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PALAEARCTIC GRASSLANDS

Journal of the Eurasian Dry Grassland Group

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Palaearctic Grasslands
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Palaearctic Grasslands, formerly published under the names *Bulletin of the European Dry Grassland Group* (Issues 1–26) and *Bulletin of the Eurasian Dry Grassland Group* (Issues 27–36), is the journal of the Eurasian Dry Grassland Group (EDGG). It appears in four issues per year. *Palaearctic Grasslands* publishes news and announcements of EDGG, its projects, related organisations and its members. It also serves as an outlet for scientific articles and photo contributions.

Palaearctic Grasslands is freely available at http://edgg.org/publications/bulletin and new issues are announced to all EDGG members.

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 Anna Kuzemko (anyameadow.ak@gmail.com) AND Idoia Biurrun (idoia.biurrun@ehu.es).

Photo contributions (photos for general illustrative purposes with captions; Photo Stories) should be submitted to Rocco Labadessa (rocco.labadessa@gmail.com).

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

Contributions to the section **"Recent Publications of our Members"** should be sent to Iwona Dembicz (i.dembicz@gmail.com).

Palaearctic Grasslands is published by EDGG c/o Prof. Dr. Jürgen Dengler, Plant Ecology, BayCEER, University of Bayreuth, Universitätsstr. 30, 85447 Bayreuth, Germany.

Palaearctic Grasslands on ResearchGate, Google Scholar, vegsciblog.org

Editorial Board

On front cover page: Sunset sky with Griffon vultures (*Gyps fulvus*) in Val d'Agri, Basilicata, Italy. Photo: R. Labadessa.

Editorial

Dear readers,

The year 2022 is coming to an end. It was not easy for many people on the planet. It brought full-scale war to the European continent, which had not known anything like this for over 70 years. But, at the same time, we were finally able to breathe freely, as the global Covid-19 pandemic subsided and it became possible for scientists around the world to resume participation in international conferences in a face-to-face format. After a two-year break, our group was also able to finally gather in hospitable Tolosa and hold the long-awaited 17th Eurasian Grassland Conference. It was so great to catch up with old friends, meet new ones and feel the much needed support of our community. You can see a detailed report on this event with many photos in this issue on pp. 14-41. It is noteworthy that one of the most numerous delegations at this conference was Ukrainian, and that all Ukrainian participants received travel grants for participation in the conference. In addition, four Ukrainian scientists received grants from EDGG to continue their research, which was interrupted by the war. All this became possible thanks to the initiative "EDGG supports Ukraine", particularly Ukrainian Members Research Fund developed in collaboration with IAVS, which was announced in the previous issue. And in this issue, we already congratulate the winners of the grant competition (pp. 4-6). The members of our group have been quite active this year, had a lot of field research, collected new data and took many new bright photos, as evidenced by the news about the Nordic-Baltic Grassland Vegetation Database, as well as traditional "Photo Competition" and "Photo Story" sections.

We thank all our readers, and especially our contributors, who have been with us throughout 2022. We put a lot of effort into getting this double issue of *Palaearctic Grasslands* published on Christmas Eve and we really hope that our readers will enjoy it during these festive days.

We sincerely wish you in the new year new field studies and new conferences, new beautiful grasslands, new discoveries and achievements and that no external factors can destroy your plans.

With best regards,

Anna Kuzemko

Winter moss carpet with *Erodium acaule*, Bari, Italy. Photo: R. Labadessa.

News

EDGG Fund for Ukrainian Scientists
Funded projects and new call for donations

In the last issue of *Palaearctic Grasslands* we launched the "EDGG Fund for Ukrainian Scientists". We are grateful to Hans Henrik Bruun, Jürgen Dengler and several anonymous doners who up to now donated 1,659.45 EUR. Secondly, during the Eurasian Grassland Conference in Tolosa, the auction led by Martin Magnes yielded 730 EUR. Many thanks to the donors of the goods, the bidders and to Martin for pushing the prices so high. Lastly, the EDGG Executive Committee decided to add the baseline funding from IAVS for this year (500 EUR) to the fund. In total, we had 2,889.45 EUR available until 22 December 2022.

