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Long-Term Ecosystem Research in Europe

Issue: March 2020

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All subscribers of the Newsletter, please note that we have improved our audience segmentation options to ensure each one of you receives exactly the news that is of interest to you!

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[Project news](#)**Two important steps towards a fully-functional eLTER Research Infrastructure**

Our Horizon 2020 projects, eLTER PPP & eLTER PLUS to hold their kick off meetings back-to-back early in April



Last year we announced the [good news that eLTER received funding for two key Horizon 2020 projects](#) that will pave the way towards a fully functional eLTER Research Infrastructure (RI). After the acceptance onto the [European 2018 ESFRI Roadmap](#), these projects will be pivotal for achieving eLTER's main objective to secure a fundamentally systemic approach in observing and analyzing the environmental system, encompassing biological, geological, hydrological and socio-ecological perspectives.

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specifications needed for the decision making on binding commitments for constructing and operating the infrastructure.

- [The Advanced Community eLTER PLUS project](#) will challenge, assess and strengthen the operations of the eLTER RI through engaging the best expertise and infrastructure available and closely linking the eLTER RI development to user needs including pilots for IT and other services.

Now, eLTER PPP and eLTER PLUS enter full operation mode, with their virtual kick off meetings scheduled to take place from 31 March to 3 April 2020. Due to the travel and work restrictions imposed by the COVID-19 pandemic across Europe, the meeting will be held online. We will take advantage of the current situation to actively involve all members of the consortia, beyond those that could have originally managed to attend the originally planned meeting in Mallorca, Spain.

The meeting agendas are highly integrated in order to maximize synergies and interactions through the similarly intertwined work programmes of the two project, whereby:

- eLTER PLUS will provide a wide range of inputs to the detailed specifications of the eLTER RI, and;
- broad community engagement within eLTER PLUS will support interactions between the European eLTER ESFRI process and National Research Infrastructures developments in ca. 20 countries.

PPP and PLUS Steering Committees met in Berlin

The [eLTER PPP](#) and [eLTER PLUS](#) Steering Committees (SCs) gathered for the first time this February for a planning meeting in Berlin, Germany.

eLTER PPP and eLTER PLUS offer a unique opportunity for linking scientific user communities and other stakeholders with the formal eLTER RI specification and implementation process. However, this requires seamless interactions of related tasks and topics across the two large and complex projects. While eLTER PLUS e.g. elaborates requirements from the calibration and validation of remote sensing products towards variables measured on the ground, eLTER PPP needs to incorporate such requirements into negotiations with the shareholders on eLTER Standard Observations. Good timing and concerted contents are therefore key ingredients for success.

At the joint SCs meeting, critical points towards achieving this goal were identified, the WP leads presented their action plans and options for an effective back-to-back kick off meeting of both consortia were elaborated.



Enabling transnational access to 44 sites across the continent through eLTER PLUS

eLTER PLUS offers **free-of-charge opportunities for multinational teams of researchers to visit 44 selected sites** for the purpose of small to medium scale ecological and socio-ecological research projects. Funding provided to user-groups or individual researchers for their projects will be awarded on a competitive basis and the first call for proposals is expected in October 2020, with a deadline for submission in January 2021.

All selected sites are equipped with state-of-the-art instrumentation to enable comprehensive ecological measurement and experimental campaigns. Complementary IT facilities are provided for data upload, storage and processing. Besides users visiting the sites in person, Remote Access (RA) will be also enabled. RA activities are specified remotely to be executed by eLTER site teams according to proper protocols. RA comprises a wide range of possible activities, e.g. exposure and treatments of provided

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Users selected to benefit from the eLTER PLUS Access Scheme will receive full costs reimbursement for their travel, accommodation and board. Furthermore, they can enjoy free access to the site(s) and the services provided with incurring costs covered by the site's host organizations.

Stay tuned, more information will follow in our future newsletters and on [our website](#).

Forthcoming events

EGU2020

This year the [General Assembly of the European Geosciences Union \(EGU\)](#) is still planned to take place from 3–8 May 2020 in Vienna, Austria. The final decision considering the Corona issue is to cancel the physical meeting but still hold the conference in the form of a week long of online activities. Geoscientists from all over the world gathering at EGU cover a wide range of disciplines from the Earth, planetary and space sciences, but over the past years the share of contributions related to ecology and ecosystems research have continuously increased among the >15 000 attendees. From eLTER's perspective this positive trend marks increased visibility and positive integration steps e.g. with the critical zone research community, a development which belongs to eLTER's key strategic advancements as an RI to serve ecosystems ecology, critical zone research and socio-ecological studies alike.

