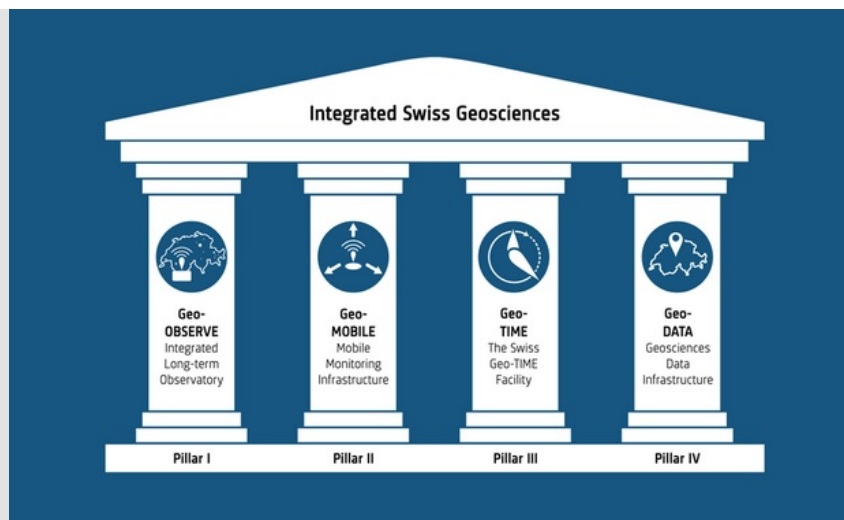




News from Countries, Sites and Platforms: July 2021



Welcome to the latest product of eLTER Communications. We've decided to present the "News from countries, sites and platforms" section of the quarterly newsletter as a separate edition, to highlight the efforts of a great many eLTER colleagues in various roles - scientists, site and platform coordinators, national coordinators and so on - who are engaged in a wide variety of fascinating eLTER activities across Europe and beyond. We are very glad to be part of such a vibrant and active community, and we invite similar examples of activities to include in future editions of "News from countries, sites and platforms". So enjoy!



The Swiss Geosciences Community presents its Roadmap for Research Infrastructures 2025–2028

The Swiss Geosciences Community completed its Roadmap for Research Infrastructures 2025–2028. It recommends strengthening the multidisciplinary nature of the geosciences by putting all activities under the roof of the Integrated Swiss Geosciences. They will be supported by four specific research infrastructure pillars (Figure 1) that provide the basis for a state-of-the-art multidisciplinary integrated and harmonized geoscientific research environment.

Pillar I, Integrated Long-term Observatory (Geo-OBSERVE) integrates the unique long-term observation efforts that make Switzerland one of the most data rich areas on Earth. **Pillar II** consists of a multi-faceted, Mobile Infrastructure which can be deployed for temporary Monitoring (Geo-MOBILE). **Pillar III**, Geo-TIME facilities (Geo-TIME) consists of a distributed network of state-of-the-art Swiss facilities to determine timescales and rates of geoscientific events. The final Pillar IV, Data Infrastructure for the Geosciences (Geo-DATA) is designed to provide a large-scale open data and analytics facility for linked geodata, as well as storage facility for unique physical samples.

These infrastructures are conceived as distributed or centralized infrastructures to foster a strong collaborative national geoscientific community, attractive for international links with related networks such as eLTER.

This roadmap is the product of a grassroots effort by the Swiss Geosciences community. The working groups recognized the urgent need to develop a holistic approach for geosciences, which allows capturing and providing an improved understanding of large-scale processes that shaped the past and will shape the future of Planet Earth.

[Read more](#)



Slovakia approves Roadmap for Research Infrastructures

On 7 April 2021, the Government of Slovakia approved the first Roadmap for Research Infrastructures (SK VI Roadmap 2020 - 2030). This is a key document for research infrastructures (RI), which not only monitors the past development and current state of research infrastructure in Slovakia, but also its connection to the economy, domains of smart specialization, international cooperation in the context of the ESFRI and Horizon Europe.

The Roadmap identifies ESFRI research infrastructures in which Slovakia participates - 13 ESFRI landmarks and 5 ESFRI projects - including eLTER ESFRI. The adoption of the document at the government level gives a completely new perspective to future development of RIs in Slovakia, including LTER Slovakia. The government instructed the Minister of Education, in cooperation with other ministers, to prepare the first action plan for 2021-2025 and to submit it for approval in October 2021.