At the same time, we had received six exciting project proposals from Ukrainian scientists affected by the war. The Grant Committee provided a ranking, and we are happy to announce that the first four applicants received a 500 EUR grant each - see the boxes below for their projects. **Congratulations to the grantees (see below)**. We are looking forward to the outcomes of their projects, which will (also) be published in *Palaearctic Grasslands*.

However, this is not the end. Ukraine and the Ukrainian scientists are still suffering from the Russian invasion in their country. Therefore, EDGG wishes to keep its "Fund for Ukrainian Scientists" alive as long as the situation remains like that. **We invite you, the members of EDGG, to support the Ukrainian grassland scientists by further donations**. Small donations are also welcome! It is very easy to make donations (see below). If you wish that your name as donor is mentioned, please notify the chair of the Grant Committee (dr.juergen.dengler@gmail.com).

Likewise, we also invite Ukrainian grassland scientists to submit new applications for grants up to 500 EUR (see the rules below). Moreover, the current grantees can make a new application when their project is finished. The Grant Committee will regularly make a ranking of the available applications, and whenever we have another tranche of 500 EUR, we will award a new grant.

FOR UKRAINIANS - How to apply for a grant:

- Projects ideas could either be proposed by EDGG or by the applicant. Projects should be outlined in a way that they can be conducted under conditions of war in the country.

Mesoxeric grassland in the Carpathians, Ukraine. Photo: A. Kuzemko.

- Currently, EDGG offers work options in two such projects, namely in its regional vegetation-plot databases (GrassVeg.DE and Nordic-Baltic Grassland Vegetation Database) for digitising and georeferencing plot data from the literature.
- Ukrainian members can propose their own project ideas, e.g. concerning the analysis of data or the writing of a manuscript.
- If EDGG members have suitable project ideas which they wish to offer, they can propose them to the Funding Committee.
- Any Ukrainian member can apply to the Funding Committee to receive a grant.
- Decisions on the assignment of grants to applicants are made by the Funding Committee whenever money and applications have accumulated.
- Funds are normally given in 500-EUR tranches, but smaller amounts are possible if there are many applicants or only limited funds. If there is enough money available, the Funding Committee can assign another tranche to the same applicant for the continuation of the same project or for another project.
- For each project, the Funding Committee appoints at least one mentor from outside Ukraine whose job is to stay in contact with the grantee and support her/him in the project.
- The grant is paid prior to the start of the project.
- After the completion of the project, grantee and mentor together are to send a short (1 paragraph) report on the achievements of the project.
- From time to time, the Funding Committee will provide summarizing reports on all running projects on the EDGG website and in *Palaearctic Grasslands*.

FOR OTHER NATIONALITIES - How to make donations:

You can make donations, big or small, to our fund either with credit card via our online form or by money transfer to IAVS' Dutch bank account. Please note that the money will go through the IAVS accounts. Therefore, it is crucial that you indicate the purpose of your payment precisely as stated below because otherwise the money might not reach EDGG's Fund.

(A) With credit card via the online platform

- You can make your payment here: **https://www.iavs.org/donations/donate.asp?id=21837**
- Please indicate whether you wish your name as donator to be publicized or not

Zmiinyi (Snake) Island (Ukraine), the study site of the funded project by Oleksii Vasyliuk.

(B) With bank transfer to IAVS' Dutch bank account

- BIC/Swift code: **SNS BNL 2A**
- IBAN: **NL40 SNSB 0921 5290 23**
- Recipient: **INTERNATIONALE VERENIGING VOOR VEGETATIEKUNDE**
- Give the following subject line: **EDGG Donation Fund for Ukraine**
- If you agree with your name being listed as doner, please send an e-mail with your name and the date and amount of the donation to dr.juergen.dengler@gmail.com
- Fees: **0.07 EUR per transaction.**

THANK YOU FOR YOUR SUPPORT OF UKRAINIAN SCIENTISTS IN NEED!

The first four funded projects:

Project #1: Natalia Zogorodniuk – Bryophytes in grasslands of the Kherson and Mykolaiv regions

The aim of the study is to determine all the briophytes collected during the 15th EDGG Field Workshop (May - July 2021), about 200 herbarium specimens in total, and to make them available for publications from the dataset.

