

PALAEARCTIC GRASSLANDS

Journal of the Eurasian Dry Grassland Group



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Palaeartic Grasslands

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Palaeartic Grasslands is freely available at <https://edgg.org/publications/pg-journal> and new issues are announced to all EDGG members. All content (text, photos, figures) in *Palaeartic Grasslands* is open access and available under the Creative Commons license CC-BY-SA 4.0 that allow re-use provided proper attribution is made to the originators ("BY") and the new item is licensed in the same way ("SA" = "share alike").

Submissions following the [Author Guidelines](#) are welcome by the deadlines of the four issues: 31 January, 30 April, 31 July and 31 October.

Scientific articles (Research Articles, Reviews, Forum Articles, Scientific Reports) should be submitted to the Receiving Editor Jürgen Dengler (dr.juergen.dengler@gmail.com) and will then undergo peer review, so publication in a certain issue cannot be guaranteed.

All other text contributions (News, Announcements, Short Contributions, Book Reviews, Glimpses of a Grassland, Forthcoming Events) should be submitted to Idoia Biurrun (idoia.biurrun@ehu.es).

Photo contributions (photos for general illustrative purposes with captions; Photo Stories) and contributions to the section **"Recent Publications of our Members"** should be submitted to Rocco Labadessa (rocco.labadessa@gmail.com).

Contributions to Photo Competitions should be submitted to Edy Fantinato (edy.fantinato@unive.it).

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Editorial

Dear readers,

As we make the first issue of *Palaeoctic Grasslands* in 2024 ready for publication, we find ourselves amidst a world still struggling with tough realities. While the promise of spring whispers through the emergence of vibrant early blooms like crocus, snowdrops, daffodils, and iris, we can't turn a blind eye to the ongoing conflicts in the Middle East and Ukraine, impacting countless lives.

Amidst these challenges, we also come face to face with the undeniable truth of our changing climate. According to the Copernicus Climate Change Service, 2024 kicks off with another record-breaking month – not only marking the warmest January on record but also a 12-month period exceeding 1.5°C above the pre-industrial reference period. It's clear: rapid reductions in greenhouse gas emissions are crucial to halt rising global temperatures.

In the midst of these pressing issues, the *Palaeoctic Grasslands* community remains committed to its mission to promote scientific inquiry and environmental stewardship. In this issue, we're excited to unveil several upcoming activities and initiatives:

- **Photo Competition:** We invite our readers to capture the beauty and diversity of grasslands in our new photo competition. Check out the submission guidelines and deadlines inside.

- **Financial Report:** Get an in-depth look at the contributions received in 2023 and an update on our current financial status. Plus, we're calling for continued support to sustain our efforts.
- **Grants Update:** Learn about the two new grants awarded in December, supporting innovative research and conservation efforts.
- **Save the Dates:** Make sure to mark your calendars for the upcoming Eurasian Grassland Conference in Bolzano, Italy, where scholars and practitioners will gather to exchange ideas on grassland vegetation, ecology, and management. And don't miss out on the exciting opportunity to join us for the EDGG Field Workshop 2024 in the SW Alps, promising immersive fieldwork, networking, and knowledge sharing amidst picturesque landscapes.

Wishing you all a successful new year filled with exciting events and fruitful outcomes. Together, let's work towards a future where peace and prosperity flourish.

Warm regards,
Alireza Naqinezhad



Crocus albiflorus, subalpine grassland, Switzerland. Photo: J. Dengler.

News

EDGG Project “Preparation of the species composition data in the GrassPlot database” completed

In the “COVID year” 2020, when money could not be spent for the “usual things” like travel grants to attend the events of IAVS and its subgroups, IAVS sought different ways to spend their income in a meaningful manner. In this year, IAVS Working Groups could apply for larger projects than in “normal” years. EDGG was successful in funding for several such projects. Among others, others, we received a grant of 5,000 EUR for the project “Preparation of the species composition data in the GrassPlot database”. Originally, it was planned to complete this project in 2021, while it finally took until February 2024. The reasons for the delay were manifold, starting with the pandemic affecting the main players of the project, the original grantee (Salza Palpurina) becoming unavailable due to maternity leave, searching a competent colleague as replacement, and finally when she was found (Francesca Napoleone) introducing her to the workflow. Meanwhile also the members of the GrassPlot Governing Board were newly elected and busy with many other things and the GrassPlot database has grown considerably compared to the time when we submitted the project proposal. Thus, we are happy to announce that we could bring the project to a good end and the promised funds could finally be shared appropriately between the now two grantees, Salza and Francesca. Many thanks to IAVS for the financial support and the patience regarding the delayed finalisation and to Salza and Francesca for their invaluable work. In the following, we briefly summarize the project aims and outcomes. [GrassPlot](#) is EDGG’s specialised database on high-quality, multi-scale species richness data in Palaeoarctic open vegetation types (Dengler et al. 2018; Biurrun et al. 2019). Originally, it was focused only on the collection of species richness data together with coordinates and well-curated methodological and environmental header data fields. This allowed influential papers on small-scale alpha- (Biurrun et al. 2021) and beta diversity (Dembicz et al. 2021a, 2021b) as well as species-area relationships (Dengler et al. 2020), and more are in the pipeline. Therefore, the GrassPlot team originally did not attempt to also harmonize the species composition data of the plots – even though they were often available. However, increasing numbers of project ideas relying on the specific data qualities of GrassPlot also needed compositional data. Thus, the GrassPlot Governing Board decided to prepare them in a ready-to-use format.

First steps for a small number of datasets were made during an ongoing project by Sabina Burrascano and Salza Palpurina. In the current project, we built on the R-based workflows developed by Salza and adjusted them further to han-

dle our meanwhile far more than 100 contributing datasets, each provided in a different format. Our approach was to extract and transform the composition data into a long table in csv format where the basic columns are plot ID, species name (as given in the source) and species importance value (e.g. % cover estimate). During the project, the composition data of 165 datasets were each transformed into one long table of identical structure. In total, these are meanwhile 122,063 vegetation plots (including subplots and 1,359,716 species occurrences). These specific long tables of the individual datasets are then merged into a single long table of all prepared datasets. This data frame can easily be subsetted to meet the requirements of individual projects and the delivered data then can be used very efficiently in R-based statistical analyses without further transformations. Meanwhile several GrassPlot projects received such datasets, and one project on species abundance distributions has already been completed and published (Ulrich et al. 2022). With the available composition data, GrassPlot became also relevant for the European Vegetation Archive (EVA; Chytrý et al. 2016) and its global counterpart “sPlot” (Bruehlheide et al. 2019). Thus, in February 2023, GrassPlot already contributed the then semi-prepared composition data of 14 European datasets to EVA and of 11 extra-European datasets to sPlot. Thus, GrassPlot Consortium members meanwhile can also opt-in to EVA and sPlot paper projects.

With the finalisation of the funded EDGG project, GrassPlot’s work on composition data is not finished. On the one hand, there is a regular inflow of new datasets to GrassPlot that need to be prepared. Currently, there are about 35 datasets waiting for the preparation of the composition data. The better data contributors follow the GrassPlot data standards, the easier, faster and less error-prone this step is. On the other hand, the plant taxonomy of the combined long table of GrassPlot is still not harmonized but follows the nomenclature in the individual sources.

Thus, for a more effective use, the harmonization is the next step. We will adjust it to the “Euro+Med augmented” standard introduced in the context of the Ecological Indicator Values for Europe (EIVE) 1.0 for vascular plants (Dengler et al. 2023). Meanwhile, a new version that also includes bryophytes and lichens is in preparation for EIVE 1.5 (Chusova et al. in prep.). The advantage of this approach is that it does not only provide a documented taxonomic backbone, but also a transparent R-based workflow of matching the taxonomies.

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Phleum alpinum and *Agrostis capillaris* in a mesic meadow near Tännälden, Sweden. Photo: I. Dembicz.

EDGG Fund for Ukrainian Scientists and General Fund: Funded Projects and New Call for Donations

Report on donations received and funded projects

In May 2022, we initiated the "EDGG Fund for Ukrainian Scientists" to gather donations in support of Ukrainian researchers. Thanks to the generosity of donors like Hans Henrik Bruun, Jürgen Dengler, and several anonymous contributors, we amassed a significant sum of 1902.82 EUR in 2022. This funding was utilized to support three Ukrainian scientists, each receiving 500 EUR for their respective research projects (as outlined in the December issue of *Palaeoarctic Grasslands* in 2022).

Throughout 2023, we received additional donations totaling 963.12 EUR, followed by a contribution of 250 EUR in 2024 from donors such as Nina Roth, Jürgen Dengler, and others. We extend our heartfelt gratitude to all who have contributed. Moreover, during the Eurasian Grassland Conference in Hungary, an auction organized by Orsolya Valkó raised 765 EUR, further enhancing our financial resources.

The donations designated for the Ukrainian Fund were allocated to support two applications received from Ukrainian researchers. Following evaluation by the Grant Committee, we assigned 500 EUR to Olena Shchepleva for her project titled "Ancient Defensive Earthworks as Refuge of Steppe Flora in Ukraine." Additionally, we allocated 500 EUR from our 2024 IAVS baseline funding to Nataliia Velychko for her project on "The Preliminary Results of the Study of the Flora of Kurgans in the Forest Zone of Ukraine."

Congratulations to both grantees. We eagerly await the outcomes of their projects, which will also be published in *Palaeoarctic Grasslands*.

Call for future donations

EDGG remains active in its commitment to sustaining the "Fund for Ukrainian Scientists" for as long as the situation persists. We urge all EDGG members to continue supporting Ukrainian grassland scientists through further donations. Every contribution, regardless of size, is immensely valuable. Donors can conveniently make donations via credit card through our online form or via bank transfer to the IAVS

account. When making a donation, please specify the purpose of your payment accurately.

We maintain two accounts – one in USD and the other in Euros. Donors have the option to choose between these two accounts.

- **(A) Credit card payment via online platform:**

You can make your payment [here](#). Please indicate whether you wish for your name as a donor to be publicized. Also, specify whether the donation is for the "EDGG General Donation Fund" or "EDGG Ukraine Donation Fund."

Fees: 0.20 USD per transaction.

- **(B) Bank Transfer to IAVS Euro Account:**

BIC/Swift code: SNS BNL 2A

IBAN: NL40 SNSB 0921 5290 23

Recipient: Internationale Vereniging voor Vegetatiekunde

Subject Line: "EDGG General Donation Fund" or "EDGG Ukraine Donation Fund"

Fees: 0.07 EUR per transaction.

Unfortunately, we are unable to gather details such as donors' affiliations and their preferences regarding the publication of their names. Therefore, if you wish for your name to be acknowledged as a donor, please indicate your consent in the communication line. Alternatively, you can simply send an email to Alireza Naqinezhad (anaginezhad@gmail.com) and Jürgen Dengler (dr.juergen.dengler@gmail.com) with your name, date, and amount of your donation.

Alireza Naqinezhad, Mazandaran, Iran & Sheffield, UK
anaginezhad@gmail.com

Book reviews in *Palaeoartctic Grasslands*: call for suggestions

Book reviews have been an integral element of *Palaeoartctic Grasslands* and its predecessor *Bulletin of the European Dry Grassland Group*. However, it is a while since the last such reviews have been published under the coordination of our former Book Review Editor, Peter Török (Török 2020; Dengler 2021).

We would like to resume this tradition and thus the Chief Editors appointed Jürgen Dengler to coordinate this task from now on. We would like to review new books on grassland ecology, conservation and management as well as titles with a wider scope (e.g. ecology, flora, fauna in general, analytical methods) that are relevant to grassland ecologists.

We therefore welcome proposals:

- From publishers or authors who would like to suggest a certain title for review.
- From members of the Editorial Board of *Palaeoartctic Grasslands* and other active EDGG members who would like to review a certain new book.

The principle always is that the publisher (or the authors) provides a free copy of their book and the person who does the review receives this free copy in exchange for her/his service of reviewing. Published reviews do not only appear in PG but are also highlighted on [our website](#).

Books that have been published during the previous two years, as well as software tools, apps and comprehensive webpages, are suitable for reviews. When suggesting an item to be reviewed or to review an item, we cannot guarantee that this will happen, but the Book Review Editor will do his best to ensure that things work out. Editorial Board Members of PG can also register with him their general interest in doing reviews without specifying a certain book. Reviews typically should have a length of 0.5 to 1 page.

I look forward to your suggestions!

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Grasslands in Shemiranat, Tehran Province, Iran. Photo: M. Alizadeh.

Call for photos for *Palaeoarctic Grasslands*

As usual, we are looking forward to your contributions to the Photo Story section, as well as your photographs for general illustrative purposes.

Submissions for the **Photo Story** section are always welcome. Photo Story is an open space where members can submit their own photo collection on a certain grassland-related topic of their choice. High-quality photos should be provided together with their captions (at least species names or landscape description), a brief text and possibly other graphical elements (like a map or a drawing). The selection of photos should fit within 4-15 (-20) pages and the contributors should propose a preliminary layout (in PDF or MS Word format), which will be finally typeset by Editors. As an example, you can look at the Photo Stories published in previous issues. As with scientific articles, Photo Stories undergo a review process with an emphasis on the quality of the photographs. There is no guarantee that they will be accepted without changes, and late submissions may be published in a subsequent issue.

We would also like to encourage you to contribute to the **Global Vegetation Project** with your vegetation photographs. Please take a look at the [project website](#) for an overview of the global map and the data entry form.

If you want to contribute to Photo Stories, or if you simply want to help us with enriching this aspect of the journal, please submit your photos together with the required information to Rocco (rocco.labadessa@gmail.com).

Deadline for photo submissions is **30 April 2024**.

Rocco Labadessa, Bari, Italy
rocco.labadessa@gmail.com

Call for Photo Competition “Neglected Grasslands”

Palaeoarctic grasslands encompass a wide variety of grassland habitats. Some of them are widespread and represent the grassland type when we commonly speak of grasslands, e.g. hay meadows. However, some other types of grassland habitats are less well known (e.g. coastal grasslands, halophytic grasslands, etc.) and deserve to have a place in people's consciousness as well. Could you provide a picture of a little-known grassland type?

You are invited to send up to three high-quality photographs within the competition theme (full size JPEG or TIFF images, at least 300 dpi) together with captions giving a short title or description and information on the subject (species name, date, place name). The Photo Jury (see imprint) will select the best photographs. The three best shots will be awarded with full space in the next issue, but we reserve the right to use other submitted materials for illustrative purposes in other parts of the issue. If you want to take part in the competition, please submit your photos together with required information to Edy (edy.fantinato@unive.it) by **30 April 2024**.

Edy Fantinato, Venice, Italy
edy.fantinato@unive.it



Semi-desert grassland in the Tianshan Mountains, Xinjiang, China. Photo: Q. Xianguo.

18th EDGG Field Workshop

Dry grasslands of South-Western Alps

Aosta, Susa and Durance valleys, Italy and France, 1–11 June 2024

Second Call

Introduction

The EDGG Field Workshops are research expeditions dedicated to the acquisition of high-quality data of Palaeoartctic non-forest vegetation types, using a standardized methodology (Dengler et al. 2016). The fieldwork includes vegetation-plot sampling with documentation of all encountered vascular plant, bryophyte, and lichen species, as well as recording crucial structural and environmental parameters. The data are sampled in two kinds of plots: vegetation plots of 10 m² and "EDGG biodiversity plots", nested-plot series with grain sizes ranging from 1 cm² to 100 m² and excep-

tionally 1000 m². Also, in some cases this sampling involves other taxa, like orthopterans, leafhoppers, spiders, butterflies, etc. Such a Field Workshops usually leads to several scientific publications focusing either on patterns and drivers shaping the sampled vegetation or differentiation of plant communities.

The forthcoming 18th EDGG Field Workshop will take place in the South-Western Alps. Conducted from June 1st to 11th, 2024, the event will focus on three valleys with continental climate: Aosta and Susa in Italy, and Durance in France. This Field Workshop is the final one in a series of Field Work-

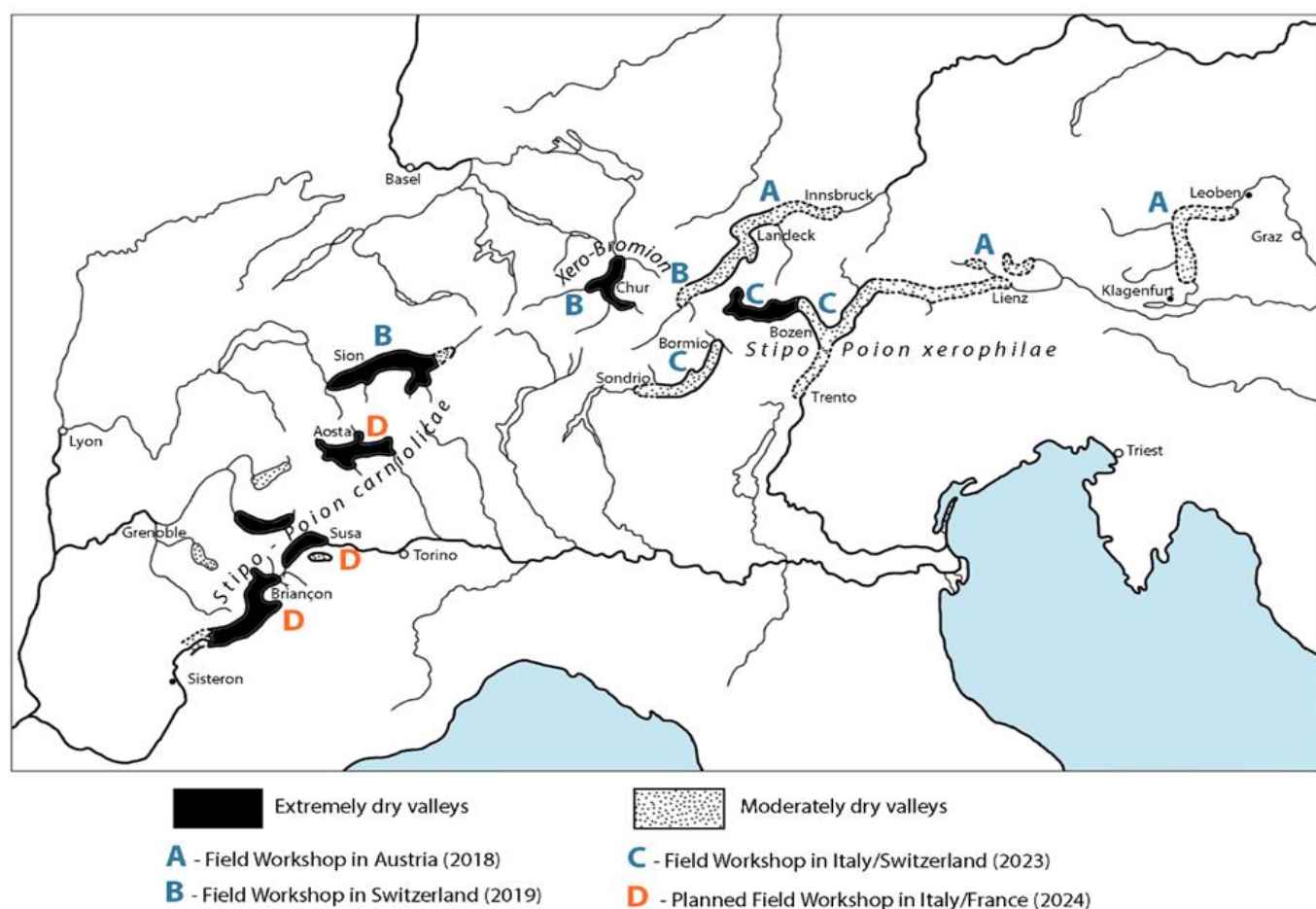


Fig. 1. Overview of the inner-alpine dry valleys based on the map of Braun-Blanquet (1961) with indication of the conducted and planned EDGG Field Workshops.

