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eLTER
Integrated European
Long-Term Ecosystem, critical zone and
socio-ecological Research

Issue: February 2024

Strategic News

eLTER Science Conference: the place to be!

Mark your calendars: A major eLTER event will take place in June 2025! Tampere in Finland will host the **first** eLTER Science Conference on 23-27 June 2025; a full week of keynote lectures, oral and poster sessions, exhibitions, workshops and field trips to exchange and engage in scientific dialogue about the Whole Systems Approach that is so unique to eLTER RI. The conference addresses **researchers and peers from Europe and globally**.

In the Anthropocene, research is challenged to develop a more holistic approach to understanding the compounded impacts of climate change, biodiversity loss, soil degradation, pollution and unsustainable resource use. Addressing whole systems at different spatial and temporal scales is key to answering scientific and societal questions.

The eLTER Science Conference will be a great opportunity for the different communities and disciplines that study the linkages between the different **"spheres" (geo-, hydro-, bio-, atmosphere- and sociosphere) of the habitable skin of the Earth**. The high-level scientific and social programme will encourage diversity of approaches, exchange between generations of scientists and inclusivity in the spirit of promoting inter- and **transdisciplinarity**. In the beautiful lake region of Tampere, the field visits will allow you to discover some of the best examples of eLTER instrumented sites. The call for abstracts and registration will open in October 2024.

Don't miss this milestone!

Additional support for eLTER: New eLTER project "eLTER EnRich", and a new HO staff member

From March 2024, eLTER receives additional financial support from the eLTER EnRich project. This 3-year, EUR 1.5M Horizon Europe project will bridge the gap between the preparatory and operational phases of the eLTER ESFRI process, which have been severely constrained by various adverse force-majeure factors (including the COVID pandemic) since the start of the eLTER PPP and PLUS projects in 2020. EnRich will take eLTER to the operational phase by streamlining RI design, taking eLTERs cyberinfrastructure to the next level, further engaging and formalising service-hosting, and seamlessly linking eLTER projects to eLTER ERIC operations.

The core objectives of eLTER EnRich are

- To implement a systems engineering approach to better manage the complexity of the distributed RI's System Architecture design
- To implement the adopted eLTER RI scenario ('skeleton RI' - SRI) with firmly hosted core- and other services in support of main user groups, as a starting point for extensions during the eLTER RI operational phase
- To take the eLTERs cyberinfrastructure to the next level and extend service capabilities in close cooperation with European ENV-RIs
- To strengthen formalisation efforts for the eLTER ERIC
- To achieve solid and sustainable commitments from service hosts and future ERIC Members
- To seamlessly link eLTER projects to eLTER ERIC operations, build capacity in expertise and human resources, and strengthen user engagement in the RI

The EnRich project will be managed by the eLTER Head Office's newest staff member, Dr. David López Herráez – welcome to the eLTER family, David!

Highlights

Introducing a tool for calculating the costs of Standard Observations at eLTER sites

An innovative tool is being developed by a collaborative team from the University of Helsinki and UFZ, including Allan T. Souza, Steffen Zacharias, Syed Alam, Terhi Rasilo, and Jaana Bäck, to efficiently calculate the costs associated with Standard Observations (SOs) at eLTER sites. This is an exciting new development for the eLTER community as it represents a significant step forward in enhancing the precision and efficiency of environmental research management.

This tool, crafted using *R Shiny*, a powerful web application framework, is a testament to the collaborative spirit and technical expertise within our community. It addresses a critical need by providing a user-friendly interface for researchers and administrators to accurately estimate the costs involved in maintaining and operating eLTER sites. Users can select various parameters such as the site category, habitat location, and spheres of specialisation (specifically for category 1 sites), tailoring the cost calculation to their unique site characteristics.

A notable feature of this tool is its flexibility. Recognizing that certain SOs might be covered by other means, such as co-location with other Research Infrastructures (RIs), the tool allows for the exclusion of these SOs from the cost calculations. This feature ensures that the estimates provided are both precise and relevant to the specific needs and configurations of each eLTER site.

However, the journey to perfect this tool is ongoing. The development team is currently tackling challenges related to fine-tuning the cost calculations, including computing yearly costs and enhancing the tool's user friendliness.