Project #2: Oleksii Vasyliuk – Dataset on the biodiversity of Zmiinyi (Snake) Island

The aim of the project is to compile all biodiversity data (all taxonomic groups) of this enigmatic island that have been published in scattered sources and prepare and publish the resulting dataset in GBIF.

Project #3: Oleksii Marushchak – Preservation of valuable data on the distribution of rare steppe lichens in the occupied territories of Ukraine

The main aim of this small grant is to support the creation of a large dataset consisting of all currently known localities and records on rare terricolous species of lichens with arid ecology from the South-East steppe regions of Ukraine. This group includes the vulnerable vagrant species *Agrestia hispida, Circinaria fruticulosa, Seirophora lacunosa, Xanthoparmelia camtschadales*, *X. ryssolea* etc. Their habitats are now occupied by the aggressor to a large extent. In addition, numerous old herbarium specimens of lichens with labels of disappeared settlements in the south of Ukraine dating back to 1932 will be digitized. The project is intended to collect data saved by scientists specialized exactly on this group of living organisms, organize it in a proper way, and, keeping the correct authorship, publish on GBIF. As the most sensitive, in ecological meaning, group of living organisms, terricolous arid lichens are indicators of quality of environment, e.g. weathering indication. Collecting information on their distribution will help to assess the changes to the habitats (at least in places of their initial growth) after the war ends.

Project #4: Maryna Zakharova – Distribution of rare plants in the Niznyodnripro Sands nature reserve (Kherson and Mykolaiv regions, Ukraine)

The Grant Committee
(*Idoia Biurrun, Iwona Dembicz, Jürgen Dengler, Rocco Labadessa, Stephen Venn*)

Winners of funded projects: Oleksii Vasyliuk, Oleksii Marushchak and Maryna Zakharova.

New Book Review Editor and update on procedures

For the last few years, Péter Török has served as *Palaearctic Grasslands'* Book Review Editor, and under his coordination, numerous reviews on relevant titles have been published by various authors. Due to increasing other obligations, Péter has recently resigned from this task, and we would like to thank him for the services he provided for EDGG.

Since the next elections for the EDGG Executive Committee (EC) will be in less than half of a year, we decided to fill the function of the Book Reviewer *ad interim* with Jürgen Dengler, who has experience in this job from the past.

Accordingly, we ask you to direct all proposals and requests related to book reviews to him:

- Publishers and authors can propose their new books for review.
- EDGG members interested in writing book reviews can either propose specific titles they wish to review or place their general interest.

In both cases, the Book Review Editor serves to bring both parties together. The principle is that we expect the publisher to provide a free review copy, which after the review remains with the reviewer. Apart from books, it is also possible to review smartphone apps, computer software and interactive websites.

If you have suggestions or questions, please contact

Jürgen Dengler, Wädenswil, Switzerland
dr.juergen.dengler@gmail.com

***Helicella itala*. Photo: J. Dengler.**

Call for photos for *Palaearctic 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 a focus 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:

1) If your photos have already been published in *Palaearctic Grasslands*, you can submit them to the global map citing the DOI of your article or of the whole issue (you can find all published issues here: https://edgg.org/publications/bulletin);
2) If you are submitting new vegetation photographs to *Palaearctic Grasslands*, either within an article, a photo story or for general illustrative purposes, you can provide each photo file with the following information (* = required fields): date (year/month/day); author's full name*; place name; latitude and longitude*; vegetation type; vegetation classification system; naturalness; dominant species list*; additional comments.

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.

Deadline for photo submissions is **31 January 2023**.

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

Call for Photo Competition *"Grassland Lichens"*

The theme of the Photo Competition is "**The lichens of the Palaearctic Grasslands**". Lichens are fascinating organisms. Although they are functionally important and serve as warning indicators when grasslands are in poor condition, little is yet known about them. Lichens are attractive and come in a variety of shapes and colours, especially after autumn rains, thus enhancing the beauty of grassland ecosystems when the flowering season of vascular plants is ended. Can you capture the beauty of grassland lichens in a photograph?

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 by **31 January 2023**.