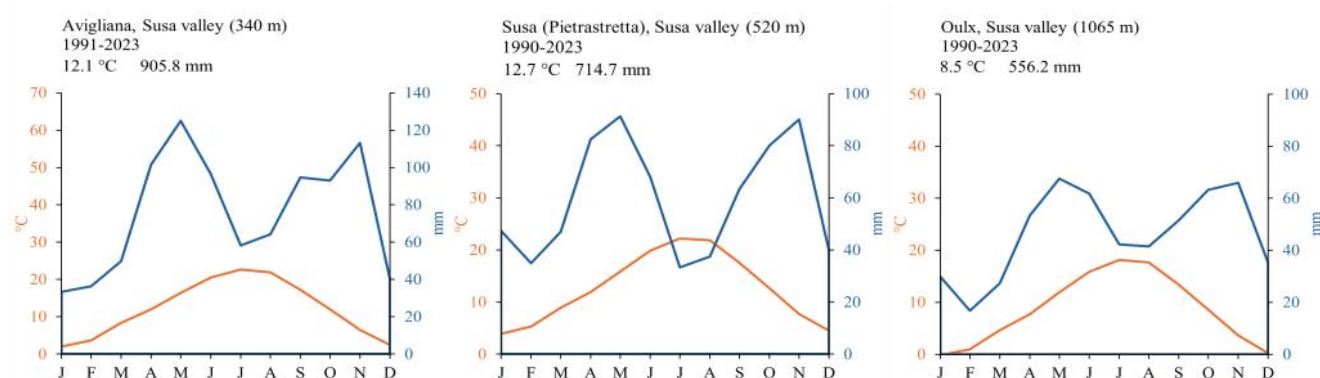


Fig. 2. Climate of the lower (Avigliana), medium (Susa) and upper (Oulx) Susa valley. Data is from ARPA Piemonte meteorological stations.

shops conducted in inner-alpine dry valleys (Fig. 1), after the successful Field Workshops in Austria (2018; Magnes et al. 2021), Switzerland (2019; Bergauer et al. 2022), and NE Italy (2023; Angelini et al. 2024). Two EDGG biodiversity plots have already been sampled also in the Aosta Valley (Wiesner et al. 2015).

Together with the expected data from the 18th Field Workshop, and additional data sampled with the same methodology by EDGG members, we will have about 100 nested-plot series and approximately 600 standardized 10-m² plots from the majority of the deep valleys of the Alps, allowing for comprehensive biodiversity analysis and a modern syntaxonomic revision of the complicated situation of the classes *Festuco-Brometea* and *Sedo-Scleranthetea* in the Alps, which are here under the influence of steppic, temperate, alpine and Mediterranean floristic elements.

Characterisation of the three study valleys

Please note that the cited syntaxon names are largely taken from historic or local to regional studies and are not harmonized. Hopefully that situation may change after our planned syntaxonomic revision.

Susa Valley

The Susa Valley is the largest valley in the Piedmont Region of Italy, spanning 80 km in length and oriented from west to east. The climate of this inner-alpine region is dry, with more sub-Atlantic features in the east and a more continental climate in the west, with annual precipitation ranging from 600 to 900 mm (Fig. 2). The geological substrate varies, with serpentine rocks in the lower part of the valley and limestones, calcescists, and gneiss in the medium and upper parts. The unique climate of the valley allows for the presence of many Mediterranean species, particularly on south-facing slopes, such as *Juniperus oxycedrus* and *Quercus ilex*, as well as herbaceous species like *Asterolimon linum-stellatum*, *Euphorbia sulcata*, and *Linum strictum*.

Dry grasslands are abundant in the valley (Fig. 3), mainly occurring as secondary communities, associated with *Quercus pubescens* and *Pinus sylvestris* forests in the medium and upper regions of the valley, respectively. Due to the cessation of livestock management, many species-rich grasslands are currently under serious threat from shrub and tree encroachment. The vegetation and management of these grasslands have been extensively studied within the



Fig. 3. Dry grasslands in Susa Valley. Photo: A. Gorlier.



Fig. 4. *Stipo capillatae*-*Poion carniolicae* grassland in the Susa valley. Photo: A. Gorlier.

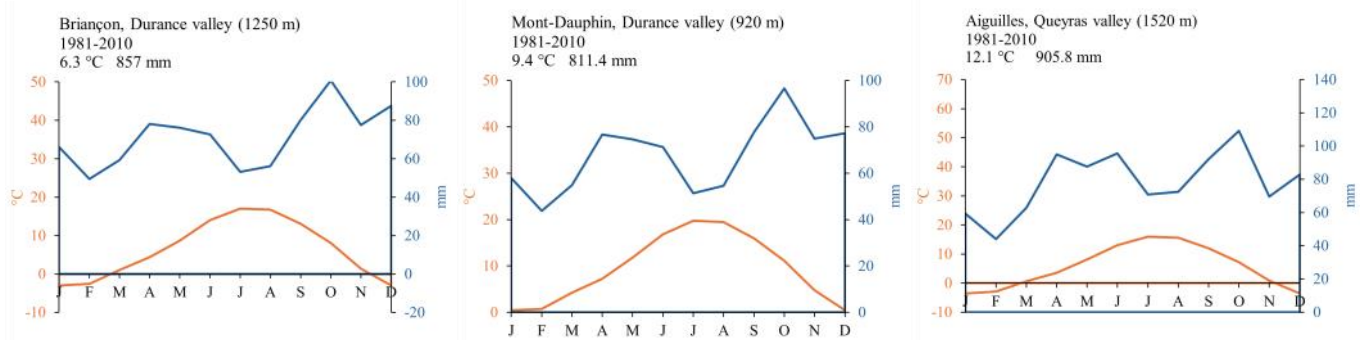


Fig. 5. Climatic diagrams for Briançon and Saint-Crépin in the Durance Valley, and for Aiguilles in the valleys Queyras. Climate data is from the CHELSA database (Karger et al. 2017, 2018).

LIFE 'Xero-grazing' project, which reintroduced sheep grazing as a management tool for the conservation of these valuable habitats (Ravetto Enri et al. 2019; Nota et al. 2021).

From a syntaxonomic perspective, grasslands of the alliances *Diplachnion serotinae* and *Stipo capillatae-Poion carniolicae* (Fig. 4) are present, with various associations ("Contorteto-Diplachnetum", "Triniesto-Stipetum", and "Koelerieto-Helianthemetum apennini") described by Braun-Blanquet (1961). The presence of *Xerobromion* communities is also possible. Additionally, on the flat valley bottom of the upper valley, more mesic *Bromion erecti* meadows are found. Dominant grass species in these communities include *Bromus erectus*, *Stipa pennata*, *Chrysopogon gryllus*, *Heteropogon contortus*, and *Festuca ovina* aggr. Among others, numerous orchid species thrive here, including abundant populations of *Anacamptis pyramidalis* and *Ophrys holosericea*.

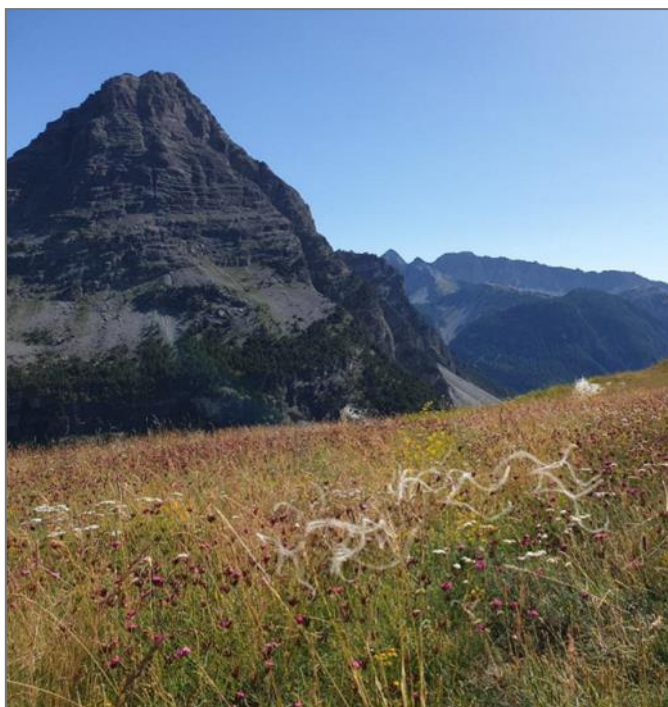


Fig. 6. Dry grasslands of *Stipo capillatae-Poion carniolicae* in the Durance Valley in France. Photo: S. Abdulhak.

Durance Valley

The Durance Valley is the southernmost inneralpine dry valley, located in the department of Hautes-Alpes in South-Western France. Its lower section is significantly influenced by the Mediterranean climate, which gradually diminishes in the direction towards the upper reaches of the valley (Braun-Blanquet 1961). This change in climate is accompanied by shifts in the precipitation pattern, with the majority of rainfall occurring during the summer months (Fig. 5). The upper Durance Valley is linked to the Susa Valley via the high mountain pass known as Col de Montgenèvre. The valley has two primary tributaries: the Guisane in the North-East, originating from the Col du Lautaret, and the Guil, which traverses the Queyras region and originates from the foothills of Mount Viso (3841 m a.s.l.). The western boundary of the Durance Valley is delineated by the Ecrins massif, encompassing peaks such as Pelvoux (3946 m a.s.l.) and Barre des Écrins (4101 m a.s.l.), the latter being the highest summit in the Southern Alps. The valley primarily consists of sedimentary rocks intermixed with various Quaternary deposits, with notable occurrences of quartzite formations, such as those found in Saint-Martin de Queyrières.

The dry grasslands in the Durance Valley predominantly consist of steppe-like communities belonging to *Stipo capillatae-Poion carniolicae* (Fig. 6). Braun-Blanquet (1961) identified several associations within the valley: *Herniario incanae-Elytrigietum intermediae* and *Festuco valesiaca-Poietum carniolicae*, which are more prevalent in the middle and upper sections of the valley and also in the Queyras Valley, while the *Lavandulo angustifoliae-Artemisietum albae* and the *Koelerio vallesianae-Astragaletum vesicariae* are common in the lower region of the valley, influenced by a Mediterranean climate. These communities are accompanied by meso-xeric *Bromion erecti* grasslands in more mesophilous conditions.

Due to a decrease in grazing activity over recent decades, slopes that were once grazed are now predominantly covered by woodlands containing species such as *Quercus pubescens*, *Pinus sylvestris*, and *Pinus uncinata*. Particularly noteworthy is the presence of relict woodlands of *Juniperus thurifera*, which reach their northernmost limit in the Southern Alps within this area.

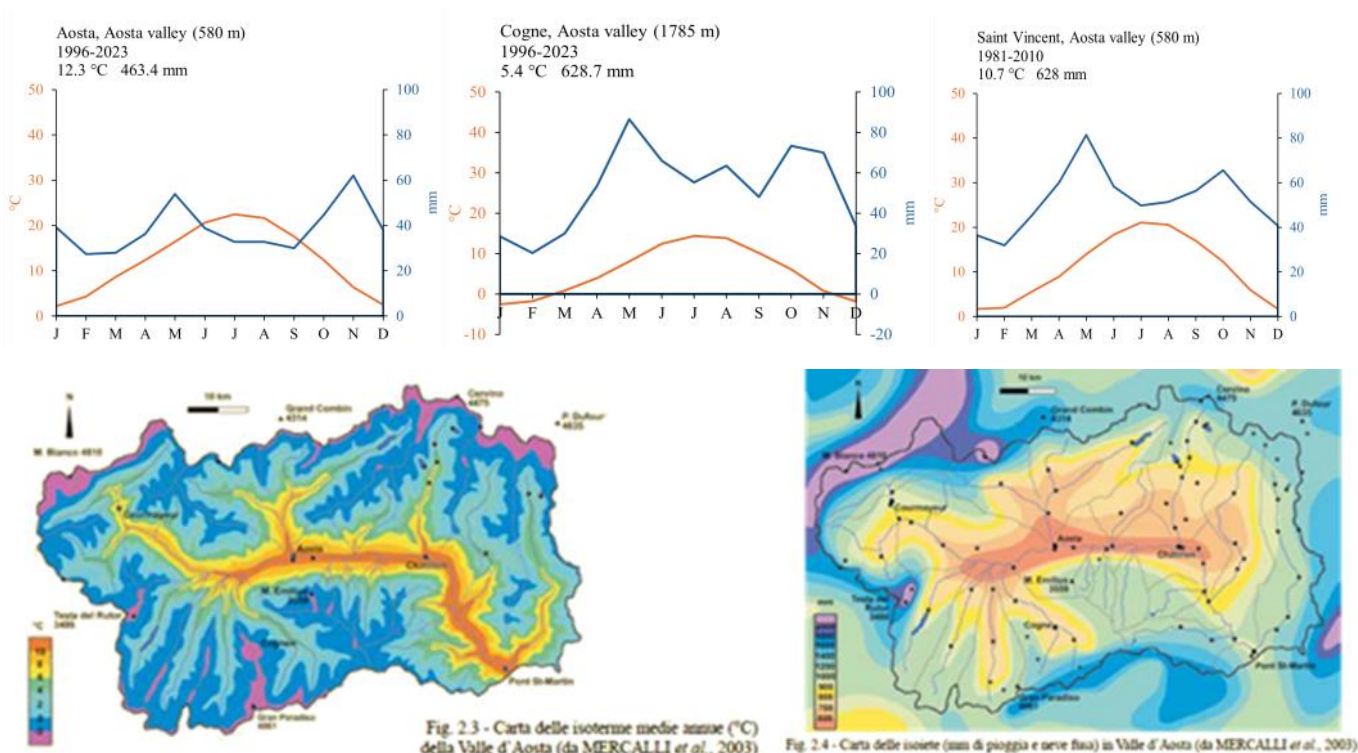


Fig. 7. Above: climatic diagrams for the Aosta Valley (Aosta and Cogne). Data for Aosta and Cogne are from 'Centro Funzionale Regione Valle d'Aosta'; data for Saint Vincent are from the CHELSA database. Below: Map of annual mean isotherms and isohyets for the Aosta Valley from Mercalli (2003).

Aosta Valley

The Valle d'Aosta is an autonomous region situated in the North-West corner of Italy, extending approximately 90 km from the border with Piedmont to the orographic barrier of Mont Blanc, the highest peak in the Alps. The main valley runs in a west-east orientation, exhibiting a marked contrast between its south-facing slope, which is warm and dry, and its north-facing slope, which is shadier and more humid.

The climate in the Valle d'Aosta is characteristic of the inner valleys of the Alps, with the municipality of Saint-Marcel experiencing the lowest precipitation of less than 500 mm per year (Fig. 7). The barrier effect from western wet air masses is influenced not only by Mont Blanc but also by surrounding massifs such as Monte Rosa, Gran Paradiso, Grand Combin, and the Matterhorn (Cervino), which entirely encircle the region.

The secondary valleys, however, generally lack this pronounced contrast. Only Valpelline and the renowned Valle di Cogne stand out. For centuries, this valley has attracted numerous botanists eager to observe species from arid and warm environments at high altitudes, such as *Astragalus alopecurus* or *Aethionema thomasianum*, which were first described scientifically in Cogne itself.

The geological substrates in Valle d'Aosta exhibit significant diversity and are often intermixed. Some areas feature outcrops of serpentinites and ultra-basic rocks, typically within a predominantly acidic context. Additionally, scattered out-

crops of calc-schist rocks can also be found, which support an exceptionally rich and distinctive flora. True calcareous rocks, however, are relatively scarce and uncommon in Valle d'Aosta. Overall, the Valle d'Aosta presents challenges from a phytosociological perspective due to frequent encounters between associations and species with distinct ecological characteristics, sometimes even within a few square meters. Mediterranean species are more prevalent in the lower reaches of Valle d'Aosta. In contrast, the central region of the valley typically harbours steppe-like grasslands (Fig. 8), with such steppic species, such as *Bassia prostrata*, *Artemisia vallesiaca*, or *Trinia glauca*.

