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eLTER Tests its Prototype Cookie-cutting Tool for Exploring and Collating Data

We are continuing to develop an eLTER cookie-cutting tool, designed to make it easy to explore and collate harmonised datasets for a spatial unit like an eLTER site. Extracting data that are relevant for a site now takes a minute instead of potentially hours. This is one of the first steps towards establishing "information clusters" for each site benefiting from multiple data sources beyond data gathered at the site.

The prototype eLTER cookie-cutting tool is being tested after it was demonstrated to the eLTER PLUS community at the Mercury meeting in October 2020. It supports analyses across disciplines and domains and is used at the interface of several work packages within the eLTER PLUS project. If this proves useful it may be further developed into a permanent service for the eLTER RI.

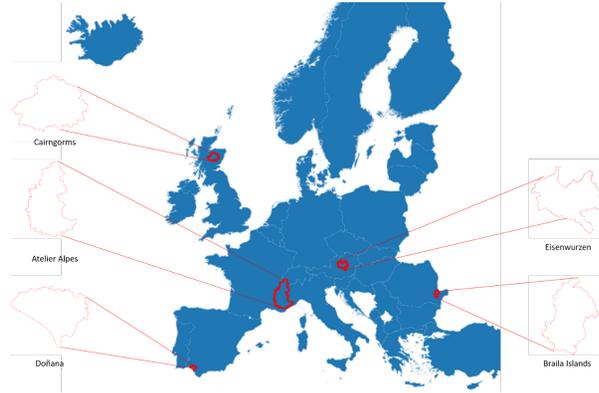


Figure 1

The problem that the eLTER cookie-cutting tool addresses is that relevant data come from various sources and is often not provided for the correct spatial area required (Fig 2).

The current version is hosted in the datalabs platform and delivers data processing workflows for gridded (raster) and non-gridded (tabular) data. It has the five pilot eLTER platforms' boundaries preloaded.

Problem: Data often not provided for correct spatial area

Raster/gridded/pixelated data available for a site e.g. modelled data for whole country BUT
Data product includes areas outside your study zone
Solution: cookie cut to the boundary of your site!

Tabular data available for a site e.g. Eurostats or national census data BUT
Data boundaries not matched to your study zone
Solution: cookie cut to the boundary of your site!

Output data .csv file .png plot

Clipping calculation By area By Population By other (e.g. land cover) Clinic boundary decision

Data types Census statistics (Tabular) Spatial output (Gridded) Another data type?

Example for the Cairngorms
Long-term Socio-Ecological Research (LTER) Platform, Scotland, United Kingdom

Figure 2

To use the tool, users browse through the central repository, set filters and select how they want to extract their site-specific data. The resulting dataset is then available with added spatial information for further processing. A preview is also displayed to allow for a visual check of the resulting dataset. The tool is being developed according to the wishes of the research community. Development and documentation efforts are ongoing as of March 2021, currently various datasets are being uploaded to test the functionality of the "cookie-cutter".

Jan Dick, Will Bolton and John Watkins (UK CEH)

Latest Research

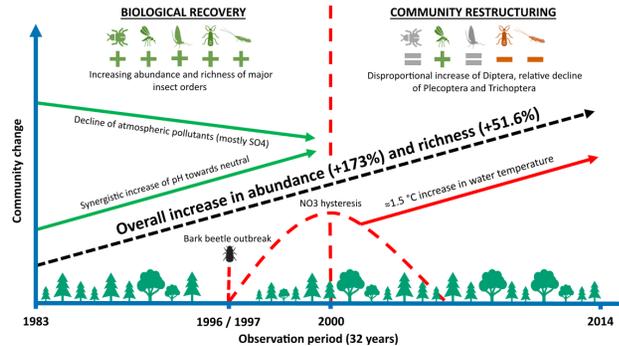
Testing the eLTER "Whole System Approach": First Result from a Long-term Biodiversity Study

The eLTER whole system approach is utilizing the broad variety of biodiversity, environmental and socio-ecological

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Recently, a new study has been published in the journal *Science of the Total Environment* titled "[Recovery from air pollution and subsequent acidification masks the effects of climate change on a freshwater macroinvertebrate community](https://doi.org/10.1016/j.scitotenv.2020.143685)".

Using 32 years of detailed freshwater macroinvertebrate and environmental data collected from the eLTER site Bavarian Forest National Park in Germany, the study aims to identify how community variability has changed over the past three decades and to elucidate the extent to which climate warming, air pollution and bark beetle infestations may affect it.



Results indicate significant increases to overall community abundance (+173%) and richness (+51.6%) which were correlated with the decline of atmospherically deposited sulphates and subsequent acidification recovery. After the turn of the millennium, nitrate fluctuations from bark beetle infestations and rising water temperatures (+1.5 °C since 1983) were linked to taxonomic restructuring and the disproportional increase of dipterans within the community.

