# News from Countries, Sites and Platforms: January 2023

*"News from countries, sites and platforms" highlights 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. So enjoy!*

# First eLTER regional cluster meeting in Brussels

On 17-18 January the eLTER coordination, National Coordinators and site managers from **Belgium, the Netherlands, Ireland and the UK gathered in Brussels** to discuss current developments in their national networks.

The meeting proved to be a great **opportunity to identify common challenges and exchange experiences with pushing forward national processes** towards establishing eLTER. Moreover, the participants were thoroughly updated on the current status of eLTER from a European perspective.

“It was a useful opportunity to share thoughts with, and learn from, other countries regarding **national eLTER development approaches and challenges**, and to clarify various issues with the Head Office team”, said Don Monteith from the UK team.

Participants were happy to learn about the development not only of the project in general, but of the other national networks: **learn from each others mistakes, borrow good ideas and improve shared practices**.

This is best summarised by Nathalie Cools from Belgium: "The cluster meeting was a very instructive and helpful meeting for us as national coordinators. We **now know better where we stand in the eLTER process compared to our neighbouring country networks**.”

*Photo: Participants during the first eLTER regional cluster meeting in Brussels.*

# Microplastics in the snowpack of the LTER Istituto Mosso site, NW Italy

**New research on microplastics using eLTER data has been published**. Microplastics (MPs), which are defined as all plastic particles smaller than 5 mm, can create health problems for all living organisms, including humans, due to their very small size. Recent research has shown that, **unexpectedly, mountain snowpack can store high amounts of MPs**, derived from both atmospheric deposition and local sources (e.g., tourism).

During the **2020-2021 winter**, the team investigated the MP content of snow at the high-elevation LTER Istituto Mosso site (NW Italian Alps, 2900 m a.s.l.). We found an average **density of 337 particles/L**, in line with studies conducted in polluted mountain areas (e.g., European Alps), although much higher than densities found in other remote areas (e.g., Everest; Antarctic).

**Direct atmospheric fallout** was the main driver of MPs deposition, while the influence of local anthropogenic activities was secondary. Indeed, in the winter 2020-2021, due to the COVID-19 pandemic, there was a **limited flow of skiers** near the study area, thus reducing the in-situ contamination (e.g., from clothes and ski equipment).

Given the relevance of snow for mountain and lowland ecosystems and the relative proximity of several mountain chains to pollution hot-spots, the **potential dangers posed by MPs presence and release by melting snow call on engaging in the matter**.

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Photo: LTER Istituto Mosso site


## LTER Portugal assists in publishing a paper on importance of grazing

Research at the Montado LTSER platform has **resulted in a globally interesting paper** entitled **“Grazing and ecosystem service delivery in global drylands”** published in Science 378, 915–920 (2022).

This is particularly important when we know that livestock grazing on ecosystem services is a hotly debated topic and a challenging one. In this paper, the grazing effect was assessed, taking into account multiple variables and different properties of rangelands such as soil, climate and biodiversity.

The participation of Portuguese researchers in this publication was possible due to the **importance of Montado ecosystems** and the amount of data collected in this LTSER socio-ecological platform.

This short video summarises the most important conclusions. Check it out!

*Figure: Screenshot from the video on “Grazing and ecosystem service delivery in global drylands”*

Grazing research video


# Karst research at LTER Slovenia sites presented in a new video

The **Karst Research Institute at the Research Centre of the Slovenian Academy of Sciences and Arts** (ZRC SAZU) is the leading partner of the LTER Slovenia consortium which belongs to eLTER. Within the consortium, multidisciplinary research focuses on karst areas, regions characterized by water-soluble rocks, which results in the absence of water at the surface, as water flows mainly underground through fractures.

On the surface, the most characteristic karst landforms are **karst plateaus and various large depressions, ranging from small sinkholes to spectacular collapses and very large poljes** (large, flat-floored depressions). Below ground there are various cavities, from tiny fissures to large horizontal or vertical caves. Data collection in karst areas is particularly time-consuming and sometimes life-threatening as cave exploration is generally difficult. Such data are extremely valuable.