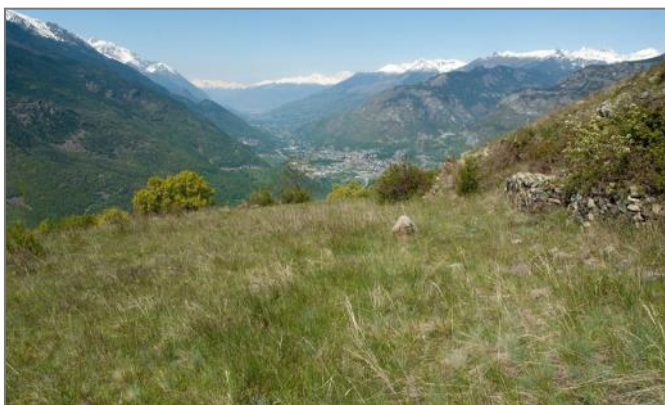


Fig. 8. *Stipa capillata* grassland in Aosta Valley. Photo: M. Broglio.

Short itinerary of the Field Workshop

Preliminary localities of the 18th EDGG Field Workshop are shown in Fig. 9.

- **1 June:** Meeting at Torino Railway Station at 15:00 and transportation to our accommodation in the Susa Valley. Joint sampling with introduction on Biodiversity plots sampling methodology (next to guesthouse).
- **2 June:** Lower Susa Valley (municipalities of Avigliana and Villar Dora); dry grasslands on serpentine or ultramafic rocks.
- **3 June:** Middle Susa (municipalities of Bruzolo, Bus-soleno, Foresto, Mompantero, and Susa); dry grasslands on moraine deposits with a calcareous matrix.
- **4 June:** Upper part of the Susa valley (municipalities of Salbertrand and Oulx); dry calcareous grasslands.
- **5 June:** Moving to Durance Valley. Sampling in the vicinity of Briançon (upper Durance).
- **6 June:** Lower Durance (Châteauroux-les-Alpes, Mont-Dauphin).
- **7 June:** Middle Durance and Queyras Valley.
- **8 June:** Moving to Aosta valley. Sampling in the vicinity of Saint-Vincent.
- **9 June:** Sampling in Valle di Cogne.
- **10 June:** Upper and Middle Aosta Valley.
- **11 June:** One stop in the Lower Aosta, and travelling to the Torino Railway Station. The FW finishes at 16:00.

Technical information

Accommodation and travelling

We will stay at three different places, one in each of the valleys: Susa (Azienda Agricola San Giuliano di Gai Pier Luigi e figli), Durance (cApVerb) and Aosta (Hostel Nus). We plan to travel in one rented 9-seat minibus and several cars. If you have a possibility to come with your car, please contact the EDGG Field Workshop coordinators, Denys Vynokurov and/or Jürgen Dengler – as this might reduce the overall costs.

Travel information

The starting point of the Field Workshop is Torino Railway Station, Italy (Stazione Porta Nuova), where we will meet participants at 15:00, on 1st of June. The ending point of the Field Workshop is Torino Railway Station, where we will arrive at 16:00 on 11th of June. The detailed meeting place will be sent to the registered participants closer to the beginning of the Field Workshop. We expect up to 15 participants.

Fees

The fees comprise all costs of meals, travel and accommodation starting at 15:00 on 1st of June and ending at 16:00 on 11th of June.

The fees for full participation are:

- € 700 for students (including PhD students) who are IAVS members;

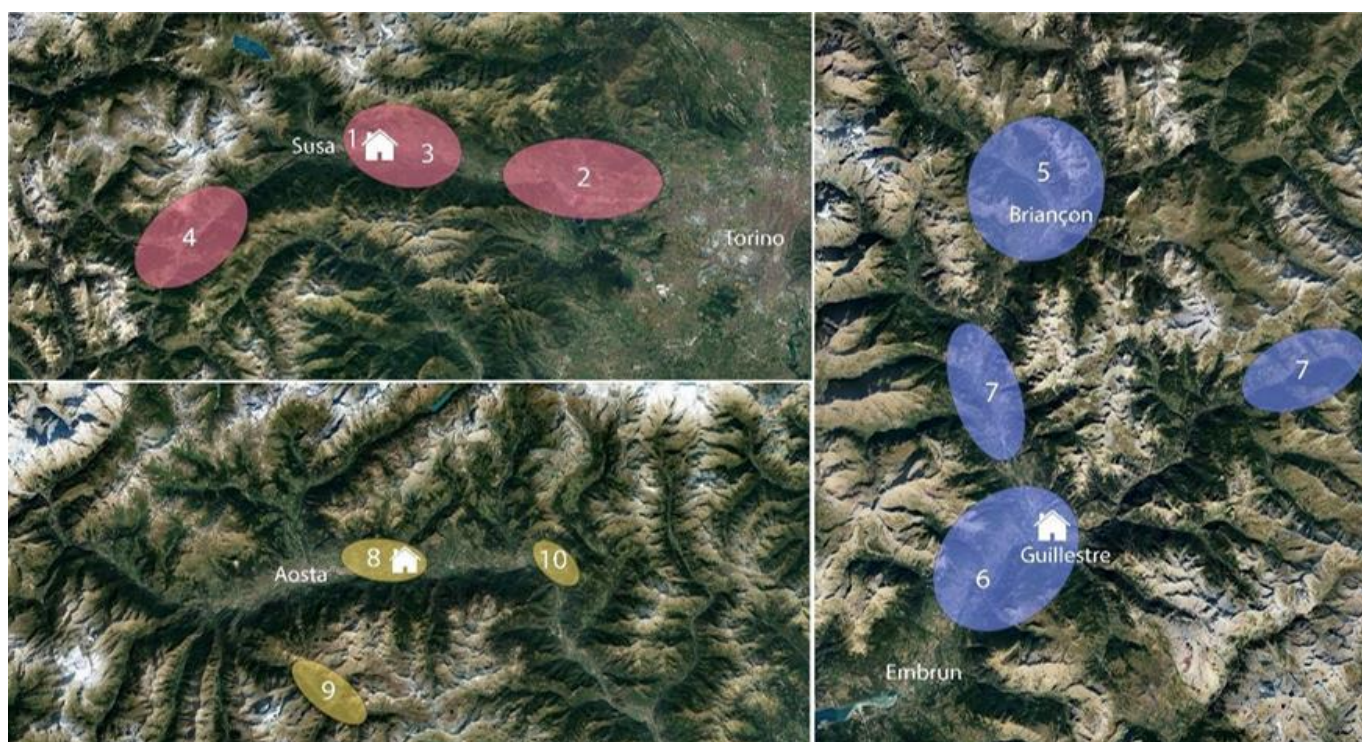


Fig. 9. Preliminary localities of the 18th EDGG Field Workshop in three valleys with indication of the sampling days (1-4 – Susa Valley, 5-7 – Durance Valley, 8-10 – Aosta Valley).

- € 800 for postdocs, senior scientists or other regularly employed persons who are IAVS members;
- € 800 for students (including PhD students) who are not IAVS members;
- € 900 for postdocs, senior scientists or other regularly employed persons who are not IAVS members;
- € 0 (i.e. no participation fee) for any Ukrainian participant (whether living in Ukraine or a refugee abroad) who is IAVS member at the time of application (it is possible also to apply additionally for travel expenses to/from Torino).

Payment has to be made in cash on the first day of participation or directly into the bank account. Bank account details will be provided to the registered participants after the confirmation of participation.

The fees are calculated with some small buffer. Therefore, if everything goes well and/or we can reduce the costs by using more private cars than currently planned, some refund at the end is possible. In case of cancellation, we will refund money – but only to the extent that the cancellation led to a cost reduction.

How to apply

In general, only EDGG members can participate in EDGG Field Workshops, but if non-members apply this will be considered as an application for free membership of the EDGG.

To apply for participation, please submit a motivation letter (about 200 words) to the Field Workshop coordinators, Denys Vynokurov (denys.vynokurov@gmail.com) and Jürgen Dengler (dr.juergen.dengler@gmail.com) in an email entitled "EDGG Field Workshop", explaining why you are interested in participation and what would you contribute to its success, both during and after the Field Workshop. Deadline for applications is **15th April 2024**. Confirmation of participation and feedback on travel grant applications will be given not later than 5 May 2024.

If there are more applications than places, we will select participants on the basis of the motivation letters and competences contributed. We will give preference to those who are willing and able to determine bryophytes and lichens from the Field Workshop or analyse the collected soils. For those who already participated in at least three EDGG Field Workshops, the motivation letter is not required. When applying for participation, in addition to your motivation letter please include in your e-mail the following information:

- Name
- Age
- Professional status (e.g., PhD student, postdoc, professor, unemployed)
- Affiliation
- Address

- Mobile phone number (we need to be able to contact you, e.g., when you get lost in the field)
- Dietary requirements (no/vegetarian/other: please specify)
- If you are not an EDGG member yet, you need to agree explicitly to join EDGG (for free)
- Travel grant application (Yes/No)

Experts on other taxonomic groups, like grasshoppers, leafhoppers, spiders, butterflies, fungi or soil metagenomics are also welcome to join if they are able and willing to carry out their sampling in a way that allows joint analyses with the vegetation diversity data. Such applicants are requested to discuss a potential sampling design prior to application with EDGG Field Workshop coordinators, Denys Vynokurov and Jürgen Dengler.

Partial participation is possible (e.g., only one or two valleys). However, the priority will go to full-time participants. If you wish to apply for partial participation, please contact the Field Workshop coordinators.

Travel grants

Travel grants are provided by our maternal organization IAVS, and they are only available to members of IAVS in 2024. Priority for travel grants will be given to the following groups of persons: a) students and other applicants from low-income countries; b) active participants of previous Field Workshops; c) persons that have already agreed to organize a Field Workshop in the coming years or provide any additional input such as soil analyses or sampling and identification of taxonomic groups other than vascular plants. The final decision will depend on the combination of these three variables. The amount of money provided to a particular grantee is not a fixed sum, but depends on the available money, the demonstrated need of the respective person and his/her relevance to the success of the Field Workshop. Accordingly travel grants can cover parts of the registration fee, the full registration fee or possibly even the travel costs to get to the event.

IAVS and EDGG requires their grantees to be actively involved in the EDGG event and contribute to its success. In the case of Field Workshops, it is necessary that all participants work intensively during and after the Field Workshop to obtain high-quality scientific results. Some of the tasks shared by participants are data entry and digitizing data, sorting and analysing soil samples, preparing and identification of plant specimens. Post-Field Workshop tasks usually require a few days of work for each participant. Participants will be invited as a co-author to one or more publications using these data. It is required that IAVS grantees accept to fulfil tasks relevant to their expertise and capabilities during and after the Field Workshop. If a grantee does not fulfil the post-Field Workshop task, he or she may be exempted from next year's grants for EDGG events.

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Call for participation and presentations: 19th Eurasian Grassland Conference Bolzano (EGC2024) Italy, 26 August – 1 September 2024

As was announced in PG 58-59, the 19th Eurasian Grassland Conference will be held in Bolzano (Bozen) in South Tyrol (Trentino-Alto Adige region) from 26th August until the 1st September 2024. The theme of the event will be **‘Grasslands as biodiversity hotspots’**. The venue for the conference sessions will be the Eurac Research headquarters. Destinations of the excursions will be the nearby inner-alpine dry grasslands (Mid-Conference Excursion) and the Alpine meadows and pastures of the Dolomites (Post-Conference-Excursion).

Registration

Further information about the registration for the event will be available soon on the **conference website** www.egc2024.it.

Venue

The conference venue will be in the city of Bolzano/Bozen in the research center Eurac Research headquarters building (Viale Druso/Drususallee 1). It can be reached from the old town or the train station in approximately 15 minutes by foot. Alternatively, there are bus-stops directly in front of the entrance (bus stop ‘Eurac Research’) and it is possible to

arrive by public transport. The first day’s keynote talk and the icebreaker will be held in the Museum of Nature South Tyrol. It is situated within a 10-minute walk from the train station in the old town of Bolzano/Bozen (Bindergasse 1).

Oral and poster presentations

We invite all participants to present their research outcomes in a short oral presentation (15 min incl. discussion) or with a poster (incl. a three-slide short presentation). As already practised in previous EGCs, oral presentations of scientific results and on non-scientific activities (such as conservation management) on the topic of grasslands will be given in several thematic sessions. The large-format posters will be exhibited in the foyer of the Eurac main building. In addition to the printed poster, a short presentation should be prepared. The poster should be presented briefly with a total of three slides and a maximum of 3 minutes. The slides should NOT be identical to the poster but represent a kind of graphic abstract: Slide 1 briefly presents the topic and the background of the research. Slide 2 presents the methods and the study site. Slide 3 presents the results of the research work. There will then be an opportunity to ask questions. The maximum time for the presentation including discussion is 5 minutes.



Sub-alpine grassland in the southwestern Dolomites. Photo: Eurac Research/Ma. Jaider.

Preliminary Program

- **Monday, 26 August**

Workshop on insects in grasslands, with lecture in the morning and excursion in the afternoon, main focus on wild bees, butterflies and grasshoppers

Opening Talk, Andreas Hilpold & Thomas Wilhalm: Grasslands in South Tyrol. Naturmuseum Südtirol

Icebreaker, Naturmuseum Südtirol.

- **Tuesday, 27 August**

1st Conference day, Eurac Research headquarter.

- **Wednesday, 28 August**

Mid-Conference Excursion - Vinschgau valley.

- **Thursday 29 August**

2nd Conference day, Eurac Research headquarter.

General assembly.

Grassland Party, Eurac Research courtyard.

- **Friday 30 August – Sunday 1 September**

Post-Conference Excursion - Dolomites and Eisacktal.

Workshop and workshop excursion

The workshop will be led by three insect experts. Elia Guariento works mainly with butterflies and ants, Lisa Obwegs with wild bees and Andreas Hilpold with grasshoppers. In the morning session they will present an introduction to the biology, the methodology and the ecology of the four taxonomic groups with a special focus on grasslands. In the afternoon we will take the cable car to Ritten/Renon where we will search for insects using a set of different methods.

Excursions

Mid-conference Excursion:

Vinschgau: It will combine a short walk in the dry continental steppelike grasslands of the Vinschgau valley with a trip to the alpine grasslands in Schnalstal/Val Senales.

Post-conference Excursion:

The post-conference excursion will lead us to the subalpine and alpine areas of the Isarco/Eisack valley and the Western Dolomites. We will see various types of grasslands, such as extensive subalpine pastures (*Nardetea*) and alpine grasslands on acidic and carbonate bedrock. In addition to the botanical aspects, we will discuss conservation issues. The main question will be, if man-made grasslands of the montane and subalpine zone will survive for the future, against the strong tendencies of both abandonment and management intensification.

Maximum number of participants: 35 persons.



Andrena sp., *Leptophyes albobittata*, *Lysandra bellargus*. All three occur frequently in landscapes with grasslands and are to be expected for the surroundings of Bolzano. Photos: Eurac Research.

Conference fees

Registration fees (including conference, workshop, mid-term excursion and grassland party):

Regular registration fee, non-IAVS members: € 210

Regular registration fee, IAVS members: € 200

Student registration fee: non-IAVS members: € 190

Student registration fee, IAVS members: € 180

Optional programme and fees:

Ice Breaker Event: € 25

Post-conference excursion: € 110

Financial support

Thanks to the IAVS, we can support a number of participants with travel grants. Travel grants will be awarded according to the IAVS criteria, based on income level and country of origin. They will preferentially be given to early-career and other financially constrained scientists. The support usually covers only part of the participant's costs, according to the number of successful applications.

Eligibility and requirements: The applicants for travel grants should be IAVS members. To qualify for a travel

grant, active participation at the conference (oral presentation or poster) is required. Only the presenter of the contribution will be supported, so each applicant should apply with a separate talk or poster, and she/he will be the presenter. After the conference, grantees must provide a short report of the event, and some photos that can be used in *Palaeartic Grasslands*. Travel grants can be applied for during online registration, including a short motivation letter. Information about the results of the **travel grant applications will be given at the latest by 30th July**.

IAVS support for Ukrainian scientists: In addition to the travel grants, **participation by Ukrainian IAVS members is completely free** (no conference fee). The respective fees are directly paid by IAVS to the local organising committee. Additionally, Ukrainian participants can apply for travel grants to cover the costs of their journey.

Young investigator prize: As in previous years, **prizes will be awarded to young scientists** for excellent presentation of their research (orally or in poster form). For these purposes, early career scientists (less than 35-year-old) will be asked during registration if they wish to participate in the contest. During her/his presentation, the applicant needs to explain clearly her/his contribution to the work.



Steppe-like grasslands with *Stipa capillata* next to Juval Castle in the Vinschgau valley, from the EDGG Field Workshop 2023. Photo: N. Skobel.

Green event

We plan to organize a green event:

- Most of the offered food will be vegetarian. Only in a few occasions, meat products will be served – in that case the meat is from local small-farm production.
- We will serve milk products from local production, preferably from small farms with high ecological standards
- Please bring your own bottles! The tap water quality in Bolzano is high, no need to buy water. We will not serve drinking water from plastic bottles.
- Please come by train! Bolzano is well connected to most of Italy, Austria, Germany, Switzerland etc. Also, a train ride from Paris or Budapest can be done in less than 12 hours, usually quite comfortably! Please find more information on how to reach Bolzano/Bozen on the conference-website: www.egc2024.it.

Contact

Do you have any questions? Please don't hesitate to contact the conference organizers about any details, we are happy to help! Our email address is: infoegc@eurac.edu

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Extensive meadows with *Nardus stricta* on the Seiser Alm/Alpe di Siusi. Photo: A. Hilpold.



Subalpine grasslands in the Villnöss/Funes valley, in the background the Geisler/Odle mountain peaks. Photo: A. Hilpold.

EDGG Publication

Call to contribute to the EDGG Special Feature in *Tuexenia* 44 (2024)

The Special Features of EDGG and its predecessor “Arbeitsgruppe Trockenrasen” in *Tuexenia* have a long tradition since 2005. *Tuexenia* is a diamond open access journal, i.e. free to publish for authors and free to read for readers. Currently, *Tuexenia* is indexed both by the Web of Science Core Edition and by the Scopus database. It has a Journal Impact Factor of 1.2 and a CiteScore of 2.4.