Further information:

Baker, N. J., Pilotto, F., Jourdan, J., Beudert, B., & Haase, P. (2021). Recovery from air pollution and subsequent acidification masks the effects of climate change on a freshwater macroinvertebrate community. *Science of The Total Environment*, 758, 143685.

<https://doi.org/10.1016/j.scitotenv.2020.143685>

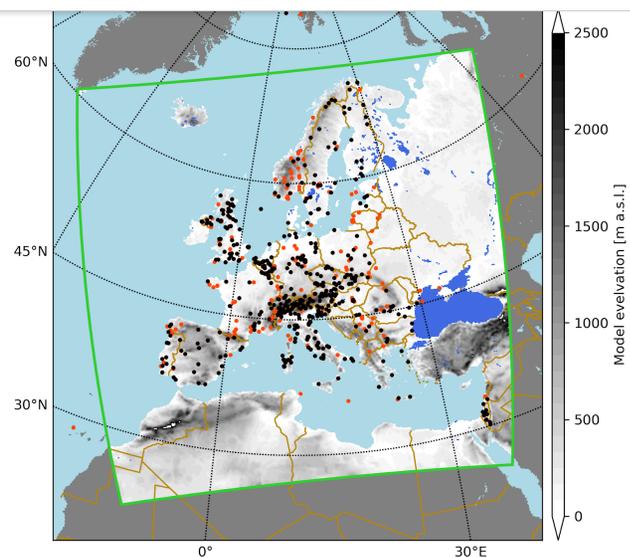
Peter Haase (Senckenberg Research Institute and Natural History Museum Frankfurt, Germany)

A Climate Service for Ecologists: Sharing Pre-processed EURO-CORDEX Regional Climate Scenario Data Using the eLTER Information System

A data paper has been published in *Earth System Science Data* journal describing how the eLTER Information System infrastructure has been expanded by a climate service data product, providing open access to pre-processed regional climate change scenario data from a state-of-the-art regional climate model ensemble of EURO-CORDEX.

The paper demonstrates a number of the strengths of eLTER including its extensive site network, Information System and ability to publish European-scale data products.

The data covers time spans from 1950 to 2100 at the site level for 702 DEIMS-registered ecological research sites located throughout Europe – including all the eLTER sites. This allows researchers to describe the climate at these sites, explore future projections for different climate change scenarios and make regional climate change assessments and impact studies.

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Such access through the eLTER Information System will save researchers time and for some it will provide access to previously unavailable data. Visualisations are available through DEIMS-SDR and the data can be freely downloaded from B2SHARE.

Further information:

Rennie, S., Goergen, K., Wohner, C., Apweiler, S., Peterseil, J., and Watkins, J.: A climate service for ecologists: sharing pre-processed EURO-CORDEX regional climate scenario data using the eLTER Information System, *Earth Syst. Sci. Data*, 13, 631–644, 2021.

<https://doi.org/10.5194/essd-13-631-2021>

Susannah C. Rennie (Centre for Ecology and Hydrology Lancaster, Great Britain)

Reporting Back

First eLTER Interim Council: Virtual Meeting for Real Issues



Photo credit: iStock

On 10 December 2020 ministerial delegations from 18 countries established the eLTER Interim Council (IC), the body tasked with discussing and approving strategic issues of the emerging eLTER Research Infrastructure (RI) planning and implementation such as legal, governance, financial and operational matters.

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[process](#). The highlight of the event which will have lasting and fundamental effects on the development of the eLTER was the preliminary decision to strive for a [European Research Infrastructure Consortium](#) (ERIC). Other matters decided by the IC was its own Rules of Procedure, and the Work Plan 2021/2022. The IC gave the PPP valuable feedback regarding the Strategic Plan and stakeholder engagement.

Many of the 50 participants explicitly appreciated the early successes of the eLTER project such as progress on tools for data search integration as service pilots for eLTER RI (cookie cutter) and representativity analysis of the pool of sites for eLTER RI. The high scientific quality of eLTER will continue to be the core value and will guide the work in establishing the RI.

The meeting was prepared with the National Coordinators in 27 countries, the coordinating team and the German ministry in charge for the host country (BMBF).

First eLTER Sites and Platforms Forum: Meeting the Site and Platform Coordinators and Collaboratively Plan for the Future



Truly pan-European: Photos taken by participants from their windows during the SPF lunch break.

13 January 2021 marked an important day for eLTER: the Sites and Platforms Forum (SPF) was initiated to serve as a platform for communication and exchange with eLTER Site and Platform Coordinators (SPCs) and local research teams to collaboratively shape eLTER RI.