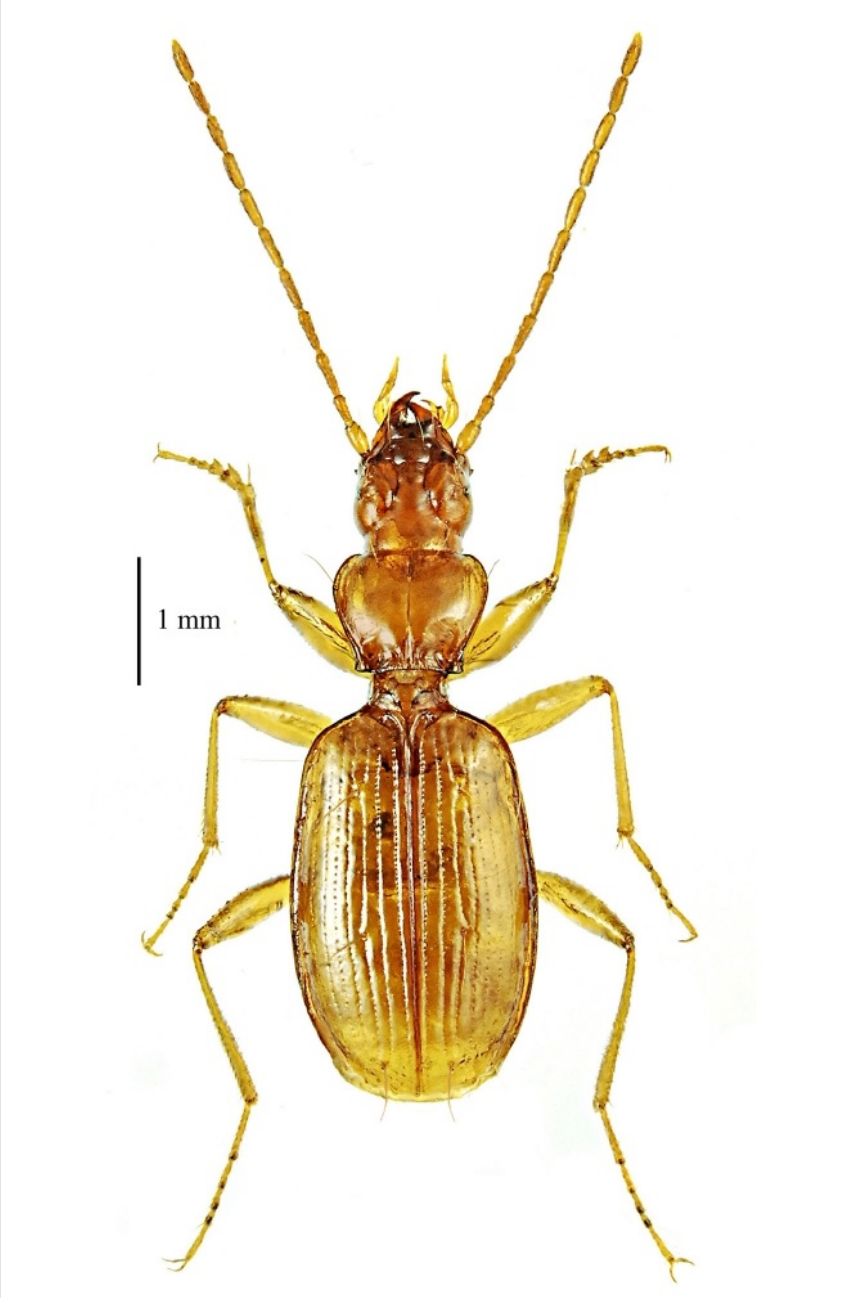
There are two eLTER sites managed by the Karst Research Institute ZRC SAZU that are dedicated to the underground part of the karst system:

1. **The Postojna-Planina Cave System** is a globally exceptional site of subterranean biodiversity with 117 species of animals specialized for life underground. Of these, 47 species have been scientifically described, and more than 10 species are awaiting formal taxonomic description.

2. **The Škocjan Caves** are registered as a UNESCO World Heritage Site and protected by the Ramsar Convention. Both sites are also internationally renowned tourist attractions that have major socio-economic impacts that must be taken into account when making conservation plans.

The LTER Slovenia team prepared a new video on the karst research done on its sites which you can see for further information.

Karst research video




# Duvalius landii, a new species of beetle in the “Montagna di Torricchio” LTER site

The Riserva Naturale Montagna di Torricchio is a protected area in the Central Apennines, Italy. During a recent survey of the reserve's insect biodiversity, directed by Dr. Federico Landi, a **new species of beetle was found**.

As reported by Magrini (2021), Duvalius landii is a **medium to large species of beetle** that lacks eyes and pigmentation. It belongs to the straneoi group, cirocchii subgroup (sensu Magrini 2017)

**References**

Magrini P., 2017 - *Revisione dei Duvalius Delarouzée, 1859 dei Gruppi bensae e straneoi (sensu Magrini 1997-1998), con descrizione di un nuovo taxon (Coleoptera, Carabidae, Trechinae) - Giorn. it. Ent., Cremona, 14 (62): 595-626.*

Magrini P., 2021 - *Una nuova specie di Duvalius Delarouzée, 1859 delle Marche (COLEOPTERA, CARABIDAE, TRECHINAE). Estratto dagli Annali del Museo Civico Naturale "G. Doria" Vol. 114 - 28 2021.*

*Figure 1: Duvalius landii n. sp. (holotypus ♂): habitus, CM. Taken from Magrini (2021)*

*Spooked deer in a romantic setting. Photo by team BaixoSabor (Portugal)*

## LTER Portugal: participation in LIFEPLAN - A Planetary Inventory of Life

The LTSER Sabor site in the Northeast of Portugal has been participating in the LIFEPLAN project for the last two years. LIFEPLAN is coordinated by Helsinki University, with several partners across the world aiming to **assess the global diversity of a wide diversity of terrestrial taxa, including birds, mammals, insects, plants, and fungi**.