For many years, EDGG managed to publish a Special Feature every year in *Tuexenia* with the EDGG-edited articles often among the top-cited articles of *Tuexenia*. Among the six top-cited *Tuexenia* articles in Scopus of all time, five are from the EDGG Special Features despite they account for only about ¼ of all content: Among these, Dengler et al. (2012) on the extraordinarily species-rich dry grasslands of Transylvania has 81 citations to date (11 February 2024) and a Field Weighted Citation Impact (FWCI) of 3.35 (i.e. this article is cited 3.35 times more than average articles from the subject field published in the same year). On the next ranks are Gil-

haus et al. (2017) on management effects on grasslands in Germany (38 citations, FWCI = 1.43), Valkó et al. (2016) on high-diversity sowing for grassland conservation (37 citations; FWCI = 2.16), Willner (2011) on an innovative classification method exemplified with dry grasslands (33 citations; FWCI = 1.56) and Deák et al. (2014) on the grassland alliance *Beckmannion eruciformis* (32 citations; FWCI = 2.90). It has been shown that the articles in the EDGG Special Feature have on average significantly higher citation rates than ordinary articles in *Tuexenia* (Boch & Dengler 2021).

Despite the long history and the obvious advantages for authors, during the years 2022 and 2023, we had a lack of article submissions and were not able to produce a Special Feature in *Tuexenia*. In each of the years only one paper was submitted and accepted (Shyriaieva 2022; Vynokurov et al. 2023), both on grassland vegetation in Ukraine. In 2024, we plan to have a comprehensive Special Feature again.



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The guest editors are Thomas Becker (DE), Balász Deák (HU), Jürgen Dengler (CH), Kristin Ludewig (DE) and Sonja Skornik (SI), chaired by Steffen Boch (CH). Luckily, this year the publication of an EDGG-edited Special Feature is already confirmed as by end of January 2024 already three papers (and thus the required minimum number) were accepted: Schindler et al. (2024) on irrigation of dry grasslands in Valais (Switzerland), Borovyk et al. (2024) on richness maxima in Ukrainian steppes and Riedel et al. (2024) on the transformation of cover values in biomass fractions.

We would like to encourage you to submit your **manuscripts on grassland-related topics with a focus on ecology, biodiversity, syntaxonomy, management and conservation of any type of grassland vegetation** in the nemoral biome of Europe with its transitions to the boreal, steppic and Mediterranean biomes. Papers will undergo regular peer review led by one of the EDGG guest editors. After acceptance, papers will be published online first (then they are citable via DOI) and go to the next print issue of *Tuexenia*. **You can thus submit anytime.** To have a good chance of inclusion into the Special Feature of 2024, we recommend that you submit your manuscript adhering to the *Tuexenia* [author guidelines](#) **not later than June 2024** via email to Steffen Boch. Papers that are not accepted in time for the publication in the Special Feature of one year, will automatically be published in the subsequent Special Feature.

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Announcement

News from *Vegetation Classification and Survey* from the perspective of EDGG

IAVS' gold open access journal *Vegetation Classification and Survey* (VCS) has just completed its fourth volume in 2024. Nearly 100 papers have now been published. The fourth volume was the largest to date with 25 papers and a total of 360 pages. The journal's development is also reflected in its bibliometric data. In 2022 it was included in the Scopus database, and in the summer of 2023 it received its first CiteScore of 2.0. The Cite ScoreTracker has since risen to 2.5. The application for inclusion in the Web of Science Core Edition is currently under review, and we hope for a positive

decision during 2024. While both CiteScores and Journal Impact Factors are mainly based on the citation performance of papers published in the three years prior to the release of the respective metric (and to some extent in the two years prior), in this year's editorial (Dengler et al. 2024) the Chief Editors tried to get a more up-to-date picture by using normalized citation rates for the publication output of VCS in single years (Fig. 1). Among a selection of 30 ecological journals at all levels from *Tuexenia* to *Global Change Biology*, VCS improved its average normalized citation rate

VEGETATION CLASSIFICATION AND SURVEY

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Vegetation Classification and Survey (VCS) is an international, peer-reviewed, online journal on plant community ecology published on behalf of the **International Association for Vegetation Science (IAVS)** together with its sister journals, **Journal of Vegetation Science (JVS)** and **Applied Vegetation Science (AVS)**. It is devoted to vegetation survey and classification at any organizational and spatial scale and without restriction to certain methodological approaches.

IAVS

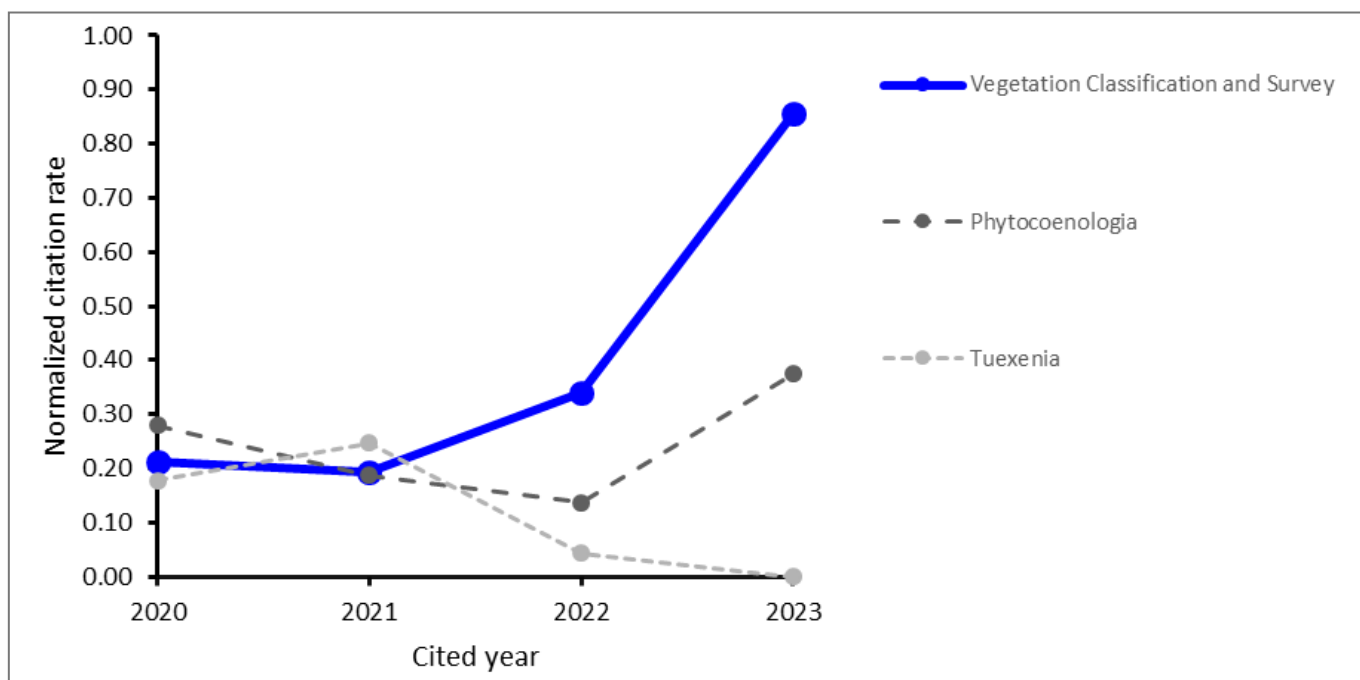
The attractive website of [Vegetation Classification and Survey](#)).

from 0.21 for articles published in 2020 to 0.86 for articles published last year. This was in the range of journals such as *Biodiversity and Conservation* or *Basic and Applied Ecology*, which both reached 0.75. Accordingly, the ranking of VCS improved from 28th to 14th among these 30 journals (for details see Dengler et al. 2024).

VCS is dedicated to serving the regional sections and working groups of IAVS. To this end, we have a standing section on Phytosociological Nomenclature (published in collaboration with the GPN Working Group) and one on Ecoinformatics (topically matching the Ecoinformatics Working Group). There are currently four ongoing Special Collections in collaboration with five Regional Sections and Working Groups (<https://vcs.pensoft.net/collections>), and two have already been completed. The cooperation with EDGG is quite prominent as VCS's first Special Collection was produced together with EDGG on "Classification of grasslands and other open vegetation types in the Palaeoctic" (see Nowak et al. 2022). Currently, there is an ongoing Special Collection "Grasslands of Asia" jointly initiated by EDGG and the IAVS Regional Section for Asia and led by Jürgen Dengler, Idoia Biurrun, Victor Chepinoga, Alireza

Naqinezhad and Arkadiusz Nowak. So far, two papers have been published (Świerszcz et al. 2022, 2023), and four more are under peer review. Submission to this Special Collection is open until end of March 2024, but please contact the chair of the Special Collection Editors (J. Dengler) prior to ant potential submission.

Based on the Field Weighted Citation Impact (FWCI) from Scopus that provides a transparent article-based citation metric by normalizing the citations with the average number of citations of articles of that year in the specific research area, the publication of the Ecological Indicator Values for Europe (Dengler et al. 2023) is the most impact-full paper of VCS so far (FWCI = 12.46; 11 February 2024). Among the other 18 papers with FWCI values above 1 (i.e. as more impactful than average articles from the research field), six were on EDGG topics by prominent EDGG member: Nowak et al. (2020; FWCI = 2.14) on the syntaxonomy of Middle Asian tall-forb communities, Janišová et al. (2021; FWCI = 1.62) on a new sampling methodology for grasslands, Liu et al. (2022; FWCI = 1.44) on the classification of Chinse steppes, Fernández-González et al. (2023; FWCI = 1.38), Terzi et al. (2023; FWCI = 1.38) on the nomenclature



Development of the normalised citation rate (based on the Scopus database, December 2023) for articles published in *Vegetation Classification and Survey* in the first four years compared to two other vegetation ecology journals that were at a similar level in 2020. The citation rates are normalized by the average citation rates of all articles published in the respective year in 30 ecological journals. This means that a journal whose articles were cited on average as the mean of all ecological articles in the sample would have a mean normalized citation rate of 1. For example, the 8,313 articles published by these journals in 2023 had received an average of 0.89 citations by the end of last year. Thus, the average citation rate of VCS articles last year of 0.76 translates into an average normalized citation rate of $0.76 / 0.89 = 0.86$. Note that the normalization is per article, not per journal. The average of the average normalized citation rates of the 30 journals was only 0.88 – because the better journals tend to publish more articles.

of grassland syntaxa and Magnes et al. (2021; FWCI = 1.08) on the classification and biodiversity of dry grasslands in Austria.

VCS is a gold open access journal, which means that production costs must be covered either by the authors through article processing charges (APCs) or by the owner (IAVS) through subsidies. Charging APCs in the early years of a new journal, while it is still awaiting inclusion in the Scopus and Web of Science databases, is very challenging. Moreover, APCs could prevent good articles from being submitted simply because their authors do not have access to APC funding sources, which is often the case in the field of vegetation classification, where many authors come from low-income countries or from outside the large research institutions in wealthier countries. We are therefore very grateful to the IAVS Council for fully covering the APCs for articles submitted by IAVS members during the first years.

However, these subsidies were always intended for the initial phase only, while later VCS is expected to cover its costs through APCs and even to generate some profit for IAVS, as the other two journals of IAVS (Journal of Vegetation Science, Applied Vegetation Science) do. As a first step in this direction, since 2022 IAVS members who have access to their own APC funding have been encouraged to use that money rather than rely on IAVS grants. This approach has worked increasingly well, so much so that the IAVS subsidy per year has stagnated or fallen, despite the increasing number of pages. To this end, we have increased the basic APCs to 2000 EUR in autumn 2023. Any author who chooses to pay this from their institutional or project funds is doing a real service to the community, as this will essentially enable about two articles by authors without such funding to be published. Thus, a big thank you to all authors who have paid their APCs instead of having them paid by IAVS! Now that VCS is included in the Scopus database and has a CiteScore, IAVS members will have to pay partial APCs from 2024 onwards. Specifically, articles submitted in 2024 by authors from wealthy countries (see the journal website) are subject to an 85% price reduction, i.e. the APCs for a standard article of 8–20 pages is 300 EUR, while authors from middle and low income countries still are completely exempt from APCs.

We, the Chief Editors, believe that the scope of the journal, the performance of the journal, and the close cooperation with the IAVS Working Groups and Regional Sections, combined with the low APCs, make VCS an attractive publication venue for vegetation ecologists. We therefore look forward to receiving many exciting manuscripts from EDGG members in 2024!

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On behalf of all VCS Chief Editors:

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Photo Competition

Best Shots on “Threatened grasslands”

Here are the three winners of the EDGG Photo Competition dedicated to “Threatened grasslands”.

The Jury for the Photo Competition was composed of Edy Fantinato (Chair), Anna Kuzemko, Rocco Labadessa, Maria Long and Jim Martin.

1st place:



Monica Angela Neblea, Pitesti, Romania, monica_neb@yahoo.com

Reviews from the Jury:

“This image encapsulates the issue of overgrazing by sheep, a threat to many grassland habitats particularly in upland areas.”

“Clouds and backlight give a more threatening appearance to a large flock of sheep.”

2nd place:

The image depicts a threatened grassland-dwelling mammal species, which is exclusively linked to dry grassland habitats, and the existence of which has only been confirmed as an independent species only very recently. This is the Vojvodina blind mole rat (*Nannospalax montanosyrmensis*), a strictly subterranean mammal that spends its entire life underground, in the soil. The species is one of the most endangered mammals of the grasslands of the Pannonian Biogeographical Region. Only 4 populations exist and the total number of adult individuals does not reach 1000 specimens. The habitats of the species are found in Hungary (in the Danube-Tisza Interfluve area) and in Serbia (in the province of Vojvodina). Its survival is threatened by many factors, habitat loss being the most serious, but less than half of its known habitats are protected by law.

Attila Németh, Debrecen, Hungary, dr.attila.nemeth@gmail.com

Reviews from the Jury:

"A fabulous photo of the blind mole rat, a reminder that our remaining areas of species-rich grassland can often provide a home for threatened wildlife."

"Fabulous shot of a species I had never heard of before. I love this photo also because the grassland habitat is visible in the background giving great context."

3rd place:



Anacamptis morio in Sieniawa vicinity, SE Poland.

Piotr Chmielewski, Zamość, Poland, pchmielewski4@wp.pl

Reviews from the Jury:

"A wonderful close-up of Anacamptis morio, an ephemeral species that is disappearing from many calcareous grasslands due to inappropriate management."

Photo Story

DOI: 10.21570/EDGG.PG.60.28-59

17th EDGG Field Workshop photo diary Inner Alpine dry valleys of the south-eastern Alps (Italy, Switzerland, 1-11 June 2023)

Photos and text by Lisa Angelini^{1,2}, Oksana Tyshchenko³, Andreas Hilpold¹, Olha Chusova⁴,
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Over the last two decades, a standardized EDGG sampling methodology (Dengler et al. 2016) has been refined and applied to collect a large amount of data across the entire Palaearctic realm. A series of field workshops have been conducted by the Eurasian Dry Grassland Group to gather biodiversity data using this standardized methodology. These workshops have played a crucial role in aggregating, exchanging, and standardizing collected data among specialists working in various countries and fields.

The data gathered through this methodology are stored in the GrassPlot database (Dengler et al. 2018). This extensive database contains standardized, high-quality multi-taxa biodiversity data, along with certain environmental and structural data. It has been utilized for numerous publications, some of which are still in progress. These publications aim to analyse various aspects of biodiversity at regional and continental scales, ranging from floristic and phytosociological to ecological aspects such as biodiversity patterns and drivers.

The 17th EDGG Field Workshop involved 12 participants from seven different countries (Italy, San Marino, Switzerland, Germany, Austria, Ukraine and Turkey) with varying levels of experience and expertise in different fields, from vascular plants to cryptogams. Seven local botanists from

the organizing institutions accompanied the group, providing technical and logistical support.

Following the successful Field Workshops conducted in the Inneralpine dry valleys of Austria (2018; Magnes et al. 2021) and Switzerland (2019; Bergauer et al. 2022), the aim of the 17th Field Workshop was to fill the data gaps in the dry valleys of the Eastern Alps. The 11th EDGG Field Workshop has already investigated the three most significant areas of Austria, including small areas of Carinthia and Styria, Puster and upper Drau valley, and the Inn valley in Tyrol. Similarly, Switzerland, comprising the Engadine, the valleys of Central Grisons (Rhine and tributaries), and the Valais (Rhône valley), was the focus of the 12th EDGG Field Workshop.

For this reason, it was decided to conduct the Field Workshop in the south-eastern Alps, spanning across the Italian regions of Trentino-Alto Adige and Lombardy, as well as Switzerland. With the support of three local institutions, the Institute for Alpine Environment – Eurac Research, the Free University of Bolzano, and the Museum of Nature South Tyrol, it was possible to study the whole complex of target valleys: Eisack/Isarco, Adige/Etsch, Val Venosta/Vinschgau and Val di Sole (Autonomous Province of Bolzano and Trentino, Trentino-Alto Adige region), Valtellina (Lombardy region) and Val Müstair/Münstertal (Switzerland).

In terms of vegetation types, our focus was on extensively grazed dry grasslands, along with visits to some semi-dry hay meadows, between 382 and 1763 meters in altitude. Specifically, data collection took place in the moderately dry valleys of Eisack/Isarco, Adige/Etsch, Valtellina, Valcamonica and Val di Sole, and the most extreme dry valley system in the Eastern Alps: Val Venosta/Vinschgau and Val Müstair/Münstertal. The average annual precipitation in these climatically extreme valleys typically ranges between 450 and 700 mm, in combination with high solar radiation. The east-west orientation of the Val Venosta/Vinschgau valley and its geographical position result in an annual precipitation of below 500 mm in some localities. Since the end of the last ice age, this exceptional environment has fostered the development of a highly diverse thermophilic flora, adapted to conditions that are otherwise absent or rarely found in the Alps.