Photo: Water measurements at the LTER-France site OZCAR-RI Aurade Catchment. Copyright: eLTER

eLTER involvement in other projects: Biodiversity Digital Twin

As eLTER becomes embedded in the European RI landscape, it contributes to more and more projects that involve other RIs and research institutions within its scope and mission, each an opportunity for eLTER to contribute, learn, and network. We will introduce projects eLTER is involved in over the next newsletters, so watch this space for news and updates!

eLTER contributes to the project BioDT – Biodiversity Digital Twin. This 3-year Horizon Europe project - started in June 2022 - aims to develop a Digital Twin prototype providing advanced simulation, modelling, and prediction capabilities, and, through practical use cases, to address critical issues in global biodiversity dynamics.

Together with three other environmental RIs, namely DiSSCo, GBIF, and LifeWatch, eLTER has joined a dynamic team of experts in biodiversity, high performance computing, artificial intelligence and FAIR data to push current boundaries of predictive understanding of biodiversity dynamics.

eLTER contributes to BioDT as data broker and mobilizer, capitalising on eLTER's international network of instrumented sites and their wealth of legacy data, to inform BioDT's advanced models for simulation and prediction capabilities, and supports the development of digital twins and work flows to FAIR data. These

activities, in turn, also help to establish and develop key eLTER services and contribute to harmonisation and integration of data and work flows across the EU scientific landscape.

Gaia Consulting kicks off work on eLTER Business Plan and SEIA

An operational RI requires a sustainable business plan and an in-depth understanding of its impact on different stakeholder groups. For this purpose, 2023 eLTER launched a tender for Business Plan and Socio-Economic Impact Assessment (SEIA) Framework development services in summer. The procurement was successfully concluded in December 2023 and, after a competitive selection process, the contract was awarded to the Finland-based company Gaia Consulting. In close collaboration and regular consultation with the eLTER team, Gaia will support eLTER in taking next steps towards a sustainable and functional RI.

The work has already started in early January, and in the process of business-plan development, Gaia will develop the eLTER business model, including the user engagement strategy and value proposition. In addition, building on existing eLTER materials, Gaia will collect information and provide advice and recommendations for future development of the RI's key aspects - tailoring services to user needs, organisation and governance, financial and funding framework, performance management, communication and branding.

As part of their work on the SEIA, Gaia will develop tools for collecting indicators and assess their efficiency, implement a survey and conduct in-depth interviews with selected eLTER stakeholders and analyse the results. A workshop on refining the SEIA framework for the eLTER RI staff, and the final report, are foreseen in early fall of 2024.

About Gaia Consulting

Established in 1993, Gaia Consulting has strong background in impact assessments and business plan development, understanding of research infrastructures as well as experience in working with transnational partnerships, scientific and policy-oriented collaborations, making them an excellent partner for eLTER.

Reporting Back

Breaking New Ground: The University of Bucharest's eLT(S)ER-Romania and LifeWatch-Romania Platforms Project

The University of Bucharest, as the coordinator of the eLT(S)ER-Romania and LifeWatch-Romania platforms, recently successfully completed the 3-year, EUR 10-Mio project 'Strengthening the Ecosystem and Biodiversity Research Capacity of the University of Bucharest through e-science and Technology – LifeWatch Romania', funded from an EU Large Research Development Infrastructures call.

This milestone project leveraged the robust eLTER and LifeWatch infrastructures to create a comprehensive research infrastructure (RI) for the entire University of Bucharest. The primary project goal was to establish an infrastructure capable of steering numerous efforts in the decades to come, particularly the fields of biology, ecology, geography, and sociology. Simultaneously, it opened avenues for multidisciplinary, interdisciplinary, and transdisciplinary research.

The main achievement of the project lies in creating open research entities, aligning the University of Bucharest with established European research infrastructures like eLTER, LifeWatch, and ICOS. This infrastructure offers advanced analytical capabilities, inter- and transdisciplinary integration, and modelling to support the understanding of dynamic relationships between biodiversity/natural capital and social and industrial usage of natural resources. It also aids in the formulation of development scenarios and sustainable development strategies and policies over extensive time intervals.

Image: Photo from the final event of the project

Read the full article

eLTER at Biodiversity Information Standards TDWG2023 Conference

The TDWG 2023 Conference (Oct 9th-13th 2023) took place in the city of Hobart, Tasmania, offering an exciting opportunity for scientists working with biodiversity informatics to come together and explore the latest advancements in biodiversity data management and standards.

Hanna Koivula (CSC) participated on behalf of eLTER PLUS, BioDT and FAIRCORE4EOSC projects, and highlighted the opportunities and means to integrate biodiversity data with other cross-disciplinary data by using standards, vocabularies, and mappings between them. The session most relevant to the eLTER RI was SYM11 Combining biodiversity and environmental data for addressing scientific and societal questions, which was chaired by eLTER PPP task lead Francisco “Paco” Pando (CSIC).