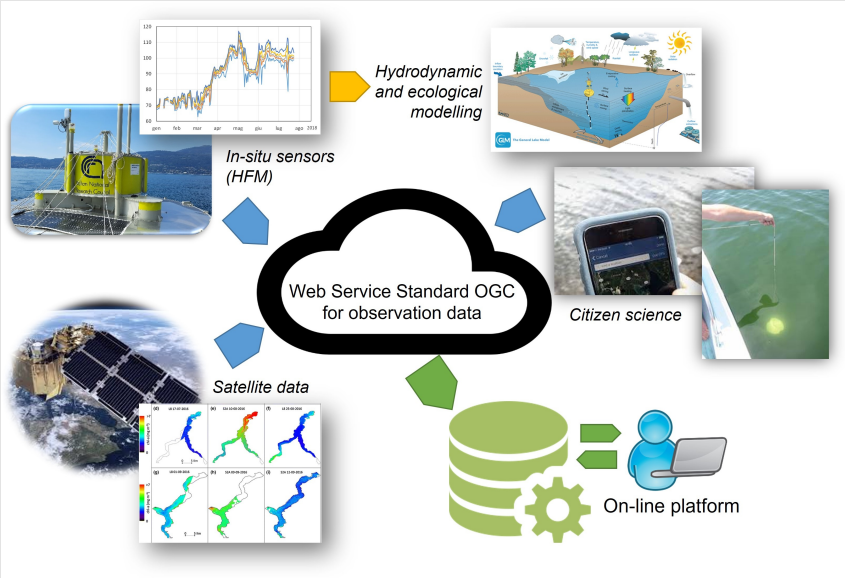
Using the most recent advances in sampling methods, as well as in molecular, bioinformatic, bioacoustics and statistical analysis, the project aims to set the standards for **next generation monitoring of biodiversity**.

Besides the field data collection, that ranges from biological samples to acoustic data, they have been participating in the **creation of a reference**

**library of bird sounds and local scale tuning of automatic identification algorithms**.

At the end of 2022, the **second field sampling campaign came to an end** and the team started to plan the switching of sampling sites. This happens at the end of every year between a natural and an urban site, and should continue for the next four years, sampling for six years in total.

**Thousands of insect, soil, pollen and spore samples, and millions of pictures and audio recordings**, are being shipped and transferred through the cloud across the world to feed one of the most ambitious, globally distributed and systematically collected biodiversity datasets to date.




## In-situ sensors, satellite images and citizen science to improve lake quality and management

The cross-border project SIMILE (Italian acronym for **"System for the Integrated Monitoring of Insubric Lakes and their Ecosystems"**) financed within the Interreg Italy-Switzerland Cooperation Programme 2014-2020, is coming to an end. SIMILE **focused on three subalpine lakes, two of which, Maggiore and Como**, belonging to the LTER Italy network.

The project's general objectives were the **improvement of lake monitoring and the strengthening of the coordinated management of water through an intensification of stakeholders' participation**. SIMILE aimed to test and develop an innovative monitoring approach, integrating satellite data, in-situ high frequency sensor data, and user-contributed georeferenced data through a citizen science approach. The main output of the project is a platform to visualize, combine and analyze the data provided by the different monitoring systems, as well as long-term series of water quality data.

The project benefited from the strict collaboration of both scientific and institutional partners, such as **Politecnico di Milano, SUPSI, CNR IRSA, Fondazione Politecnico di Milano, Repubblica e Cantone Ticino**, and from the involvement of several stakeholders, including local authorities, associations, environmental groups, and different grade schools.

*Figure: SIMILE scheme*


## LTER Portugal presents eLTER research at three events

The research team of LTSER Estuaries, Portugal, participated at an event in November to mark National **Day of the Sea**. The event, which was held at the Centro de Artes e Espetáculos, Figueira da Foz, focused on the **valorisation of aquatic resources from the river to the sea**. The team presented work undertaken in projects conducted around the Mondego estuary LTSER platform that have addressed the valorisation and sustainability of marine resources.

Estuarine systems such as Mondego estuary are **biodiversity-rich and provide many ecosystem services**, mainly to the local population.

The research team also presented their work at another event in November, the **INOvC+ Smart Innovation Technology** meeting held at the University of Aveiro.

The Portuguese Ecological Society (SPECO) also presented the LTER Portugal documentaries at the **SFE2-GfÖ-EEF joint meeting - Ecology & Evolution: New perspectives and societal challenges** - held last November 2022 in Metz, France.

The documentaries attracted a lot of interest at the EEF stand, where dissemination materials from each Ecological Society of the Federation were

showcased. The **documentaries proved to be an excellent instrument for communication** and dissemination, taking the LTER/LTSER concept and its importance further.

*Photo: Presenting LTSER Estuaries at the National Day of the Sea*

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