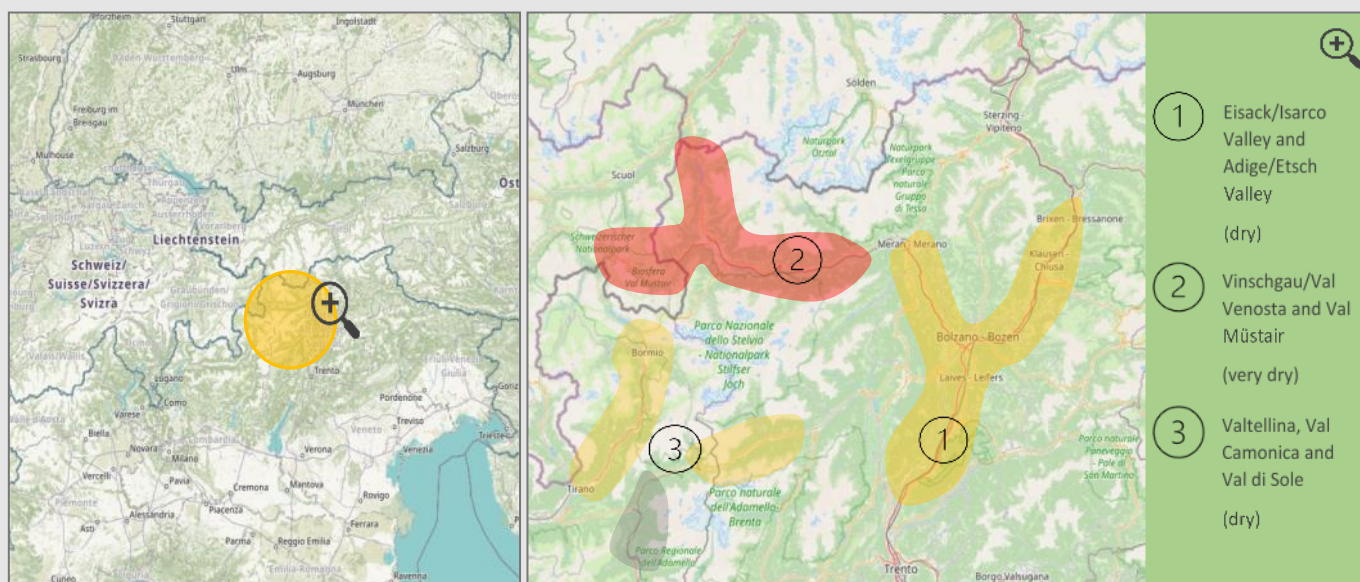
Among these species, many belong to taxa typical of the steppe-like grasslands of Central and Eastern Europe, which are isolated from their main distribution range, and thus found at the westernmost limit of their range. Some taxa have even formed endemic genetic lineages or subspecies (Kirschner et al. 2020). This diverse steppe-like element is enriched by widespread Central European dry grassland species and some (sub-) Mediterranean species adapted to summer drought.

The three main valley systems described above were explored in three consecutive stages, with two to three days spent in each, staying in country hotels in strategically chosen locations. Transfers required the use of two 9-seater minibuses and some additional cars provided by the organizing team.

This enabled access to smaller valleys and allowed the group to split into two sub-groups. This asset yielded significant results in terms of quantity: a total of 26 biodiversity plots (23 plots of 100 m², plus 3 plots of 1000 m²) and 108 normal plots (10 m²) were successfully sampled.

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Field Workshop area: overview map (left); detailed trip map (right).

Day 1 – 1st June 2023

On June 1st, the participants travelled to Bozen/Bolzano, a centrally located city in the Autonomous Province of Bolzano, South Tyrol. An icebreaker event was organized at the Museum of Natural Sciences, where after an introductory meeting by the organizers and a brief refreshment break, participants had the opportunity to visit the museum's exhibition rooms with the curator of botany, Thomas Wilhalm.



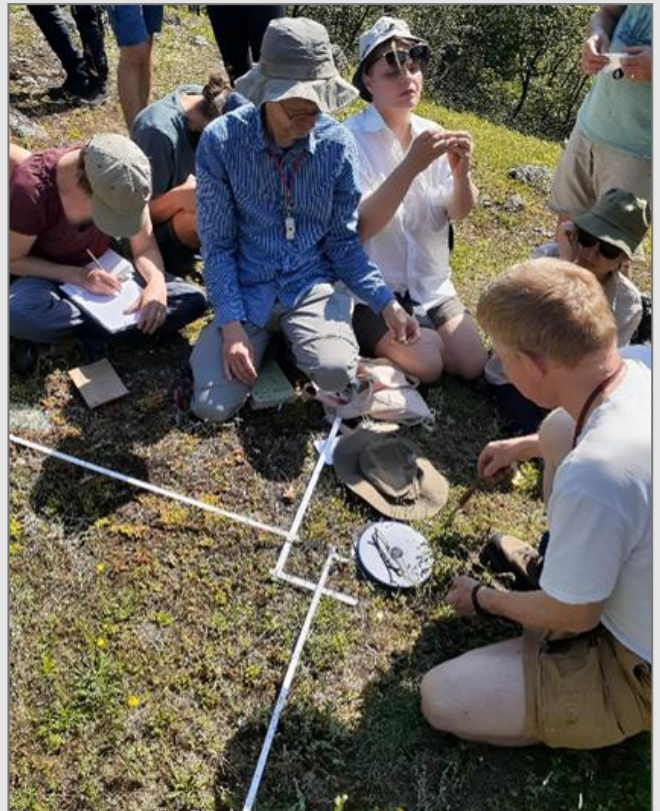
Arrival in the city of Bozen/Bolzano, South Tyrol.



Welcome to the Natural Science Museum and icebreaker event with the local organizing team (Jürgen Dengler, Andreas Hilpold, Camilla Wellstein and Thomas Wilhalm).

Day 2 – 2nd June 2023

The first field day took place in Castelfeder, a hillside complex located south of Bolzano in the Adige Valley. What makes this place unique is its status as a natural hotspot within a heavily man-transformed landscape. The valley floor, fertile and wide like most glacially carved valleys, serves as valuable space for vineyards and apple orchards in a totally mountainous region. It is also traversed by an important transit route, the Brenner motorway connecting Austria and Italy. Castelfeder is designated as a protected area, and its most valuable environments include extensively grazed dry meadows, chestnut groves, and small wetlands.



Introduction to the special dry flora of the area and first surveys in Castelfeder.



Magnificent view of the Adige Valley from Castelfeder. In the background the Etsch/Adige river, apple orchards under canvas, vineyards and villages in the foothills.



Working moments (and deserved lunch break) of the two groups.



Final checks and a glance from above before going.

Day 3 – 3rd June 2023

The fine weather continued to accompany the group on the third day. In the morning, the group was split into two, and thanks to the 9-seater minibus, sampling could be conducted simultaneously. One group drove eastwards along a section of the Eisack/Isarco river (to localities Trumbichl and Teis), while the others remained around Bolzano (Moritzing, Gries). Here, on the south-facing slopes directly above the city, there are sunny and very hot stations that facilitate the naturalization of several *Opuntia* species, which were introduced at the end of the 1800s.



Sampling sessions on the steep slopes in dry grasslands.



Views of the sampled slopes next to Terlan/Terlano.



A rich world of cryptogams.



Communities with different *Opuntia* species and *Orlaya grandiflora*.



Exploring dry grasslands in Trumbichl.



Fieldwork in Eisak/Isarco Valley.



Identification and arrangement of samples in the evening at the hotel hall.

Day 4 – 4th June 2023

On this day, the journey westwards began: the groups mixed and split up to explore the dry south-facing slopes with plant communities dominated by *Stipa capillata* and *S. pennata*. After passing Merano, we reached the slopes at the beginning of Juval where we spent the morning (and temporarily lost the penetrometer... two hours of fear!). In the afternoon, despite the arrival of rain, we decided to climb to higher altitudes and split into two groups again. A warm and delicious meal in a traditional restaurant brought smiles back to our faces after this sudden change in temperature.



Contrast between vegetation rich slopes and intensive apple orchards in the valley floor.



Moments of concentration during the fieldwork.



The rainy afternoon ends with a very appreciated hot meal.

Day 5 – 5th June 2023

The previous evening we relocated to the Iris Hotel in Mals/Malles, as the upcoming day and the next two were scheduled to take place in the upper Vinschgau. Despite being the driest of the Alpine valleys involved in the workshop, the rain persisted. In the morning, it accompanied us during surveys on the meadows of Tartscher Bichl, while in the afternoon, both groups moved to Tartscher Leiten.



View from different perspectives of the arid common pastures on Tartscher Bichl.



Wet sampling...



A wide variety of bryophytes and vascular plants (*Thymus* species to be checked on the right).

Day 6 – 6th June 2023

On day six, the two groups split between Val Monastero/Müstair and Silandro/Schlanders - Allitz. Müstair is situated just outside the Italian border, in the Swiss canton of Grisoni/Graubünden. Here, we found time to visit the remarkably interesting monastery of St. John the Baptist/San Giovanni Battista, a UNESCO World Heritage Site renowned for its extraordinary cycle of frescoes from the Carolingian era (9th century) and the Romanesque sculptures.



Views of the Val Monastero/Müstair and visit at the monastery.



Sampling moments (and some rest).



On rocky dry slopes.



Sharing knowledge.

Day 7 – 7th June 2023

In the morning, we sampled meso-xeric grasslands in Matsch/Val Mazia, enjoying a breathtaking view of the entire Vinschgau/Val Venosta valley, which is also adorned with castles and ruins. Afternoon sampling once again took place in Val Monastero/Müstair, particularly in the Italian part of the valley around Taufers/Tubre and Laatsch/Laudes. Here, large portions of dry meadowland alternate with woodland, where, in the regeneration of the portions further down the valley, we also encountered *Quercus pubescens*, demonstrating the thermophilic character of these slopes.



Working together is always an enrichment.



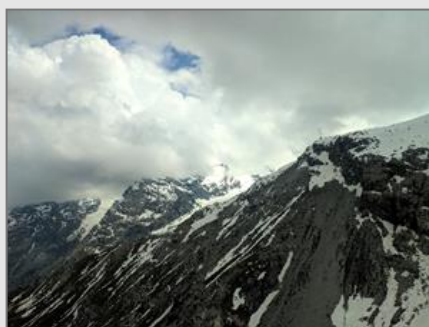
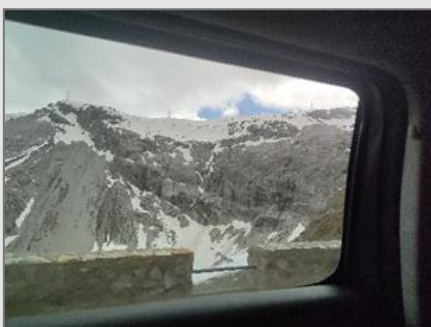
Views of the Matsch/Val Mazia valley and our group photo.



Some field equipment: sample bags, GPS, flora of the area.

Day 8 – 8th June 2023

Starting from day eight, the journey continued southwest into the Lombardy region. Here, we stayed in the charming Hotel Garni Le Corti in Grosotto, Valtellina. While most of the valley's well-exposed slopes have been extensively shaped by human activity since ancient times, thanks to a less intensive tourist economy, the valley still retains some stretches of dry grasslands. We explored certain areas in the northern part, near Bormio (Uzza, Niblogo).



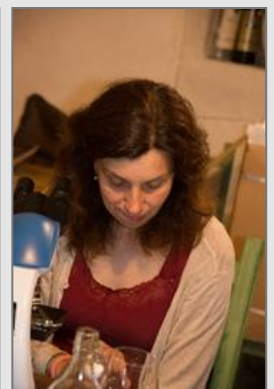
Stelvio Pass: from South Tyrol to Lombardy.



Last plots in South Tyrol near Tarces/Tartsch in the morning.



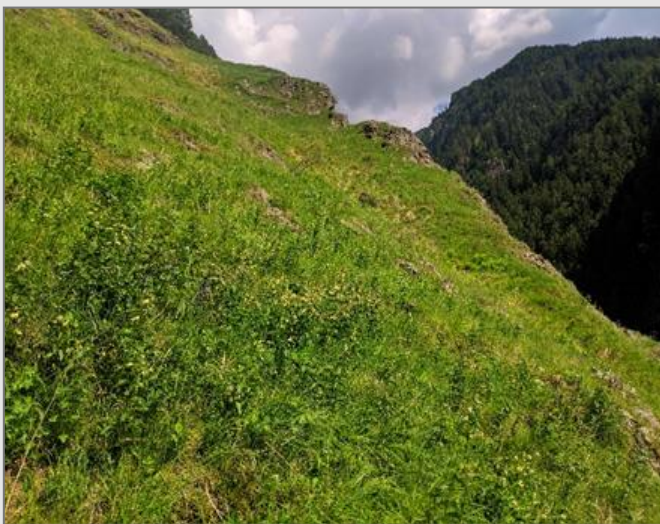
Mesoxeric grasslands in Lombardy, near Bormio.



Work also continues in the evening.

Day 9 – 9th June 2023

The exploration of Valtellina continues southwards. This day, we sampled Sondalo and Mondadizza in the morning, while in the afternoon, we moved on to Teglio and Tirano.



Valtellina valley and its grasslands.



Steepness is guaranteed!



There are also interesting places with historic villages and traditional cuisine (Pizzoccheri – a typical buckwheat pasta with potatoes, fontina cheese and Savoy cabbage).

Day 10 – 10th June 2023

On the last day of the Field Workshop, we were taking advantage of the return journey to visit some interesting places. We first continued along the Val Camonica, where we stopped in Edolo. In the afternoon, we head east and entered the province of Trento, making several stops in Val di Sole (specifically in Vermiglio, Castello and Terminago). Finally, we concluded our circular route by heading north to return to Bolzano/Bozen, where a welcome (and long-awaited) barbecue awaited us at the Eurac Research Institute with all our companions from this beautiful journey.



Last surveys in Val Camonica (near Edolo) and Val di Sole (Vermiglio, Castello and Terminago).



The final meeting and the barbecue at Eurac Research garden in Bolzano/Bozen.

Selected pictures of vascular plants



Allium sphaerocephalon, *Anthericum liliago*, *Linaria angustissima*.



Astragalus exscapus, *Neotinea ustulata*, *Onobrychis arenaria*.



Sempervivum tectorum and *S. arachnoideum*, *Globularia cordifolia*, *Orlaya grandiflora*.



Filago minima, *Melampyrum arvense*, *Heteropogon contortus*.



Opuntia phaeacantha, *Caulis platycarpus*.



Phelipanche arenaria (above) and *Veronica spicata* (below).



Aster alpinus (above) and *Pulsatilla montana* (below).



Filago lutescens, *Asplenium septentrionale*, *Erysimum rhaeticum* and *Orobanche caryophyllacea*.

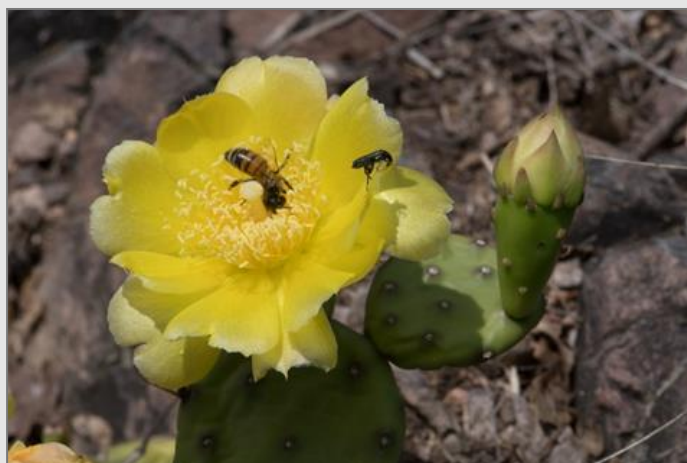
Selected pictures of animals



Stenopterus rufus and *Cerambyx cerdo*.



Podarcis muralis and *Parnassius apollo*.



Anacridium aegyptium and *Apis mellifera*.

Selected pictures of cryptogams



Bryophyte cushions and Xanthoparmelia stenophylla.



Mediterranean hepatic Oxymitra incrassata (left) and cf. Coprinopsis nivea (right).



Rocky outcrops dominated by bryophyte cushions and lichens (left) and wet Hedwigia ciliata on a rock.

Participants of the 17th EDGG Workshop**Jürgen Dengler****Philipp Kirschner****Robin Nikolei****Denys Vynokurov****Behlül Güler****Lisa Angelini****Wolfgang Willner****Thomas Wilhalm****Christian Dolnik****Andreas Hilpold****Francesco Santi****Simon Stifter**



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Photo Story

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Spring brings hope to the Ukrainian steppes

Photos and text by Dariia Borovyk^{1*}¹Department of Geobotany and Ecology, M.G.Kholodny Institute of Botany, National Academy of Sciences of Ukraine, Kyiv, Ukraine*Corresponding author: dariaborovyk@gmail.com

The steppe zone covers the southern-east part of Ukraine with about 40% of the total country area (Korotchenko & Peregrym 2012). If we count the forest-steppe as part of the steppe biome (Loidi et al. 2022), then the steppes occupy the vast majority of the territory of Ukraine. However, the steppes are also one of the most transformed ecosystems in Ukraine (Korotchenko & Peregrym 2012), so nowadays real steppe grasslands can be seen in very few places, while most steppe lands are turned into arable lands.

The steppe zone is characterized by a continental climate, which means cold winters and hot dry summers. In the short interval between these harsh periods, the magical steppe spring comes. It begins with the very first shy sprouts and buds of early spring geophytes, which appear at the end of February and March and, later in April, gain strength and turn into bright carpets. The earliest among them are bulb-forming geophytes, such as *Colchicum bulbocodium*, *Crocus reticulatus*, *Gagea bohemica*, *Tulipa schrenkii* and *T. sylvestris* subsp. *australis*. Almost all early spring steppe geophytes are protected by the Red Data Book of Ukraine

(Didukh 2009) or Regional Red Lists of Rare Plants (Andrienko & Peregrym 2012). Less visible but very numerous are the spring therophytes that occupy the spaces between the tussocks of grasses and the bunches of herbs. Steppe annuals bloom in March and April, and in May, after fruiting, they already dry up. At the end of April and in May, the steppe changes. It becomes covered with a fluffy sea of silver feathergrasses and colourful forbs. According to the Euro+Med PlantBase, there are 22 species and five subspecies of *Stipa* genus known in Ukraine. Among them, *Stipa capillata*, *S. lessingiana*, *S. pulcherrima* and *S. ucrainica* are the most common in the steppe zone.

