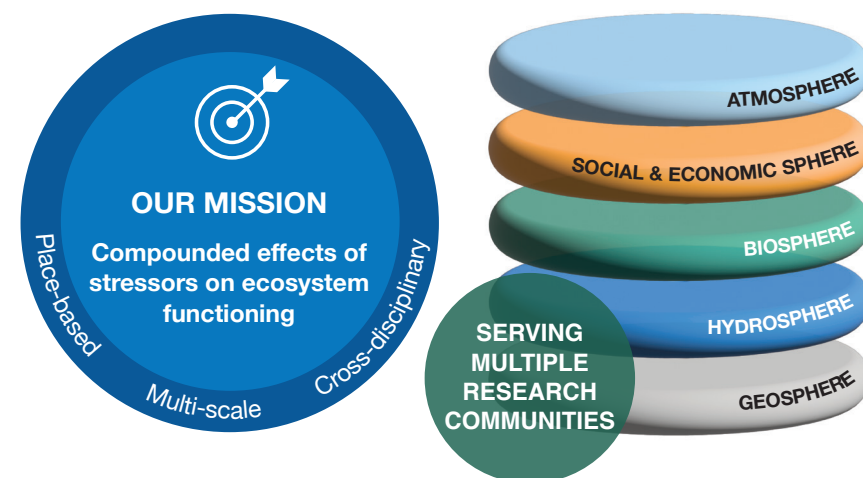
Since 2018 eLTER RI is on the European Strategy Forum on Research Infrastructures (ESFRI) Roadmap. By 2024, 21 countries support eLTER RI politically and ~165 institutions from 28 countries have signed the eLTER Memorandum of Understanding, signalling strong support for the scientific objectives of the RI. The indicative budget of eLTER RI decided by the eLTER Interim Council is ca. 9 Mio EUR p.a. for central services operations.



Since 2020, eLTER has been supported by three EU-funded projects involving 27 countries: eLTER PLUS tests the performance of existing components through scientific case studies and identifies the needs of scientific and other user groups (Coordinator: Jaana Bäck, UHEL/Finland). eLTER PPP (Preparatory Phase Project) facilitates the formalisation of eLTER RI as an ERIC, and eLTER EnRich addresses operational and formal challenges of the eLTER ESFRI process (Coordinator PPP and EnRich: Michael Mirtl, UFZ/Germany).





eLTER receives funding from the European Union's Horizon 2020 research and innovation programme under GA No 871126 (eLTER PPP) and GA No 871128 (eLTER PLUS), and the European Union's Horizon Europe research and innovation programme under GA No 101131751 (eLTER EnRich).






## eLTER's SERVICES INCLUDE






### ACCESS TO

-  Research Sites and socio-ecological research Platforms
-  Long-term in-situ data (decades of legacy data, recent Standard Observations)

### DATA INTEGRATION & ANALYSES

-  Integration of diverse data into Information Clusters for each site (in-situ data, Remote Sensing, official statistics, modelling & mapping)
-  Analytical tools & syntheses
-  High-level data products tailored to inform policy

### SUPPORT

-  Establishment of interoperable standards for data collection and processing
-  Funding alignment, furthering collaboration of RIs & peer networks
-  Education, training, and community support
-  Research project design support
-  Roll-out of new technologies

## CONTACT US

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# THE CHALLENGE

## AN INNOVATIVE RESEARCH ENVIRONMENT FOR THE NEXT GENERATION OF SCIENTISTS

We live in a world of rapid social, economic and ecosystem changes and face major challenges such as global warming, biodiversity loss and pressures on natural resources. They pose complex and time-critical threats to the integrity of global ecosystems and their capacity to provide life-enabling services to humans. Addressing these threats requires integrated ecosystem, critical zone and socio-ecological research by well-connected communities of experts from a comprehensive range of disciplines.