As in previous years, eLTER will join the common ENVR community booth and will actively participate in the EGU programme via various presentations and posters and co-convening a dedicated session:

- **BG2.23: Whole system approaches in addressing processes and long-term changes in terrestrial and aquatic ecosystems**

More information [here](#).

GEO BON Open Science Conference

The conference will be a milestone event that will bring together all those involved and interested in the development of Biodiversity Observation Networks and Essential Biodiversity Variables, as well as their potential to support global biodiversity monitoring and conservation post 2020. It will take place from 6 - 10 July 2020 in Leipzig, Germany. Abstract submission is open until March 31st. More information [here](#).

Frontiers in Experimental Research on Changing Environments

The 'Frontiers in experimental research on changing environments' conference will be held in Halle, Germany, from 22 -24 June 2020 to celebrate the 125th anniversary of the UFZ's Experimental Research Station Bad Lauchstädt. The conference is jointly organized by the Helmholtz-Centre for Environmental Research (UFZ, hosting the eLTER RI Head Office) and the German Centre for Integrative Biodiversity Research (iDiv, an important eLTER collaborator). The call for abstracts is now open, more information [here](#).

SURE2020

The eLTER community will contribute to the session "How to enable Nature-Based Solutions for urban water management: a socio-ecological approach" part of the [Cities as Social-Ecological Systems Conference - SURE2020](#). SURE 2020 is the 3rd World Conference of the Society for Urban Ecology to take place from 6-8 July in Poznan, Poland, and will cover a wide range of topics related to urban ecological aspects and social component interdependencies in cities. More information [here](#).

First OZCAR TERENO International Conference

The first OZCAR TERENO International Conference 'Advancing Critical Zone science' will take place in Strasbourg from September 28 to October 2 2020, hosted by the French OZCAR and German TERENO. The French and German contributions in the evolution of the pan-European eLTER RI are significant and the conference is an opportunity for the French and German research projects [OZCAR](#) and [TERENO](#) to integrate more closely with the current preparatory work of eLTER RI. The meeting will cover cutting-edge scientific progress in a variety of disciplines: hydrology, geophysics, soil sciences, geochemistry, ecology, socio-ecology. More information [here](#).

8th EGU Galileo Conference

The 8th EGU Galileo Conference, entitled "A European Vision for Hydrological Observation and Experimentation" will take place from 5 - 8 October in Naples, Italy. This year the conference is centered on the following main themes: Soil moisture dynamics across scales; Data assimilation and hydrological

submission is 31 March 2020, more information [here](#).

[Highlights of the past events](#)

eLTER at EUROLAG9

by Jaana Bäck

Continuing fruitful dialogues with transitional waters research infrastructures and networks,

The EUROLAG9 conference was held in Venice January 20-24 2020, bringing together 140 participants. eLTER arranged a booth showcasing information from several case studies in coastal sites. eLTER PLUS coordinator Jaana Bäck gave an invited talk on eLTER's scientific and operational concepts and on how eLTER interfaces with sister RIs at coastal and transitional waters sites. Throughout the conference a fruitful dialogue was continued between eLTER and Danubius-RI, EMBRC-ERIC and Lifewatch ERIC, which ultimately aims at clarifying the division of tasks, explore potential for collaborative activities, harmonising observation schemes, and interoperability at co-located sites.



Alberto Basset (Lifewatch ERIC), Jaana Bäck (eLTER RI), Sina Bold (Danubius RI), Wiebe H.C.F. Kooistra (EMBRC-ERIC) and Georg Umgiesser (ISMAR-CNR) at a coffee break in Venice, using the opportunity to discuss the possibilities for collaboration.