Pronounced interannual fluctuations are among the characteristic features of steppe vegetation, which depends on the amount of precipitation. Even perennial species may not vegetate every year, waiting for more favourable conditions. Geophytes are specially adapted to such long waiting periods since they have nutrient reserves in bulbs, corms, rhizomes, or taproots. Grasses and forbs can significantly change the projective cover of green biomass in different

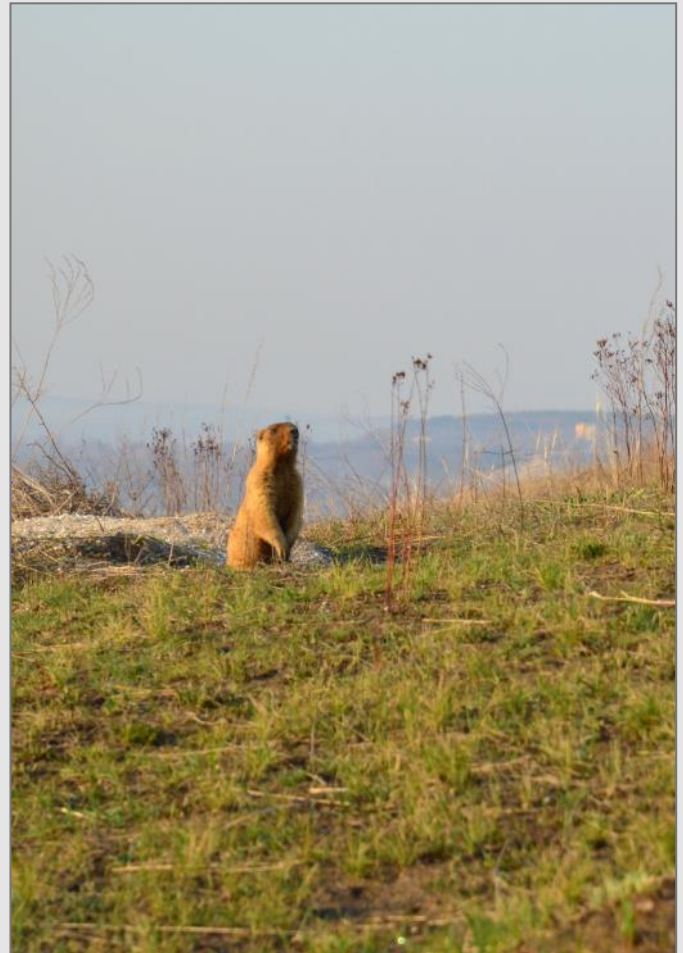


Tulipa sylvestris subsp. *australis* and *Muscari neglectum* in bunchgrass steppe, Mykolaiv Region.

years as a reaction to environmental conditions. Annuals wait for long periods in the form of seeds, which quickly develop when favourable times come. Therefore, every spring in the steppe is different. The flowering of plants begins at different times, and has different intensity, while some species can be seen not every year.

Today, I invite you to a bright journey through the steppe spring in Ukraine. These fascinating sights attract many naturalists and scientists. Be careful though! After one visit to the steppe in spring, it is difficult to stop and not come again and again.

My first visit to the steppes took place a long time ago, as I was born in the steppe zone. Therefore, many of my childhood memories are related to the steppes. My family had a summer house (so-called "dacha") in the floodplain of the Bila River near Luhansk City. Steep slopes covered by steppes and chalk outcrops rose above the summer cottages, and we traditionally visited them throughout the year. The spring started when we caught the first warm sunshine and admired the blooming flowers of *Adonis vernalis* (Ukrainian: 'горицвіт' – 'horytsvit') and *Paeonia tenuifolia* (Ukrainian: 'півонія' – 'pivoniia', or 'воронець' – 'voronets'). In May, we walked in the fluffy feathergrasses (*Stipa* spp.) and ran away frightened by the steppe vipers (*Vipera renardi*). In summer time, we came to watch late sunsets and breathed in the hot spicy steppe aroma of chalk thyme (*Thymus calcareus*) and wormwoods (*Artemisia* spp.). In autumn, we sat on the still warm ground and looked into the clear autumn air at distant coal mines, waste dumps and endless agricultural fields on the horizon. Finally, in winter, when our slopes were covered with snow, we sledged and then warmed up near the wood stove in the house.



Marmota bobak, known as the bobak marmot or steppe marmot, wakes up from a long winter sleep and announces spring with its thin whistles.



First flowers of *Iris pumila*.

The summer cottage of my family existed long before I was born. Next to the house, there was a huge plant of *Adonis vologensis* growing. As my mother told me, this plant was older than her. It was already existing back in the times when my grandfather started to build the house with his own hands and when this place was still part of the steppe slope. My grandparents decided to leave the steppe *Adonis* plant growing near the house. Then it grew in width vegetatively for dozens of years and I remember it being so huge that my kid arms would not have been enough to embrace it. The *Adonis* plant announced the arrival of spring with its bright yellow flowers, visible from far distance when you come. The plant confirmed its Ukrainian name – ‘horytsvit’ literally means ‘flaming flower’, and in the rays of the sun, the yellow petals of numerous flowers looked indeed burning brightly.



Flowering *Adonis vologensis*.



Bright flaming flowers of *Adonis vernalis*.



Colchicum bulbocodium subsp. *versicolor* – one of the first flowers in Ukrainian steppes, which start blooming in February or at the beginning of March.

So, after each year passed, the new springs of my youth were steadily bringing warmth and flowers of hope. When you get used to something, you do not believe it could change. But in 2014, this land became an occupied territory, ruled by undeclared Russian tanks. Since then, I have never returned to the steppe slopes of my childhood again.

However, every year I still visited steppes in spring – from the seashores in Odesa, Kherson and Zaporizhzhia Regions to forest-steppe landscapes of Kyiv and Cherkasy Regions, from Mariupol in the east to Dnipro Upland in Central Ukraine, and Podilla in the west. Who knows if this way, I was catching my dream steppe spring from childhood?



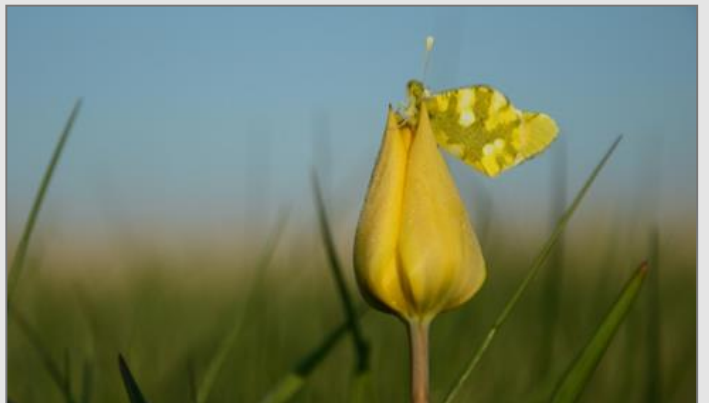
Pulsatilla pratensis with an unusual pale pink colour of petals. Cherkasy Region, central Ukraine.



Colour gradients of the spring steppe flowers: from blue-violet *Muscari neglectum*, through light blue *Hyacinthella leucophaea*, and to white *Ornithogalum kochii*.

Wild tulip *Tulipa suaveolens* (also known as *T. gesneriana*, or *T. schrenkii*) is a fascinating flower of the spring steppe. This species is considered a wild ancestor of cultivated tulips. One of the places where the history of tulip cultivation began was the territory of modern Ukraine, namely Crimea. According to the historical records, in the 16th century,

300,000 tulip bulbs were collected in the vicinity of the town of Kefe (now Feodosia) and sent across the Black Sea to Istanbul, where they were planted in the gardens of the Topkapi Palace during the reign of Sultan Selim II (Peregrym et al. 2009). Those tulips were named "Kefe Lâlesi", which means Kefe tulip.



Wild tulips *Tulipa suaveolens* in the steppes along Syvash Lake between Kherson Region and Crimea.



Colourful fields of *Iris pumila* occur in Ukrainian steppes across all regions. The flowers of this plant can be of different colors and shades, among which the most common are blue, purple and yellow.



Tiny flowers of the spring steppe: *Gagea bulbifera*, *Cerastium pseudobulgaricum*, *Alyssum turkestanicum*.



Orchids are rarely found in the steppe zone. One of them is *Anacamptis morio*, which can form large orchid fields with other species of *Orchidaceae* on the sands in southern Ukraine.



Violet and pink colours in spring steppes: *Iris pontica*, *Prunus tenella*, *Clematis integrifolia*.



Yellow and white in spring steppes: *Tulipa sylvestris* subsp. *australis*, *Viola tricolor* subsp. *matutina*, *Ornithogalum melan-cholicum*.



Bright yellow *Gagea bohemica* and tiny white *Draba verna* in rocky grasslands in Mykolaiv Region.

Thermophilous steppe forests and shrubs of steppe zone are also rich in bright flowers. Such forests are called "bairak" in Ukraine and are spread mainly on the slopes of

river valleys and in ravines. The bairak forests consist mainly of oak (*Quercus robur*), ash (*Fraxinus excelsior*), maple (*Acer campestre*, *A. tataricum*) and lime (*Tilia cordata*) trees.



Spring flowers of steppe forests and shrubs: *Ornithogalum boucheanum*, *Primula veris*, *Convallaria majalis*, *Viola suavis*, *Corydalis solida*, *Fritillaria ruthenica*.

Not only plants but also the entire landscape of the steppe in spring has a special appearance and changes every month. It starts with grey and brown colours in the early spring. Then, it changes from the appearance of splashes of

bright flowers to the development of a green carpet of grasses. Finally, the steppe is covered with feather grasses and various forbs at the end of spring.



Early spring in Chalk Flora Nature Reserve, Donetsk Region.



Early spring steppe flowers: *Crocus reticulatus*, *Draba podolica*.



Adonis vernalis among dry grasses, early spring in Mykolaiv Region.



Flowering *Iris pumila* and *Valeriana tuberosa* in steppes along Azov Sea coast, Meotyda National Nature Park.



Fruiting *Pulsatilla pratensis* in rocky steppe, Mykolaiv Region.



Spring in Podilski Tovtry National Nature Park, Khmelnytskyi Region.



Salvia nutans and *Carduus nutans* in feathergrass steppe, Kamianska Sich National Nature Park, Kherson Region.



Late spring in the southern bunchgrass steppe, Mykolaiv Region. The expanses of the southern steppes give a feeling of freedom and the opportunity to imagine the endless steppes of the past times.

Spring is the best time to visit the Ukrainian steppes, but more and more areas of the steppes have become inaccessible over the last decade. Russian invasion in Ukraine began in 2014 from two steppe regions, namely Crimea and Donbas. With the full-scale Russian aggression started in 2022, most of the steppe zone has been affected by hostilities, and many territories remain under occupation now.

Now another long and difficult winter is ending, when Ukraine is courageously defending itself. With each new spring, green grasses and flowers bring moments of joy and hope, but at the same time, a new spring means another year of hard struggle and losses passed. With my photo story, I would like to thank everyone who supports Ukraine and Ukrainians, that you do not forget and do not turn away these days. And especially I thank all the Ukrainian defenders, who are fighting for our freedom and future.

Slava Ukraini! Glory to Ukraine!

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Stunning flowers and fluffy tender fruits of *Pulsatilla pratensis* in sunrise light, Donetsk Region.



Gladiolus imbricatus in Meotyda National Nature Park, Mariupol District, Donetsk Region.



Sunset in the steppe near Syvash Lake, Kherson Region.



Gymnospermium odessanum, Odesa Region.



Crocus reticulatus, Odesa Region.



Colchicum triphyllum, Odesa Region.

Short Contributions

Functional ecology of cryptogams: an invitation

Cryptogams are an often overlooked component of grassland ecosystems, yet in the face of climate change, they may represent a resilient part of the community. The role of cryptogams in energy and nutrient cycling is especially poorly understood in dry grasslands and wood pasture systems, where they can become locally dominant in terms of surface coverage. Our intention is to gain a deeper insight into cryptic diversity and ecology of these systems, and evaluate the role of cryptogams in climate resilience. We will build a network of surveys of cryptogams, and by focussing on key taxa, make comparative study of key processes in C and nutrient cycling across large biogeographic gradients. If you are interested in learning more, and can participate in terms of surveys and/or providing samples of cryptogams from grasslands, wood-pastures, scrublands, and alpine environments, please contact the team via Rob Mills at University of York, UK (robert.mills@york.ac.uk) to receive information on the network and opportunities to engage.

Robert Mills, York, United Kingdom
robert.mills@york.ac.uk



***Cladonia*-rich grassland at 2600 m a.s.l. in Val Ferret, Switzerland.**



Mossy grassland at ~1700 m a.s.l., Mont Tendre, Switzerland.



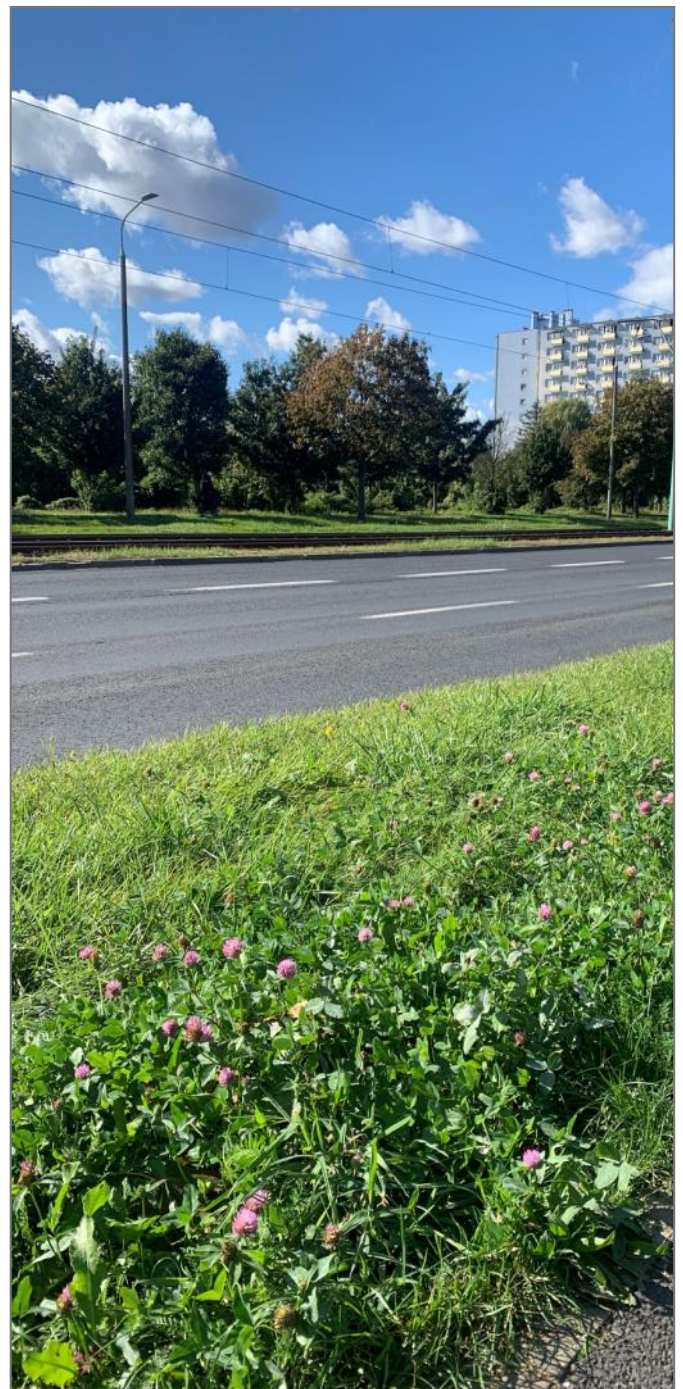
Pollinators et al.: a project on urban grasslands, pollinators and pollination across Europe

Urban expansion is considered one of the major global threats to biodiversity, but focusing conservation efforts on urban green areas might counteract biodiversity loss (Klaus 2013). Specifically, urban infrastructures have already been proven to play a pivotal role in the conservation of urban grasslands. For at least part of their life cycles, many insects are linked to grassland. The strict relationship between insects and vegetation has been extensively investigated. Indeed, vegetation changes have already been proven to affect pollinator communities in urban areas. Vegetation provides trophic sources and shelters, influencing insect diversity and behavior (Casanelles-Abella et al. 2022). On the other hand, vegetation is dependent on insects; 78% of wild plants in temperate areas are pollinated by insects (Ollerton et al. 2011).

By connecting people and goods, linear infrastructure (such as road and railroad verges) reduces and fragments habitats, affecting insect and animal mortality, mobility, and distribution. Roads can affect vegetation and pollinator distribution (Johansson et al. 2018). However, several studies have examined rural linear infrastructures, such as ecological corridors and green areas, as paramount opportunities for conserving grassland species and pollinators. In order to plan conservation measures across Europe for urban habitats, comprehensive research on vegetation, pollinator communities, and their interactions is needed. Specifically, urban road verges have been little investigated as potential habitat for conservation of pollinators.

Research questions

1. Do urban road verges and green areas support different communities of grassland species and pollinators? Are pollination services different between road verges and green areas?
2. How do vegetation, pollinator communities, and pollination services change within cities from north to south of Europe?
3. How do landscape variables (such as amount of green space, types and connections of grassland areas) and local vegetation communities affect pollinator communities and pollination services in urban areas?



Methodology

We will investigate several cities across Europe (from North - Uppsala, Sweden- to South - Turin, Italy). We will select 12 sites per city; in each site, we will select two road verges (distanced by 500 m) and two green areas (small parks or public gardens, less than 500 m distant from road verges).