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

Toninia sp. **(bluish) and** ***Fulgensia sp.*** **(yellow) as components of the colored lichen community in dry grasslands, Navarre, Spain. Photo: J. Dengler.**

EDGG Event

17th Field Workshop 2023 — Inner Alpine valleys of the south-eastern Alps (Italy, Switzerland) Pre-announcement

The EDGG Field Workshop 2023 will take place in the Italian south-eastern Alps, namely in the autonomous province of Bolzano/Bozen (Region Trentino-Alto Adige), Valtellina (Region Lombardy) and in the Val Müstair/Münstertal (Switzerland). We will focus on various types of grazed dry meadows as well as visits to some semidry hay meadows. The workshop is organised by the three local institutions, namely the Institute for Alpine Environment of Eurac Research, the Free University of Bozen-Bolzano and the Museum of Nature South Tyrol.

Field days: Friday 2nd of June until Saturday 10th of June 2023

Travelling days to and from Bolzano/Bozen: Thursday 1st and Sunday 11th of June 2023

Attendees: 16 people; we plan to travel to the sites in two 9-seat minibuses. In addition, scientists and students from South Tyrol will join to help with logistics and the fieldwork using their own cars.

Excursion in May 2022, during a regional dry meadow conference in Schlanders/Silandro (Vinschgau/Val Venosta). Photo: A. Hilpold.

Landscape in the Matsch/Mazia Valley, South Tyrol, Italy. Photo: A. Hilpold.

Accommodation: we will stay at three places, one around Bolzano/Bozen, one around Mals/Malles and one in Valtellina.

We will spend the first three days of the workshop in the wider Bolzano area. The Eisack Valley between Bolzano and Bressanone, the Adige Valley between Merano and Bolzano, and the lowlands between Bolzano and Trento are moderately continental with a strong Mediterranean influence. Dry grasslands here are mostly restricted to small-scale specific sites. Then we drive to the Vinschgau Valley, the driest valley in the Eastern Alps. Here we will spend four days. We will also make a detour to Val Müstair (CH) – geographically a side valley of the Vinschgau. If there are issues for individuals to enter Switzerland, the groups can be divided and one group will stay in Val Venosta. The remaining days of the excursion will be spent in the moderately dry valleys of Valtellina, Valcamonica and Val di Sole.

A full call with application will be possibly published in the EDGG media in January or February 2023.

Local organizing team:

Andreas Hilpold, Bolzano, Italy, andreas.hilpold@eurac.edu

Lisa Angelini, Bolzano, Italy, lisa.angelini@eurac.edu

Julia Strobl, Bolzano, Italy, julia.strobl@eurac.edu

Camilla Wellstein, Bolzano, Italy, camilla.wellstein@unibz.it

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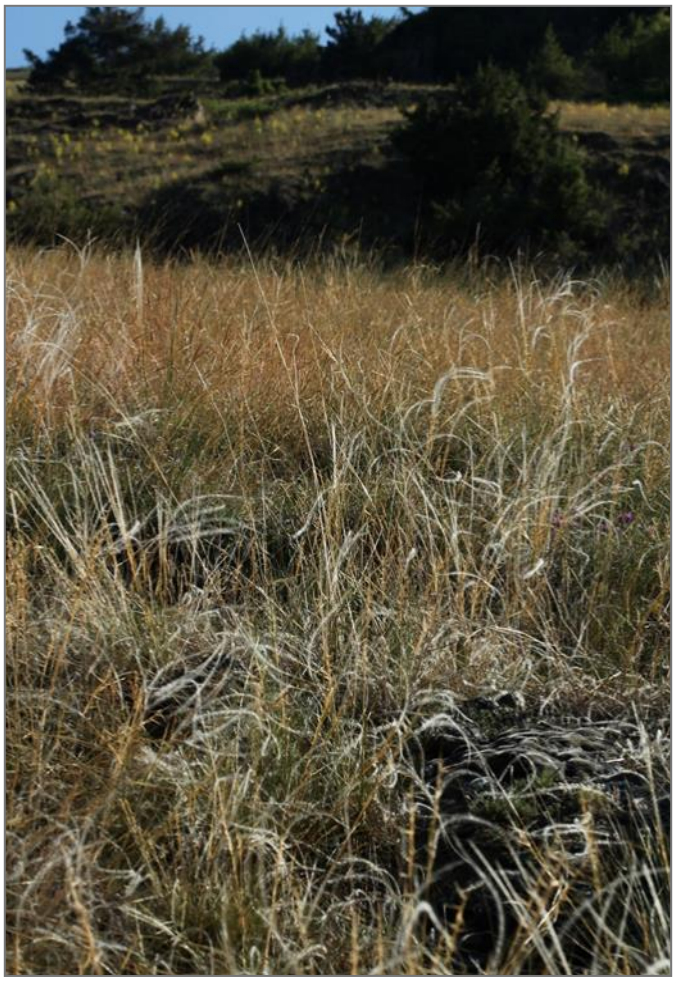