Feature stories

G7's GSO accepts Global Ecosystem Research Infrastructure initiative as a use case

by Michael Mirtl

Improved knowledge about ecosystem functioning is essential when addressing crucial challenges of sustainable management of limited natural resources which can in turn assure long-term human wellbeing on the planet. To meet this goal, the Global Ecosystem Research Infrastructure initiative (GERI) aims at establishing indispensable research infrastructures across continents. GERI was discussed at a high level conference of the G7 Group of Senior Officials (GSO), 3 – 5 December 2019, in Shanghai and approved as a GSO use case.



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Ilyson (DG R&I, Head of Unit for Research Infrastructures); Michael Mirtl (ELTER ESFRI Coordinator, UFZ/EAA, Germany/Austria); Pierre Quertenmont (DG R&I, GSO Secretary)

The potential for increased international cooperation on Global Research Infrastructures (GRIs) has for a long time been recognized during international high-level meetings on science policy. At the first G8 Science Ministers' meeting in 2008, the **Group of Senior Officials on global research infrastructures (GSO)** was established. GSO's mandate includes taking stock, spotting research infrastructures of global interest and identifying possible new areas of cooperation.

eLTER co-founded the **Global Ecosystem Research Infrastructure Initiative (GERI)** in the ILTER context and in collaboration with five major ecosystem RIs around the globe (NEON/USA, ICOS/Europe, CERN/China, SAEON/South Africa, TERN/Australia). Three think tank workshops were held in Australia (2016), China (2018) and the USA (2019). The primary intention was to catalyze collaboration on critical issues of common interest such as organizational requirements and system engineering, human resources in RI operations, essential environmental observations, integrated RI designs and addressing the challenge of global coverage in ecosystem research. The fruitful workshop discussions led to the realization of a historical chance for the development of world-wide RI capability to tackle new, socially and scientifically relevant questions through harmonized and interoperable RIs spanning across the continents. Suitable strategic frameworks were screened, where GERI could be presented as a case study. This fortuitously coincided with the recently adopted GSO approach to develop recommendations for Global Research Infrastructure (GRI) development triggered by such case studies.

At the 14th GSO meeting in Shanghai (2-4 December 2019), the GERI case was presented to GSO by Michael Mirtl (EC delegation & eLTER), Hank Loescher (NEON), Johan Pauw (SAEON) and Xiubo Yu (CERN), underpinning the global momentum and their respective RIs' strong commitment to GERI. The presenters advocated for environmental observation and research and therefore needed excellent research infrastructures, just as in physics and astronomy. Improving knowledge about ecosystem functioning to inform policy is vital for addressing the crucial challenge of managing limited natural resources in a sustainable manner to assure long-term human wellbeing on the planet.

As a result, the GSO approved GERI as a use case. The discussions in Shanghai underpinned that successful global RIs need complementary global strategic frameworks and – ultimately – global funding schemes to succeed. The further development of GSO scope and partnership will be triggered by use case requirements towards stakeholders and will benefit the successful implementation of GERI.

eLTERs' role in ENVRI-FAIR

by Johannes Peterseil

Building a FAIR and trusted data ecosystem

Natural and anthropogenic factors lead to environmental changes on a scale ranging from local to global. Understanding and quantification of these changes is a necessary requirement for the development of mitigation and adaptation options and for a fact-based decision-making. In order to respond to these needs and to facilitate research the development of research infrastructures have been developed. However, the necessity of interdisciplinary cooperation has been evident for decades.

Reliable predictions of environmental change require trustworthy and well-documented observations, whose digital publication should be based on the **FAIR** principles (**F**indable, **A**ccessible, **I**nteroperable and **R**eusable) and the respective common services. **ENVRI-FAIR**, a cluster project in the frame of H2020, joins important Environmental Research Infrastructures (ENVRI) in Europe in order to achieve this vision. The overarching goal is that, at the end of the project, all participating RIs have built a set of FAIR data services that enhances the efficiency and productivity of researchers, supports innovation, enables data- and knowledge-based decisions and connects the ENVRI Cluster to the EOSC.

The eLTER RI is one of seven research infrastructures in the domain of Terrestrial Ecosystem and Biodiversity contributing with its site infrastructure, data infrastructure and expertise to support the enhancement of the FAIR principles. In the frame of the project, experts of the eLTER RI are participating in the assessment of the FAIRness of data services and the definition of common implementation strategies across the different domains. The documentation of the common observation facilities with DEIMS-SDR, leadingly developed by eLTER, is one of the technical solutions provided to the ENVRI community.



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