Then, the protocol is:

- **Vegetation surveys** in 48 plots of 4 m x 4 m; all the most abundant species (percentage cover >1 %) will be recorded (visual estimation 1-100%) at only one-time between 15 May and 15 June 2024 (see Piccini et al. 2024).
- **Pollinator** (bees and hoverflies) community surveys through 48 triplets of pan traps in eight temporal replicates from May to September;
- **Exclusion experiment** in June; 20 flowers of red clover (*Trifolium pratense*) will be covered by a fine mesh before blooming, preventing insect pollination, and another 30 will be left available for visiting insects. Seed production will be evaluated by collecting covered and free flowers.

Expected results and future impacts

This project will increase the knowledge of vegetation and pollinator communities and their interactions in urban road verges and green areas. Moreover, it will help us to understand which biotic and abiotic factors affect vegetation, pollinator communities, and their associated pollination function along road verges and in urban green areas. Considering that the communities of pollinators vary across Europe, we will cover the geographical diversity of Europe, from north to south and east to west. Then, it will be possible to develop management recommendations that are valid across Europe. We want you!

Five cities are already involved in the project (Poznan, Lodz, Warsaw - Poland, Uppsala - Sweden, and Turin - Italy).

We are looking for new collaborations across Europe for fieldwork in 2024.

Please send your inquiries and intention to join this project to the coordinator: Irene Piccini, Poznan University of Life Sciences (irene.piccini@up.poznan.pl).

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Pan traps for pollinator sampling.

Postdoc opportunity in the Vegetation Ecology Research Group of the Zurich University of Applied Sciences (ZHAW) in Switzerland

I am seeking a motivated candidate who would like to come to Wädenswil, on the shores of Lake Zurich, in Switzerland for a Postdoc stay of 12 months. The Postdoc would be financed by a [Swiss Excellence Scholarship for foreign post-docs](#). The successful candidate would come to the inspiring research environment of the [Vegetation Ecology Research Group](#) within the Institute of [Natural Resource Sciences \(IUNR\)](#), nicely located within a small botanical garden above Lake Zurich with great views to both the lake and the mountains.

The call for the next round will be released in August 2024, but likely the rules will remain the same as in previous years:

- Application possible by Postdocs from any country.
- Joint application by Postdoc and host (me).
- Deadline for application in November or December 2024 (depending on your country).
- To be eligible, you need to have your PhD degree achieved after 31 December 2021 and before 31 July 2025 (i.e. you can apply also when you do not have the PhD yet at the application time but expect to get it within the next few months).
- If successful, the Postdoc stay would last from September 2025 to August 2026.
- Postdocs receive a monthly scholarship of CHF 3500 (EUR 3690), which is tax-free, plus some support for travel costs.

The Postdoc topic would have to be discussed and agreed with me sufficiently in advance. Since these scholarships do not allow for field work, the research would have to be based on existing datasets. These could be both datasets/ideas from the Postdoc or from me and my research group or a combination thereof.

Among others, the following topics would be relevant to me, and I would have access to large suitable datasets:

- Further development and calibration of the Ecological Indicator Values for Europe (EIVE; see Dengler et al. 2023) and their use in macroecological studies.
- Quantification of vegetation change in Switzerland and its drivers using various datasets, among others: data from the [Square Foot Project](#) (see Riedel et al. 2023), data from the Swiss Biodiversity Monitoring (BDM; BAFU 2009) or a meta-analysis of vegetation resurveys in Switzerland (similar to the one by Diekmann et al. (2019) for Germany and NW Europe)
- Projects using the data from the GrassPlot database (Dengler et al. 2018; Biurrun et al. 2019).

- Meta-analysis of neophyte impacts in European grasslands similar to the one by Wohlgemuth et al. (2020) for forests.
- Unsupervised classification of Swiss grassland alliances and translation of the results into an electronic expert system that allows the automated classification of plots.
- Classification, biogeography and biodiversity patterns of the basiphilous, mesoxeric grasslands of Europe (*Brachypodietalia pinnati*; see Dengler & Willner 2023) using data from the [European Vegetation Archive \(EVA\)](#).

However, you can also propose your topics where you have access to suitable data as long as they are within my range of expertise (see [RG profile](#)). In any case the aim of the Postdoc stay would be to publish one or two papers in international journals. The success rate of applicants for Postdoc stays supported by me so far was 50%.

There have been two previous such Swiss Excellence Postdoc scholars in my group (Dr. Iwona Dembicz from Poland and Dr. Olha Chusova from Ukraine) and one Postdoc from China who came with a scholarship of his country (Dr. Jinghui Zhang) (see Dembicz et al. 2020 and Chusova & Seiler 2023). They were quite productive in their projects related to GrassPlot (Dembicz et al. 2021a, 2021b; Zhang et al. 2021; more to come) and EIVE (Dengler et al. 2023; more to come) (Fig. 1).

If interested in such a Postdoc, please get into contact with me ASAP to discuss options, preferably before July 2024. If several persons are interested, I will select the one with the best fit to my interests, your dedication and qualification. If you have any questions, do not hesitate to contact me. I look forward to many interesting proposals!

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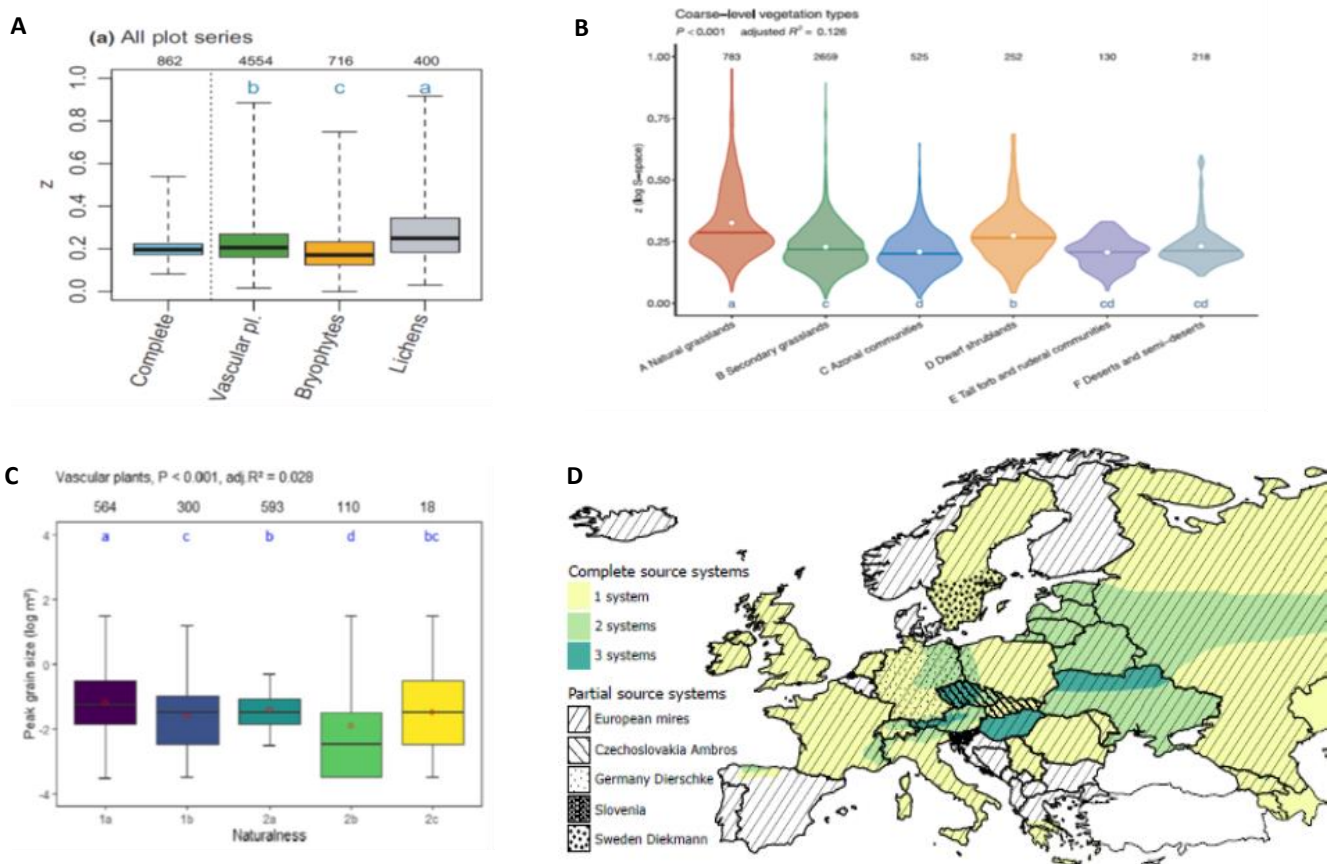


Fig. 1. Examples from the research output of the previous international Postdocs in the Vegetation Ecology Research Group in Wädenswil. A-B: Studies on small-scale beta diversity with the GrassPlot database by Iwona Dembic (A: from Dembic et al. 2021a; B: from Dembic et al. 2021b; more to come). C: Study on scale-dependence of z-values using GrassPlot by Jinghui Zhang (figure from Zhang et al. 2021). D: Olha Chusova worked on ecological niches of plants, using a mesocosm experiment and being one of the main protagonists of the Ecological Indicators for Europe (EIVE) (involved in version 1.0; first author of version 1.5 to come) (figure from Dengler et al. 2023).

Proposed agri-environment schemes are now a major threat to Transylvania's dry grasslands

In September 2016, we helped to host the 13th Eurasian Grassland Conference in Sighisoara, Romania (see EDGG Bulletin 32, October 2016). Many members will remember the landscape from the field excursions at that time. Now, ironically, the new proposals for agri-environment measures (AEM) constitute the greatest single threat to the survival of these important grasslands, their landscape and biodiversity. We have long maintained that the threats to the grasslands can be summarised as the two extremes, intensification and abandonment. The new schemes will push farmers in exactly these directions, and away from the varied mosaic management which is the key to the high biodiversity of the area. Here we examine the design and consequences of previous and proposed AEM. This bureaucratic subject is often followed with less interest by plant scientists and ecologists; but in a large-scale farmed landscape like that of Transylvania, where we depend on farmers to carry out the management to maintain conservation status, AEM are of critical importance.

In the period 2007-2023, the High Nature Value (HNV) Grasslands package was effective in encouraging farmers to carry out conservation management of many important EU Habitats Directive habitats and species, including priority dry habitats as well as damp hay-meadows, rich in important flora and fauna species. The scheme was simple, practical and very popular with farmers, on whom we depend for the good management of this large area. Of the 1.86 m ha of eligible grassland, uptake was high, over 55%. There is no doubt that this has supported the continued survival of Transylvania's mosaic grasslands. The conditions for payment were simple, including:

Pasture: stocking rate between 0.3 and 1.0 livestock units per ha, no additional limits on grazing period (and so grazing allowed April-October)

Hay-meadow: mowing permitted from 15 June (below 600 m altitude) and from 1 July (above 600 m altitude). Mowing by tractors was allowed, while higher payments were available for mowing by hand or by single-axle machines. Owing to the small size of mowing parcels, mowing dates are naturally staggered (it can take several weeks for different owners to mow a 20 ha patch of hay-meadow), offering a lengthy period for seeding of different plant species and emergence/fledging of butterflies and birds.

2024: The Romanian Ministry of Agriculture & Rural Development (MARD) has recently announced revised agri-environment proposals, which represent a major threat to Transylvania's remarkable grasslands and species, owing to their inappropriate design. Over 670,000 ha have been removed from HNV Grassland eligibility and now will be eligible only for an extreme single-species measure (Fig. 1). We

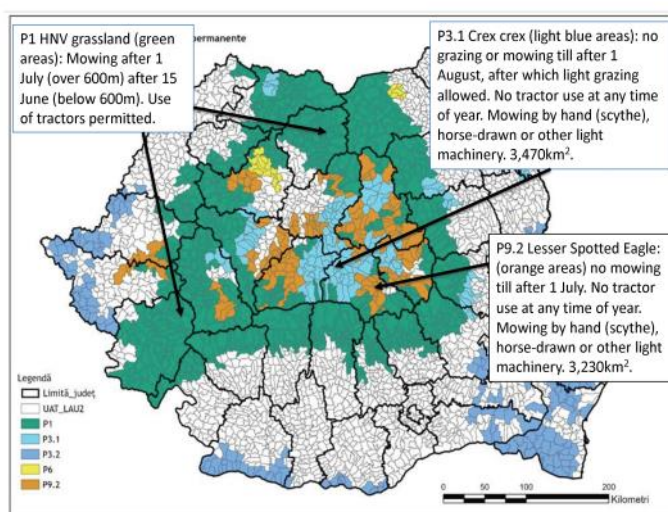


Fig. 1. Romanian AEM proposed for period 2014-2023 (RO Min. of Agriculture).

examine below the impact of Package 3.1 (P3.1), 'Grasslands important for *Crex crex*' on 347,000 ha of grassland.

- 1. Landscape scale,** no targeting of corncrake habitat, no choice of other measures. Under the proposals, if *Crex crex* is detected in a commune (typically 4,000 ha of grassland) the entire commune is only eligible for P3.1, and no other measure. At this geographical scale, over 90 % of the grassland (mostly priority habitats 6210*, 6240* and 40A0*) is not potential *Crex* habitat (Fig. 2). *Crex crex* measures are not applied, to exclusion of other AEM options, at landscape scale in any other EU country; rather they are targeted on *Crex* habitat, in order to avoid requirements being applied in areas without corncrakes, which would damage other species and habitats.
- 2. No use of tractors at any time of year on land under agreement.** In all other EU countries, the exclusion of tractors on land under *Crex crex* agreements is for the breeding period only. The use of tractors outside the breeding period is necessary as this allows the thorough cleaning of the grassland after the breeding period, required to maintain habitat condition. Ground-nesting species including *Crex crex* require a clear grassland base; if a mat of dead material accumulates at the base of the grass, the grassland becomes unsuitable for breeding habitat.
- 3. Failure to provide incentives to farmers to maintain hay-meadows.** Because of the onerous conditions for traditional hay-meadow management, (hay with very low nutritional value, exacerbated by lack of machinery),

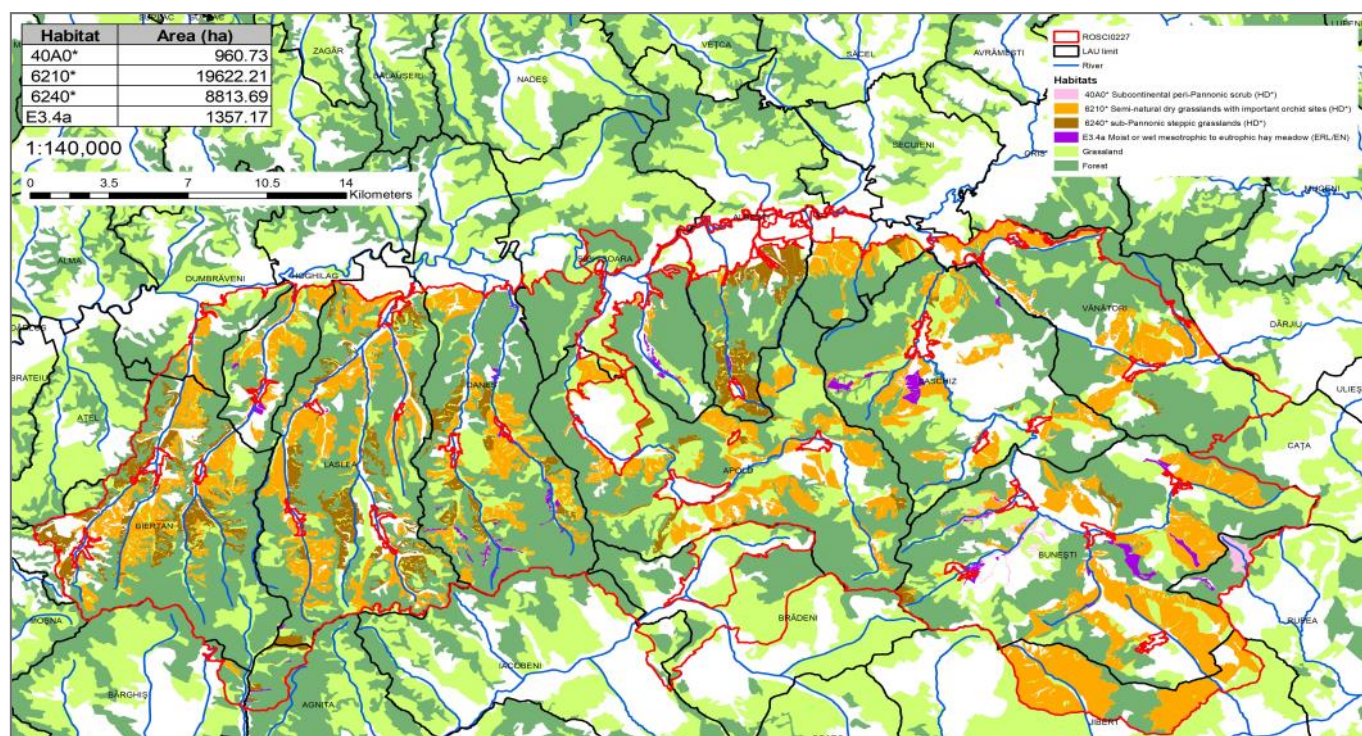


Fig. 2. Habitat distribution in Tarnava Mare SCI (C. Malos). Approximately 29,396 ha are dry grasslands and scrub (40A0*, 6210* and 6240*) and approximately 1,357 ha are E3.4a Moist or wet eutrophic and mesotrophic grassland (including lowland hay-meadows 6510). E3.4a is the typical breeding habitat of *Crex crex*.

P3.1 will encourage farmers either to renounce payments and intensify hay-meadow management (convert them to arable leys for forage, or to intensive pasture), or abandon the grassland to obtain the payment.