Meadows with *Stipa pennata* agg. in the upper Vinschgau/Val Venosta. Photo: A. Hilpold.

The Bolzano/Bozen area is mostly covered with vineyards and supramediterranean deciduous forests, but patches of dry meadows occur in between. Photo: A. Hilpold.

EDGG Event

18th Eurasian Grassland Conference — September 2023, Hungary Preliminary call

The 18th Eurasian Grassland Conference (EGC) will be hosted by the Seed Ecology Research Group, Centre for Ecological Research (Vácrátót, Hungary). The conference venue will be in the visitor center of the Körös-Maros National Park Directorate in Szarvas, which is in the heart of the Hungarian Great Plain. The planned dates of the conference is 25-28 September 2023. In the three-day-long post-conference excursion participants can get familiar with the dry and wet grasslands typical to the Duna-Tisza Interfluve in the Kiskunság National Park. Further details will be announced soon by the organisers (Balázs Deák, Orsolya Valkó and András Kelemen) in forthcoming issues of *Palaearctic Grasslands*, via the EDGG mailing list and on the conference website.

We hope that the conference will provide a great opportunity for grassland researchers to interact and exchange knowledge related to the flora, fauna, management and conservation of Palaearctic grasslands. We are looking forward to host you in Hungary!

We will add updates about the conference program at the EDGG website.

Coordinators of the local organizing team:

Balázs Deák, Budapest, Hungary, debalazs@gmail.com

Orsolya Valkó, Budapest, Hungary, valkoorsi@gmail.com

András Kelemen, Budapest, Hungary, kelemen.andras12@gmail.com

Alkaline landscape in Mikla-puszta. Photo: A. Kelemen.

***Gentiana pneumonanthe.* Photo: A. Kelemen.**

***Spiranthes spiralis*. Photo: O. Kiss.**

EDGG Event

Talk Grasslands
Winter 2022-2023

- Alpine Grassland Conservation in North Tibet, China
  Jianshuang Wu
  Friday 27th January 2023, 09:00 CET.

- Flower-insect interactions in mountain ecosystems
  Elena Eustacchio and **Marco Bonelli**
  Friday 24th February 2023, 10:30 CET.

- Ancient grasslands – land use legacies
  Sara Cousins
  Friday 17th March 2023, 10:30 CET.

This will be the third year of our series of online presentations during the winter season. As previously, we will try to present a diverse range of topics from diverse regions. This time, the talks will be broadcast on Friday mornings, the first at 9:00 a.m. CET and the other two a little later, at 10:30 a.m.

The talks will be broadcast via Zoom (Meeting ID: 612 7535 3870 Passcode: 349764). Each talk will have a duration of 45 minutes followed by Q&A session. Visit EDGG's Talks page to find more information and links to access the videos after the talks. The January Talk is confirmed and details of the two other Talks will be announced on the web-page as soon as they are confirmed.

Please contact the organiser if you have any questions:
Stephen Venn stephen.venn@helsinki.fi

Jianshuang Wu is a grassland scientist at the Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, China. His research investigates ecosystem services and functions, plant community assembly in terms of plant species and functional trait diversity, and ecosystem stability and resilience under changing climate and intensifying human pressures. He worked for five years at the Institute of Biology at Freie Universität Berlin, jointly supported by the Chinese Scholarship Council, China Postdoctoral Science Foundation, and Alexander von Humboldt Foundation of Bonn, Germany. Prof. Dr. Wu's team uses long-term field observations at alpine meadows, steppes, and deserts across North Tibet for ecological theory validation of alpine grasslands. They also apply time-series remote sensing products to examine and mechanistically understand the changes in alpine ecosystem multifunctionality at broad-scales on the Qinghai-Tibetan Plateau in China. Recently, his research also involves livelihood diversification of small herder households under commission of rangeland conservation policy.