LTER Slovakia will actively participate in the preparation of this action plan. Two facts are important for the future of the LTER in Slovakia. The first is that the government resolution explicitly states that the Action Plan should include financial support for the development of RIs, which gives hope for the improvement of technical and personnel equipment of LTER Slovakia. The second is to impose an obligation to prepare an action plan for the years 2026-2030 as well, which gives these plans a longer-term perspective.

Photo: Poloniny National Park LTSEr - Slovakia

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

Offered through Horizon 2020 project eLTER PLUS, 871128.

24 projects approved for funding from the eLTER TA-RA scheme

After a scientific evaluation by peers from the community, 24 applications were approved for funding from the [first eLTER call for Transnational and Remote Access](#) (TA-RA) under the eLTER PLUS project.

Overall 67 scientists from across 10 countries will benefit from the scheme, using the sites in 11 other countries: Germany, France, the UK, Israel, Italy, Greece, Austria, the Czech Republic, Romania, Spain, Finland.

The proposals cover a wide variety of ecosystems and topics to be researched – swamps, caverns, forests, coasts, deserts, fresh water, meadows, soil, leaves, climate change, population dynamics, microclimate, land use, etc.

Currently, due to the COVID-19 situation and different pandemic control measures across the continent, delays may occur, but eLTER PLUS offers the necessary flexibility to all its users so that they can carry out their project work whenever travel and other restrictions are lifted.

Both current and future applicants are encouraged to read and contribute to the [blog articles](#) written by users of the eLTER-TA scheme. 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.



The first Finnish Ecosystem Science Meeting: ICOS, eLTER and AnaEE networks was a success

150 people, 40 presentations, 6 countries, 4 sessions, 3 keynote and 3 workshops: this is how the first Finnish Ecosystem Science Meeting (FESM), that took place at the beginning of May, could be described in numbers.

This was the first combined meeting of these environmental research infrastructures in Finland and it was a great success. This kind of shared activity among the RIs shows how fruitful the interactions can be and demonstrates the value of integrated collaboration.

The meeting included keynote talks, thematic sessions with participants' presentations, interactive workshops, and lots of discussion. The keynotes were given by Prof. Anna-Liisa Laine from University of Zurich, Prof. Chris Evans from UK Centre for Ecology & Hydrology and DG Werner Kutsch from ICOS RI Head Office. The presentations covered both the changes we observe in the environment and ecosystems' responses to various pressures as well as what can be done to find solutions.

There were 40 presentations during 4 thematic sessions:

- "Biodiversity links to ecosystem functioning";
- "Scaling - how to use measurements for modelling at different scales";
- "Lateral element transport between ecosystems boundaries and fluxes across boundaries";
- "Natural climate solutions - ways forward to enhance land carbon sinks and reduce adverse climate impacts of land use".

The presentation abstracts are [available through the meeting webpage](#). The parallel workshops were organized in three themes: Dynamic data and data linking; Stable Isotope Measurements; Integrated modelling.

Photo: Juho Aalto, autumn fog over boreal forest (Hyytiälä).

[Read more](#)



Use of long-term hydrological measurements for mapping of susceptibility to floods within selected karst areas in Slovenia

Country: Slovenia

eALTER site: [Postojna-Planina Cave System](#)

Karst areas are characterized by solubility of carbonate rocks, resulting in predominantly underground drainage. Due to rapid flow and quick transmission of any substances, these areas are very vulnerable to pollution. Some areas, like large enclosed depressions called poljes, are also susceptible to flooding. This happens when groundwater level rises above surface or when inflow into poljes is larger than outflow through swallow holes.

These floods are regular and usually don't cause problems, but sometimes they are extremely high and cause substantial damage to infrastructure. Therefore, detailed studies for better understanding of their behaviour are necessary.

The goal of the present study was to determine the inundation of karst poljes and intermittent lakes occurrence for purposes of ephemeral flood mapping. The pilot area was Planinsko Polje, which receives most of its water directly from the [Postojna-Planina Cave system](#).

There are almost 100 years of continuous hydrological measurements on Planinsko Polje, showing that the polje is usually flooded for three months per year. Detailed analysis of these long-term data, additional use of other sources (satellite images, land use) resulted in a proposal for a process of data analysis and the definition of intermittently flooded karst areas. Such an approach was tested on two additional poljes and 15 intermittent lakes.