The TDWG2023 Conference was a fruitful and beneficial event providing lots of valuable connections to other European ecological and biodiversity data RIs.

Presentations about Essential Biodiversity Variables (EBVs and Key-Value Pairs and No SQL databases for biologging data, as well as Data Products created by EMODnet Biology project were among the highlights, supplemented by inspiring coffee-break discussions with other participants. In the discussions between Paco Pando, the GBIF Secretariat and other RI representatives, we came to the conclusion that it would be great if the eLTER Biodiversity community would get more involved in the TDWG discussions about biodiversity standards and vocabularies, bringing in more insight on integration of biodiversity data with other ecological data.

All presentations are available in the youtube: TDWG 2023 Annual Conference

All abstracts can be read in the BISS under 'TDWG Proceedings 2023'.

Photo: eLTER presentation during the Biodiversity Information Standards TDWG2023 Conference

eLTER Videos

See eLTER through the videos made during the trainings, meetings and workshops of the infrastructure. This way you can better get to know the faces and voices of eLTER! The next video explains what eLTER is all about!

Future Events and Calls

ILTER Webinar: How to register your site in DEIMS

Date: 28 February 2024 I **Place:** Online

The main speaker, Dr Christoph Wohner from **Environment Agency Austria**, Department for Ecosystem Research and Monitoring Austria, will provide valuable insights into the process of registering a site in **DEIMS-SDR** (the Dynamic Ecological Information Management System - Site and Dataset Registry). DEIMS-SDR serves as a vital tool for managing and sharing ecological data. This webinar presents an ideal opportunity to learn its importance and enhance your research capabilities!

Learn more

eLTER PLUS General Assembly meeting

Date: 13 March I **Place:** Online

A virtual eLTER PLUS General Assembly meeting will be organised on Tuesday 13th March 2024 at 10:00 -12:00 CET.

Learn more

Call for ICOS Science Conference 2024 Abstract

Date: 10-12 September 2024 I **Place:** Versailles, France, and online

ICOS, eLTER, ACTRIS RIs will jointly organise a session (Session 17# Best Practices in the landscape of Research Infrastructures: Cooperation, Co-location and other lessons learned), and you are warmly welcome to submit an abstract.

The abstract submission deadline is Monday, 8 April 2024 at 13:00 CET.

Learn more

European Geosciences Union (EGU) General Assembly 2024

Date: 14-19 April 2024 I **Place:** Vienna, Austria

Syed Ashraful Alam, Katri Rankinen, Thomas Dirnböck, Harry Vereecken, Olga Vindušková will organise the following session, co-sponsored by eLTER:

BG8.14: Integrated solutions for landscape management of GHG balance and biodiversity in a changing environment

Learn more

ACTRIS Science Conference 2024

Date: 13-16 May 2024 I **Place:** Rennes, France

The ACTRIS Science Conference 2024 will be held in Rennes, France from
13 - 16 May, 2024. The conference will take place at the spectacular Le Couvent des Jacobins, a historic convent founded in the 14th century, which now serves as a convention centre.

Learn more

eLTER PPP & PLUS Consortia meeting

Date: 03-07 June 2024 I **Place:** Sofia, Bulgaria

The next eLTER PPP & PLUS Consortia meeting will take place between 3 and 7 June 2024 in Bulgaria. Detailed information and agenda will be published in due time.

Learn more

Ecological Forecasting Conference

Date: 11-13 June 2024 I **Place:** Helsinki, Finland

This 3-day hybrid community-wide EFI meeting aims at bringing together scientists, agencies, industry, and stakeholders to build a community of practice and to advance research, applications, and collaboration around near-term (subdaily to decadal) ecological forecasts. The meeting will provide opportunities to network, presentations and posters on the state of the field, and workshops focused on skill development.

Learn more

IUFRO 2024 (International Union of Forest Research Organizations)

Date: 23-29 June 2024 I **Place:** Stockholm, Sweden

The congress is arranged in close cooperation between partners in the Nordic and Baltic countries, with the Swedish University of Agricultural Sciences as the main host. The congress had received great interest, with an expected 5000+ delegates, 200 sessions, 3500 oral presentations, and 1000 posters.

In connection to the congress, three pre-congress and six post-congress excursions will be arranged in Nordic and Baltic countries. Excursions will explore scientific field sites, including several LTER sites, and forest-management operations, and take in beautiful landscapes and touristic highlights. Another fifteen one-day excursions in the Stockholm area will be offered during the congress.

Learn more

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