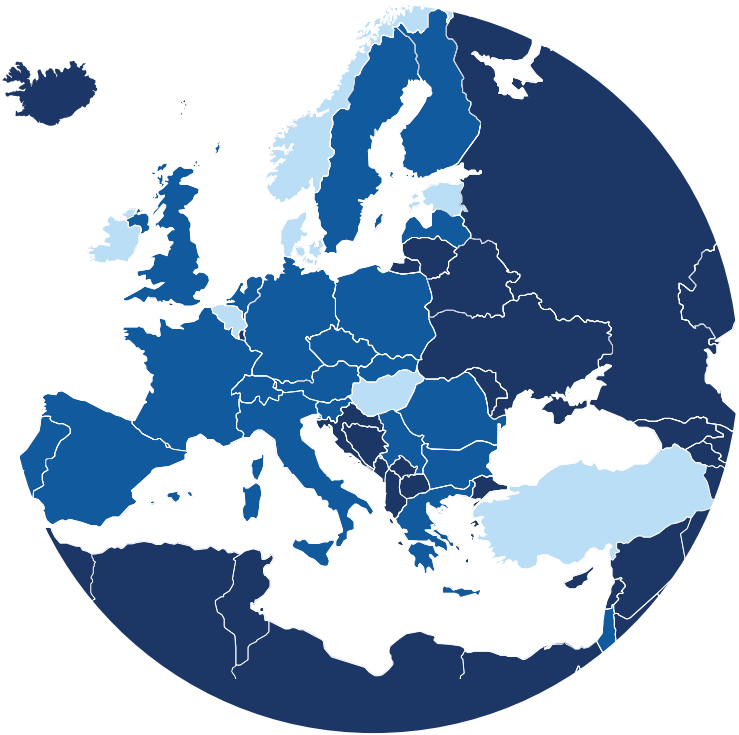
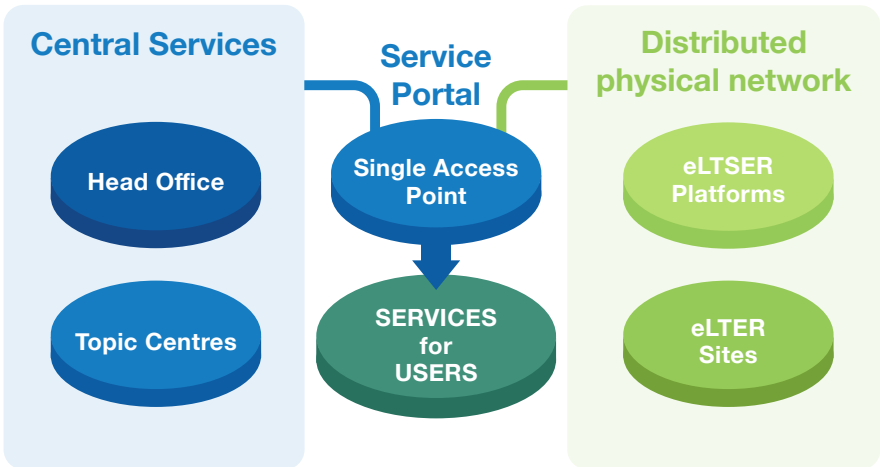
To do so, eLTER catalyses scientific discovery and insights through its state-of-the-art in-situ facilities and tools, open and accessible data, collaborative working culture, transdisciplinary expertise and a demand-driven portfolio of services.

# HOLISTIC SCIENCE

eLTER RI adopts a fundamentally systemic approach to observe and analyse the human-environmental system, encompassing biological, geological, hydrological, atmospheric, and socio-ecological perspectives.

eLTER RI is the first research infrastructure holistically capturing and analysing the compounded impacts of climate change, integrating other pressures on a wide variety of European ecosystems.

Harmonised Standard Observations ranging from biophysicochemical to biodiversity- and socio-ecological variables enable research across disciplines. Ecosystem change is caused by both long-term pressures and short-term pulses. eLTER investigates both in a nested design from the local to the continental scale.



## Support for eLTER RI

- Politically supported by 21 countries
- + ca. 165 supporting institutions from 28 countries

# KEY FEATURES OF eLTER RI

- Distributed physical network:** Wide-scale and systematic coverage of major European terrestrial, freshwater and transitional water ecosystems (ca. 250 research Sites and socio-ecological Platforms)
- Central Services:** provided by the Head Office and thematic Topic Centres
- Research into ecosystem processes influenced by multiple drivers, as well as socio-ecological research relating to ecosystem services
- Investigation of interactions between abiotic and biotic ecosystem components at multiple scales, including human-environment interactions
- Integrated, long-term and high-quality observations across the critical zone, supporting whole ecosystem science
- Strong links with other European environmental RIs encouraging co-location of measurements and other collaborations
- International collaboration through International LTER network (ILTER) and the Global Ecosystem Research Infrastructure (GERI)

# eLTER RI'S UPCOMING RESPONSE TO THE NEEDS OF PEERS AND OTHER ENVIRONMENTAL RIs

- eLTER is a building block of the **European environmental RIs**.
- eLTER explores the **compounded impacts** of climate change, biodiversity loss, soil degradation, pollution, and over-exploitation **on major European ecosystems**.
- eLTER's integrative role results from a **holistic approach** to investigating ecosystems and socio-ecological systems.
- The holistic approach stimulates **co-location with other RIs** and **networks** jointly using basic infrastructure and scientifically complementing each other.
- eLTER harmonisation efforts adopt the **best available standards** from more specialised peers and fill critical gaps to achieve whole system observation.
- eLTER triggers **bi- and multi-lateral network optimisation** and **funding alignment** at local, national and global scales.
- eLTER aims at **integrating, co-designing** and **co-implementing** services with other RIs.
- eLTER responds to project calls in collaboration with other RIs and engages in the **European environmental Research Infrastructures cluster (ENVRI)**.