Around 240 participants from 26 countries representing about 200 sites and platforms took part in the online event. In setting the scene the meeting addressed important questions:

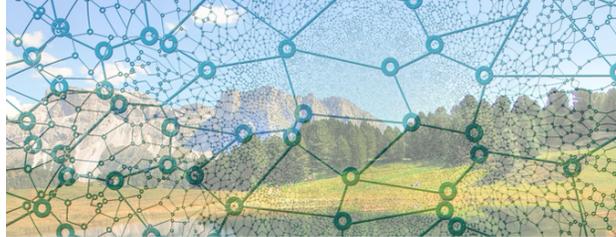
- (1) What profiles of SPCs exist in terms of the job profiles, background, expectations and needs? These aspects were digested into archetypical "SPC personas".
- (2) How should the Forum be organized in the future to meet the needs and wishes of the SPCs and best possibly involve in the eLTER design process?

Hundreds of comments, suggestions and opinions were collected through a mix of interactive sessions and polls. The high number of questions will be clustered and processed into a FAQ document. Among the other highlights of the meeting were the summaries on the eLTER ESFRI process and early successes of the eLTER projects and foreseeable tasks.

The next SPF will take place on 18 & 19 May 2021. Meanwhile, the participants are able to give further feedback on the Forum and volunteer to participate in working groups, such as on eLTER Standard Observations.

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eLTER Transnational and Remote Access call receives 20 proposals



GET FREE ACCESS TO OUR NETWORK!

Make use of our TA/RA scheme to perform your research.

Offered through Horizon 2020 project eLTER PLUS, 871128.

The [first eLTER call for Transnational and Remote Access](#) (TA-RA) proposals to be organised under the present eLTER PLUS project gathered 20 applications.

The projects are currently being run through a plausibility check and scientific evaluation. For the details and the sequence of the TA-RA related processes, [see the reference document on the TA-RA Scheme](#).

Reviews are conducted by peers from the eLTER community. The outcome of the evaluation process will be announced soon. Successful projects typically are conducted during the summer season, but users may choose any timing starting as early as April.

Given the COVID-19 virus, the strict anti-pandemic measures, budget cuts and workload redistribution across the continent, as well as the unpredictability of the situation, this number could be considered as a success. Both current and future applicants are encouraged to familiarise themselves with the [blog articles](#) written by users of previous TA schemes offered by eLTER. These provide a glimpse of the hands on experience of other scientists and will help them develop ideas for their own research and blog posts.

eLTER presents GERI achievements at the American Geophysical Union's Meeting



The American Geophysical Union (AGU) fall meeting 2020 was held between 1-17 December as an entirely virtual event.

As 1 of 6 partners in the Global Ecosystem Research Initiative (GERI) eLTER presented GERI achievements and plans in a session on "Global Environmental Measurement and Monitoring Technologies: Current Capabilities and Future Needs".

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Africa) and ICOS & eLTER (Europe) agree on objectives like joint documentation of their site networks and making data interoperable.

News from countries, sites and platforms

eLTER is extremely happy to announce that it is suspending the "News from countries, sites and platforms" section of this quarterly newsletter!

The reason being that the hard work by our whole community resulted in an overwhelming number of submitted contributions. **To appreciate the efforts of the many eLTER colleagues in various roles** (scientists, site and platform coordinators, national coordinators etc.) and the interesting topics, we decided to issue an additional newsletter under the name **"From countries, sites and platforms" entirely dedicated to news, articles, research and projects from across the vast eLTER community.**

This additional newsletter will come in early April as a warm-up to the Venus Meeting (7-16April). We are very glad to be part of such a vibrant and active community, something which is not spread as much as we would like to see. We hope to continue receiving so many inputs in the future and sharing them with all internal and external eLTER stakeholders.

Upcoming and ongoing events

eLTER Venus Meeting

 7-16 April 2021

 Online

 <https://www.lter-europe.net/events/elter-ppp-elter-plus-venus-meeting>

Naming our meetings after planets reflects the virtual working reality in pandemic times. After replacing the physical kick-offs by an entirely virtual "Mallorca" meeting in March 2020 we are now travelling from planet to planet, starting from the sun: After "Mercury" in October the eLTER PPP & eLTER PLUS projects meeting "Venus" will be held between 7 and 16 April 2021.

Between 8 and 15 April, Work package/Theme and Gearwheel related sessions will take place. 7 April marks the start of the plenary focussing on key progress, overviews and needed actions. The wrap-up plenary on 16 April will deal with the key outcomes of the sessions and the implications for other users and stakeholders.

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EGU General Assembly 2021

 19 - 30 April 2021
 Online
 <https://www.egu21.eu/>

The EGU General Assembly 2021 brings together geoscientists to one meeting covering all disciplines of the Earth, planetary, and space sciences. The EGU aims to provide a forum where scientists can present their work and discuss ideas with experts in all fields of geoscience.