The results provide spatial information that is important for the preparation of national plans for protecting sources of drinking water, for the protection of groundwater dependent ecosystems, identifying the effects of environmental changes on groundwater, etc.



A "malaise trap" for the long-term monitoring of flying insects was installed in Ramat Hanadiv LTER site

Country: Israel

eLTER platform: [Ramat Hanadiv LTER Platform](#)

Israel recently had its first "malaise trap" facility installed in the country. It is expected to contribute to research on the disappearance of flying insects in the area and throughout the world.

Connected to the edge of the trap is an inverted bottle that traps flies, mosquitoes, moths, and other flying insects. The insects are weighed, identified by experts, and preserved in Israel's National Nature Collections. The trap is resistant to weather hazards, including the strong winds that blow through the region now and then, and has been fenced by the staff of Ramat Hanadiv to protect it from wildlife damage. The large-holed netting stretched over the mouth of the trap prevents the entrance of large flying animals such as birds, bats, or dragonflies, which are not part of this study.

In 2017, a paper published by a group of German researchers caused deep concern among ecologists and nature conservationists throughout the world. The researchers found that in the last 27 years there was a 76% decrease in the total flying insects' biomass in Germany, a phenomenon defined as no less than an "insect apocalypse" since the collapse of insect populations and communities threatens the entire ecosystem. Following the publication, a national, long-term monitoring program was established, led by the Entomology Lab for Applied Ecology at the Steinhardt Museum, Tel Aviv University, which conducts studies on insect conservation.

In addition to its importance at a national level, the information collected over the long term will also increase our familiarity with the local world of insects at the Ramat Hanadiv LTER site and the ways it can be protected.



Long-term monitoring of stream fish at Baixo Sabor LTsER site

Country: Portugal

eLTER site: [Baixo Sabor LTER](#)

The Baixo Sabor LTsER is located in Portugal, in the region of Trás-os-Montes, within the watershed of the Sabor river (3868 km²), which drains into the Douro river. It encompasses the lower reaches of the Sabor River and the catchment of its tributaries (1590 km²).

The research on site aims to understand the long-term consequences of river damming on freshwater and adjacent terrestrial ecosystems. As such, a thorough fish monitoring program has been [established by CIBIO-InBIO](#), which started in 2012 with a large-scale survey to set the baseline for assessing future trends.

184 sampling sites were visited, from which we selected 30 representing the main ecological gradients in the basin, sampled through electrofishing since then. 2021 marks 10 years of continuous fish monitoring in Sabor, when, besides the regular monitoring, we intend to repeat the more comprehensive survey carried out in 2012.

This is a very consistent data set, with sampling performed by the same research team, ensuring consistency in effort and methods at each sampling site over the years. Using this dataset we have been able to show how the distribution of species changes in time and space, with important data collected for Iberian endemisms and threatened species.

While sampling fish we have also been able to track the progressive invasion of the watershed by two invasive crayfish. This information has already been used to produce three scientific papers, and the dataset on fish occurrences (2012-2020) is already available in DEIMS. Two of the papers modelled the distribution of crayfish (Filipe et al, 2017) and fish (Ferreira et al, 2016), while the other provides a detailed account of temporal changes (Mota-Ferreira et al, 2021). In particular, this last paper, models how temporal variability patterns change across the watershed, showing faster community changes in streams draining directly to the reservoir, possibly due to invasion by exotic species.

Photo: Mário Mota-Ferreira, Maçãs River 2013

Further reading:

Ferreira, M., Filipe, A. F., Bardos, D. C., Magalhães, M. F., & Beja, P. (2016). Modeling stream fish distributions using interval-censored detection times. Ecology and Evolution, 6(15), 5530–5541. <https://doi.org/10.1002/ece3.2295>

Filipe, A. F., Quaglietta, L., Ferreira, M., Magalhães, M. F., & Beja, P. (2017). Geostatistical distribution modelling of two invasive crayfish across dendritic stream networks. Biological Invasions, 19(10), 2899–2912. <https://doi.org/10.1007/s10530-017-1492-3>

Mota-Ferreira, M., Filipe, A. F., Filomena Magalhães, M., Carona, S., & Beja, P. (2021). Spatial modelling of temporal dynamics in stream fish communities under anthropogenic change. Diversity and Distributions, 27(2), 313–326. <https://doi.org/10.1111/ddi.13189>



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