Elena Eustacchio is a PhD Student in Environmental Sciences of the University of Milan (Italy). Her PhD project is focused on the study of plant and arthropod interactions in alpine ecosystems. She is working on the European Alps, in particular on the Orobic and Lepontine Alps as well as within the Stelvio National Park (Northern Italy). Her research investigates how plant-arthropod interactions change along an altitudinal gradient, taking into account also different ecosystems management, in order to identify those focal plant and animal species responsible for the ecosystems stability and organization.

Marco Bonelli is an entomologist working as postdoctoral researcher at the Department of Biosciences of the University of Milan (Italy). His current research mainly focuses on biotic interactions (especially flower-arthropod interactions and pollination) in Alpine environments, with a special interest for early-season interactions. His other interests include: insect physiology, biogeography, biospeleology, and ethno-entomology.

Sara Cousins is a plant ecologist and professor in Physical geography at Stockholm University, Sweden. Her research interests focus on community ecology using landscape-scale analysis of habitat change in both Sweden and the UK, with a bias towards plants and dispersal. She includes effects of soil, topography and climate change on plant communities and habitat change.

EDGG Event

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Conference report
17th Eurasian Grassland Conference (2022, Spain)
Tolosa, Basque Country, with post-conference excursion in Navarre

Since 2004, the Eurasian Dry Grassland Group (EDGG) has held annual conferences across the Palaearctic region. After the successful 16th Eurasian Grassland Conference (EGC) in Graz (with post-conference excursion in Slovenia) in May-June 2019, the next meeting was planned to be held in Tolosa (Spain) in September 2020. After two consecutive postponements due to the COVID-19 pandemic the Tolosa meeting was finally held in September 2022, organized by the EDGG and the University of the Basque Country and supported by the IAVS, the Town Council of Tolosa, the Department of Environment and Water Engineering of the Gipuzkoa Provincial Council, The Basque Government, the University of the Basque Country and HAZI, the Basque foundation for rural, coastal and food development.

Fig. 1. View of Tolosa and Oria river, dry in this hot summer. Photo: J. Dengler.

The 17th Eurasian Grassland Conference "Grassland dynamics and conservation in a changing world" was held in Tolosa (Basque Country, Spain) with a post-conference excursion in Navarre from 12th to 18th September 2022 (Biurrun 2022). The venue was the TOPIC, the Tolosa Puppets International Centre, located in the ancient Courthouse of Tolosa, an historic town that was an important checkpoint between de kingdoms of Navarre and Castile, France and the Cantabrian harbours (Fig. 1). The event was officially opened on 13th September by the speeches of the Mayoress of Tolosa, Olatz Peon, the Head of the Agriculture and Territorial balance in the Gipuzkoa Provincial Council, Xabier Arruti and the Dean of the Faculty of Science and Technology of the University of the Basque Country, Fernando Plazaola (Fig. 2).

The conference was attended by 71 participants from 18 countries. Ten were supported by IAVS, both via regular grants (three, from Poland) and an *ad hoc* grant for seven Ukrainian scientists.

Spain	23	Sweden	2
Hungary	7	Australia	1
Ukraine	7	Austria	1
Belgium	5	Germany	1
Poland	5	Iceland	1
Czech Republic	4	Ireland	1
Italy	4	Slovakia	1
United Kingdom	4	South Africa	1
Latvia	2	Switzerland	1

Fig. 2. Opening ceremony. From left to right, Xabier Arruti, Head of the Agriculture and Territorial balance in the Gipuzkoa Provincial Council, Olatz Peon, Mayoress of Tolosa, and Fernando Plazaola, Dean of the Faculty of Science and Technology of the University of the Basque Country. Photo: J.A. Campos.