The eLTER Specific session will be on Wed 28 April at 13:30-14:15pm CET: 'Whole system approach for in-situ & long-term environmental system research on life supporting systems(WAILS)'. Conveners: J. Bäck, T. Dirnböck, U. Mallast. A summary of the session can be [found here](#).

There is no deadline for registration but an early bird price deduction until 31 March will be applied.

International Conference on Research Infrastructures

 1 - 3 June 2021
 Online
 <http://icri2021.ca>

The International Conference on Research Infrastructures (ICRI 2021) is addressing the special challenges faced by major research infrastructure as the world recovers from the COVID-19 pandemic.

ICRI 2021 is supported with funding from the European Union and is hosted by the Canada Foundation for Innovation (CFI), in partnership with the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council, and with additional support from the National Research Council of Canada.

Registration for this conference is by invitation only. Invitations will be sent directly to invitees and will include detailed information on how to register.

9th ICP Forests Scientific Conference

 7 - 9 June 2021
 Zurich/Birmensdorf, Switzerland
 <https://forecomon2021.thuenen.de/conference/>

The 9th ICP FSC aims to highlight the extensive ICP Forests data series on forest growth, phenology and leaf area index, biodiversity and ground vegetation, foliage and litter fall, ambient air quality, deposition, meteorology, soil and crown condition.

Participants may also register for the 36th Task Force Meeting of ICP Forests that will take place between 10-11 June 2021 at the Swiss Federal Research Institute WSL in Birmensdorf, near Zurich, Switzerland, and for the Post-Conference Excursion from 11-12 June 2021 in the Swiss Alps.

The deadline for registration is 1 May.

3rd ESP Europe Conference

 7 - 10 June 2021
 Tartu, Estonia
 <https://www.espcconference.org/europe2020>

The Ecosystem Services Partnership's (ESP) event is part of the bi-annual cycle of ESP regional conferences around the globe. The regional conferences follow their world conferences, the most recent of which, in Germany, hosted more than 750 delegates from over 65 countries. This year's conference theme is "Ecosystem Services

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The deadline for registration is 6 June. This conference will be organised as a hybrid event, allowing for both in-person and digital participation. Participants can change between on-site or virtual participation until 24 May without extra charge.

3rd World Conference of the Society for Urban Ecology

 7 - 9 July 2021

 Poznań, Poland

 <https://sure2020.org/>

The 3rd WCSU's programme covers a wide range of topics related to urban ecological aspects and social component interdependencies in cities. The conference programme covers a wide range of topics related to urban ecological aspects and social components interdependencies in cities.

The leading concept of the SURE2020/21 conference in Poznań is to provide a welcoming forum for scholars, experts and business and administration professionals to present their research and discuss ideas, concepts, experiences and different points of view.

The deadline for registration and abstract submission is 30 April. Consult the event's website for journals' submission deadlines.

Summer School FORMON - Long-term Forest Monitoring

 22 - 28 August 2021

 Davos, Switzerland

 <https://www.wsl.ch/en/about-wsl/events/details/swissforestlab-summer-school-2021.html>

The 2021 Summer School FORMON ("Forest Monitoring to assess Forest Functioning under Air Pollution and Climate Change") aims to provide students with an in-depth understanding of the concepts, approaches, and available data infrastructure of long-term forest monitoring.

It is supported by ICP Forests (the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests under the UNECE Convention on Long-range Transboundary Air Pollution), the SwissForestLab and NFZ.forestnet (the European Network for forest research and higher education).

The deadline for applying is 30 April 2021.

5th International Conference Water Resources and Wetlands

 8 - 12 September 2021

 Tulcea, Romania

 <http://www.limnology.ro/wrw2020/wrw2020.html>

The 5th ICWR is organized by the Romanian Limnogeographical Association (RLA) in collaboration with the German Limnological Society (GLS), Polish Limnological Society (PLS), Danube Delta National Institute Tulcea (DDNI) and the Danube Delta Biosphere Reserve Authority (DDBRA).

A field trip to the Danube Delta is available to interested participants who should register for it online and pay the fee which includes transport and lunch.

The deadline for full papers submission for conference proceedings is 1 May; the deadline for the early discount registration fee is 1 June.

Euro-Global Climate Change Conference

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<https://magnusconferences.com/climate-change/>

The EGCCC will address a variety of critically important areas in relation to climate change such as greenhouse gases in the atmosphere, including carbon dioxide, nitrogen gases, and water vapor and create a global discussion to find solutions to the social and biological impact of climate change. This event is planned as a hybrid format with both on-site and virtual versions.

The deadline for abstract submission was 25 February but the page still allows for it; the deadline for group registration is 20 September but a reduction of the price will be applied before 30 June.



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