This will have a profoundly detrimental effect on the traditional management that has produced a mosaic landscape which for centuries allowed species with a variety of ecological requirements to coexist. It will have a direct negative impact on local farming communities, the guardians of the HNV landscape; and on habitats and species listed in the EU Habitats and Birds Directives.

If any EDGG members would like to contribute expert opinion about the damage to dry grasslands of consistent late mowing after 1 August, without tractor-driven equipment to clear dead grass from the site, do please contact nat@fundatia-adept.org.

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Fig. 3. This farmer is proud of his wildflower-rich hay-meadow. He cannot maintain it without a tractor. It is not practical at large scale: 1) to mow by scythe or walk-behind mower; 2) to mow after 1 August, when hay will be of very low feed value; 3) to gather and remove hay by forking by hand onto a horse-drawn cart. This is one of the precious dry hay-meadows that will be lost under the new scheme, damaging biodiversity including corncrake habitat. Photo: N. Page.

Regional seed mixtures as a tool for increasing species richness in the landscape: an example from the Czech Republic

In the 1990s, shifts in the ownership of agricultural land in the Czech Republic accelerated a decline in crop cultivation and farming as a whole. Consequently, land was frequently converted to meadows and pastures using grass-clover mixtures often sourced from other countries or even continents. This resulted in species-poor meadows, predominantly occupied by a limited number of generalist species. These grasslands do not provide adequate forage to insects and hampered dispersal of native meadow plant diaspores. Only in the White Carpathians in the mid-1990s, production of regional seed mixtures was initiated. The advantage of regional seed mixtures is that the species are indigenous to a specific geographical region, so they are well-adapted to local climatic conditions and capable of establishing at a site. Initially, these seed mixtures were collected manually. However, in order to meet the demand, mechanisation was the only effective way to obtain a sufficient amount of seed material. Nonetheless, the applicability of mechanical seed harvesting is usually limited due to the restricted size of species-rich meadows, unsuitable environmental conditions, and disapproval by the owner. Therefore, the majority of currently produced regional seed mixtures in the country still combine hand-collected/harvested seeds with seed production in seed beds. On the other hand, harvesting seeds directly from species-rich meadows represents a sus-

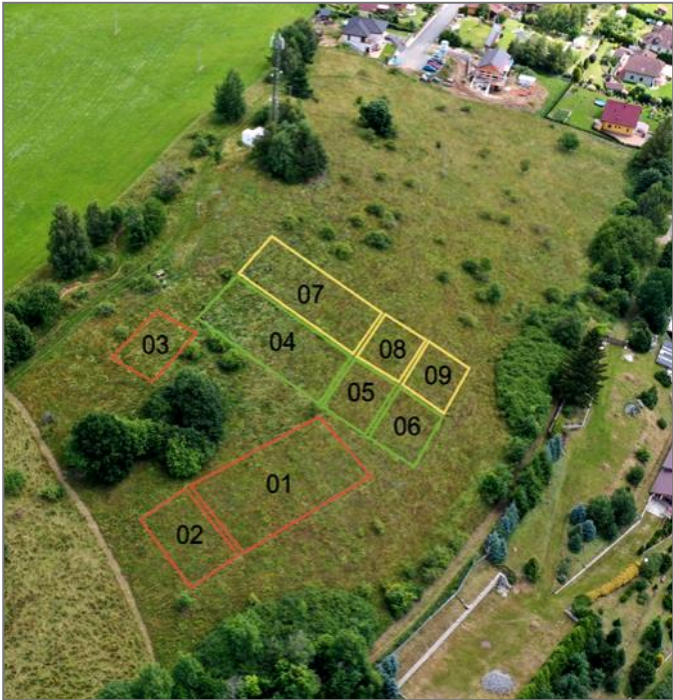


Fig. 1. Species-rich donor meadow divided into sites suitable for hand-guided harvester, hand-held harvester, and green hay method. Seeds were harvested in three different phenological stages. Photo: L. Tichý.

Table 1. Main characteristics of seed harvesters as declared by their manufacturer, and parameter estimates based on practical experience from the Czech Republic. For more harvester types developed in the Czech Republic, see Tichý et al. (2023).

Harvester name	Producer	Machine type	Price (EUR, excl. VAT)	Machine/brush width (cm)	Power (ha/hour)	Advantages	Limitations
1. Brush harvester KS1900	Czech Union for Nature Conservation (ČSOP) White Carpathians (Czech Republic)	Tractor	15,700	290/190	1	Species-rich seed mixture; the wide brush harvests seeds throughout the herb layer; certified	Performance dependent on tractor type and slope; visually higher damage to insects
2. Wiesefix	Neisser Geoprodukte GmbH (Germany)	Hand-guided brush harvester	15,900	120/70	0.25	Noiseless electric wheel and brush drive; visually lower damage to insects	Low rotational force, unsuitable on steep slopes
3. Grass Grabber	Grass Grabber (Australia)	Hand-guided brush harvester	3,400	120/75	0.25	Easy to handle; fuel drive, harvesting of tall grasses and herbs; compatible with four-wheel	Tough brush breaking culms, difficult vertical position adjustability of the brush, needs experienced operator; unsuitable on steep slopes
4. Hand-Held Seed Harvester	GP Restoration Solutions (Canada)	Hand-held brush harvester	2,000	60/50	0.05	Similar to brush cutter; more suitable for small areas, steep slopes, and inaccessible terrain	Physically demanding operation; rapid wear of harvesting mechanism; high amount of excess biomass, frequent emptying of container necessary



Fig. 2. Brush harvester machines: A) Tractor brush harvester developed in the White Carpathians; B) Wiesefix, hand-guided brush harvester; C) Grass Grabber, hand-guided brush harvester; D) Hand-held Seed Harvester. Photos: J. Říhová; L. Tichý; M. Straková.

tainable method to obtain locally native seed mixtures. In the past two years, we tested and evaluated various brush harvester machines (Supported by Norway through the Norway Grants, reg. number 3211100009). Our research primarily focused on evaluating various harvester models utilising a fast-spinning brush mechanism to selectively collect seeds directly from a meadow, rendering them undamaged and suitable for later mowing. We tested their effectivity in various regions, phenological stages, and environmental conditions (Fig. 1). The project also helped to establish a [public electronic database of species-rich donor meadows](#), intended for possible future seed collection and long-term monitoring. The tested three types of harvesters, i.e. tractor-driven, hand-guided, and hand-held machines, varied in several parameters, including operational efficiency, suitability on slopes, quality and species diversity of the collected seeds, and quantity of excess biomass. For a summary of the basic features of the harvesters used in our research, see Table 1 and Figs. 2. Two alternative techniques, transfer of green hay and threshing out dry hay, were also evaluated. They are implementable without specialised mechanisation, but their feasibility is limited to small-scale projects due to the considerable volume of biomass involved. In contrast, brush harvesters may collect many seeds with minimal biomass, facilitating easier manipulation, storage and sowing. According to our preliminary findings, all tested harvesters worked effectively, capturing various species during the season. The harvested seed material (Fig. 3) typically included 50–65% of all species present at a site, capturing nearly all the species, which showed optimal ripeness. Grasses were the most common seeds in the mixture, while seeds of broad-leaved herbs were represented less frequently. Grasses dominated in the harvested material early in the summer (end of June and July), comprising over 95% of the weight. By late summer, the proportion of broad-leaved herbs increased, but the total weight of harvested seeds tended to decrease, partly because the seeds of later-maturing herbs are smaller. It was usually possible to collect 0.5–2(–3) grams of seeds per square meter in a single harvest. Nevertheless, plants with very low occurrence or with small seeds were not included in these mixtures at all or just in minimal amounts. The project revealed that mechanised harvesters consistently collect seeds from diverse environ-

ments, making regional seed mixtures an optimal solution in various projects for the restoration of, e.g. extraction sites of raw materials, surroundings of urban areas, and the vicinity of road constructions. However, higher costs and certification of harvested seed mixtures limit their broader implementation in the Czech Republic.

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Fig. 3. Sample of harvested seed material with cut plant biomass. Photo: T. Štochlová

Recent Publications of our Members

In this section, the contents of which will also be made available via our homepage, we want to facilitate an overview of **grassland-related publications** throughout Eurasia and to improve their accessibility. You are invited to send lists of such papers from the last three years following the format below to Rocco Labadessa, rocco.labadessa@gmail.com. We will include your e-mail address so that readers can request a pdf.

Biodiversity and Ecology

Jefferson, R.G., Wagner, M., Sullivan, E., Tatarenko, I., Westbury, D.B., Ashton, P. & Hulmes, L. 2023. Biological Flora of Britain and Ireland: *Geranium pratense*: No. 305. *Journal of Ecology* 111(12): 2750–2780.

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Conservation and Restoration

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Methodology, classification, databases

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Misumena vatia grabbing a bee, Solothurn, Switzerland. Photo: M. Buchler.

Forthcoming Events

Online keynote lecture

Orsolya Valkó: Disturbance ecology in grasslands

26 March 2024, 16:00 CET

Link: <https://zhaw.zoom.us/j/96086687383>

18th EDGG Field Workshop

1-11 June 2024, SW Alps, Italy and France

See details at pp. 9-15.

Macroecology 2024

12-14 June 2024, Marburg, Germany

Conference website: <https://www.uni-marburg.de/>

7th European Congress of Conservation Biology (ECCB)

17-21 June 2024, Bologna, Italy

Conference website: <https://eccb2024.eu/>

19th Eurasian Dry Grassland Conference 2024

26 August – 1 September 2024, Bolzano/Bozen, Italy

See details at pp. 16-19.

GfÖ - Ecological Society of Germany, Austria and Switzerland - 2024

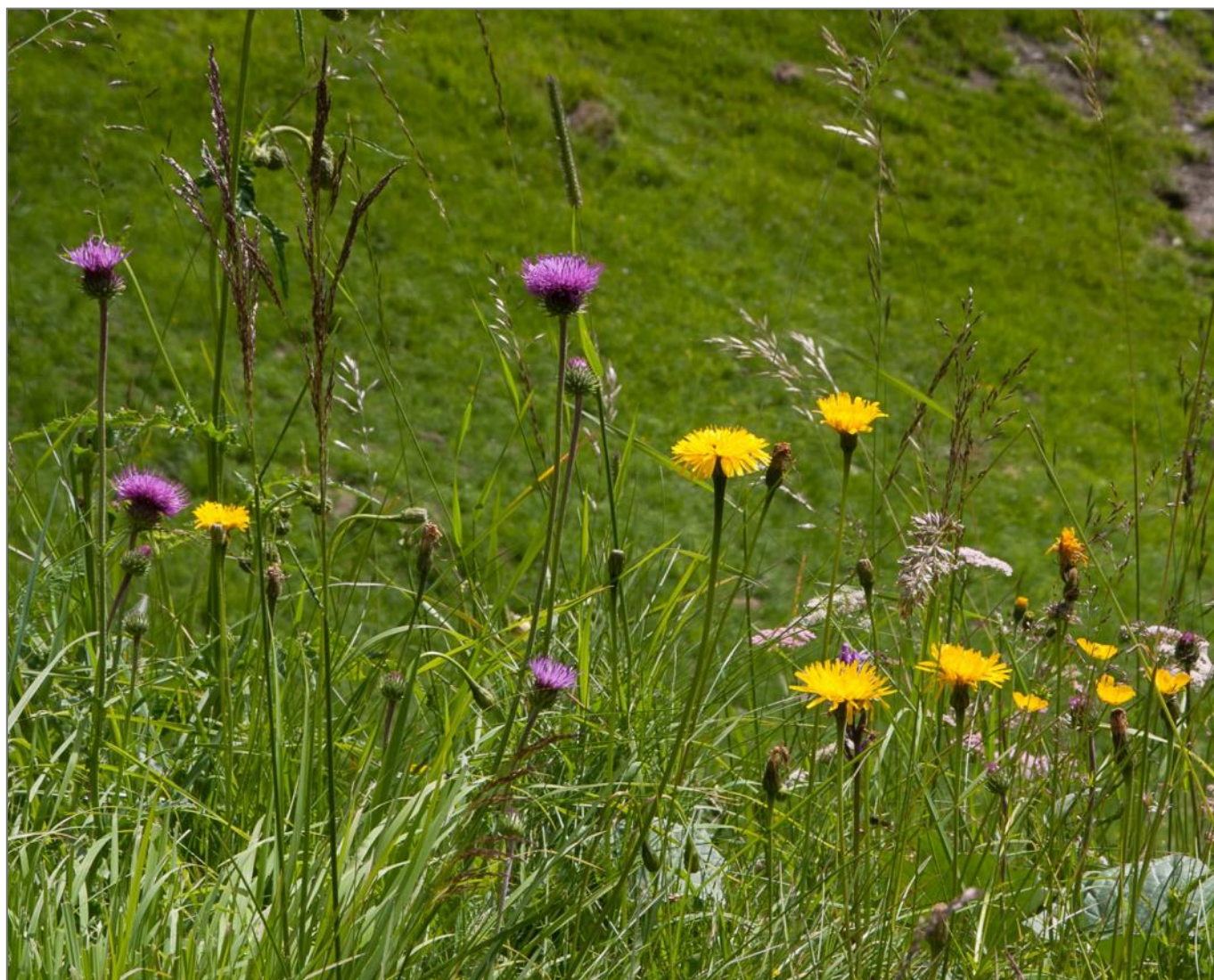
9-13 September 2024, Freising, Germany

Conference website: <https://www.gfoe-conference.de/>

Joint IAVS/EVS Conference

15-20 September 2024, Funchal, Madeira, Portugal.

Conference website: <https://www.iavsportugal2024.com/>



Subalpine grassland, Austrian Alps. Photo: J. Dengler.



EDGG on the web:

<http://www.edgg.org>



The Eurasian Dry Grassland Group (EDGG), founded in 2008, is a working group of the International Association for Vegetation Science (IAVS) and member of the European Forum on Nature Conservation and Pastoralism (EFNCP). On 10 March 2024, it had 1470 members from 65 countries.

The **Eurasian Dry Grassland Group (EDGG)** is a network of researchers and conservationists interested in any type of Palaeartic natural and semi-natural grasslands. It is an official Working Group of IAVS (<http://www.iavs.org>) but one can join our group without being an IAVS member. We live from the activities of our members. Everybody can join the EDGG without any fee or other obligation.

The EDGG covers all aspects related to grasslands, in particular: plants - animals - fungi - microbia - soils - taxonomy - phylogeography - ecophysiology - population biology - species' interactions - vegetation ecology - syntaxonomy - landscape ecology - biodiversity - land use history - agriculture - nature conservation - restoration - environmental legislation - environmental education.

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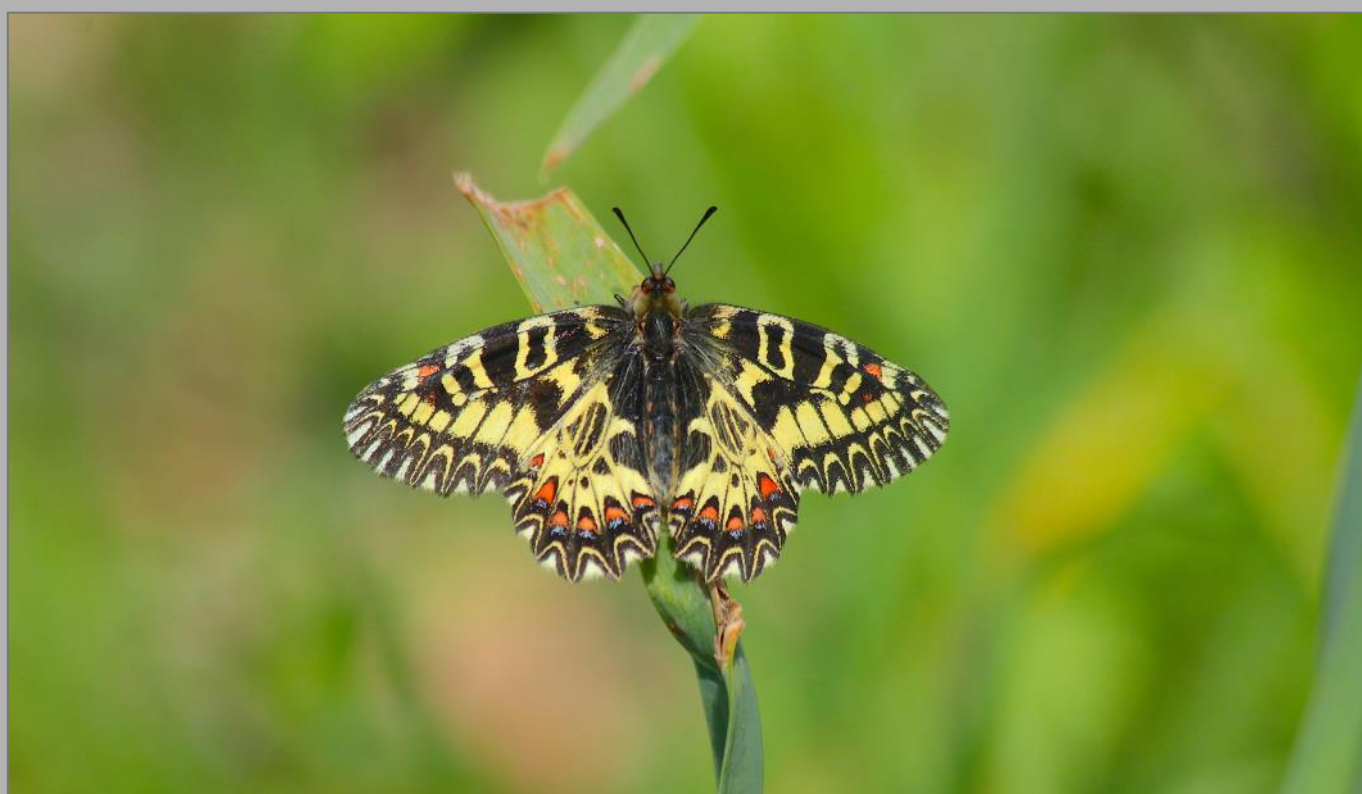
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Zerynthia cassandra in urban grasslands of Rome, Italy. Photo: L. Ancillotto.