Workshops, welcome drink and touristic tour

Two optional workshops were held prior to the opening ceremony, on 12th September. Rocco Labadessa, assisted by Leonardo Ancillotto, led the workshop ***Introduction to Orthoptera***, which included a lecture of 1h30m, followed by practical activities in the field (3 hours). Eighteen people atended the course and had the opportunity to learn key aspects on the taxonomy and ecology of grasshoppers, katydids and crickets, in the nice slides presented by Rocco in the brief course indoors (Fig. 3). Outdoors, we enjoyed catching orthoptera with nets and found some nice specimens belonging to five different families and different ecological requirements (Figs. 4, 5). They were probably quite stressed by the blistering heat, with 40ºC in the south facing slope where we tried to catch them.

In addition to some common and widespread autumn grasshoppers, like *Chorthippus brunneus, Omocestus rufipes* and *Aiolopus strepens*, we had the opportunity to find interesting species as the large katydids *Ruspolia nitidula* and *Platycleis albopunctata*, and the small wood cricket *Nemobius sylvestris*. Rocco showed us how to identify them in several nice books (Fig. 6). As we were in danger of overheating, we decided it was enough and finished this nice workshop with a group photo in the dry grassland (Fig. 7).

Fig. 3. Indoor session of the Orthopteran workshop. Photo: M. Janišová.

Fig. 4. Outdoor session in nearby dry grasslands. Photo: M. Janišová.

Fig. 5. Happiness among orthopteran hunters. Photo: I. Dembicz.

Fig. 6. Rocco and Leonardo took beautiful books to the field. Photo: J. Dengler.

Fig. 7. Workshop participants happy after trapping orthopterans with the nets. Photo: E. Barriola.

After tasting some local cider to rehydrate their bodies, participants could attend the ***Meet the Editors*** workshop back in the TOPIC. The workshop was free for all participants that had already arrived to Tolosa, and was led by Jürgen Dengler, Orsolya Valkó and Stephen Venn. There was an interesting discussion on different aspects of the publication process, starting from the selection of the target journal. There were several questions from the floor, and the three moderators gave diverse opinions, which was quite rewarding for the audience.

After a long and hot day full of indoor and outdoor activities, the registration for the conference opened at 18:30, facilitated by a welcome drink where people had the possibility to meet each other tasting good drink and food in the portico of the venue (Fig. 8), open to the Euskal Herria square, a typical porticoed square which is full of life in summer evenings.

The next day the Tourisme Office of Tolosa provided a guided walk along the old part of the town (Fig. 9). Our guide, Leire explained a lot of details about Tolosa's history and its historical buildings, and the Tourisme Office offered to all participants a big and very useful Tolosa umbrella, maybe as an attempt to invoke the so-long awaited rain to the region.

Fig. 8. Welcome drink. Photo: J. Dengler.

Fig. 9. Touristic tour in the old part of Tolosa. Photo: I. García-Mijangos.

Fig. 10. Alfonso San-Miguel presenting his keynote talk. Photo: L. Lysohor.

Fig. 11. Monika Janišová during her keynote talk. Photo: L. Lysohor.

Keynote speakers

During the conference we enjoyed three splendid keynote talks that transported us through the Palaearctic and taught us different aspects of grassland biodiversity and conservation, as well as their management and relationships with humans. The first conference day, just after the opening ceremony, Alfonso San Miguel (full professor at the Department of Natural Systems and Resources of the Polytechnic University of Madrid), presented an overview of the amazing diversity of natural and semi-natural grasslands in Spain and their associated biodiversity, also addressing their conservation status after changes in management during the last decades (Fig. 10). The participants enjoyed the conference with the nice pictures Alfonso included to illustrate the grassland diversity.

In the afternoon of the same day, Monika Janišová (Institute of Botany of the Slovak Acadmey of Sciences in Banská Bystrica), gave her talk entitled "Species-rich semi-natural grasslands of Europe - historical masterpieces of human-nature interaction" where she provided several nice examples from the Carpathian Mountains to highlight the importance of traditional management practices based on a deep knowledge of local history and traditions and the use of domestic animals for the conservation of species-rich semi-natural grasslands (Fig. 11).

On the third conference day, Arkadiusz Nowak (Institute of Biology of Opole University, Poland), submerged the audience in the amazing landscapes of Tajikistan (Fig. 12). With the help of his impressive photos, we could enjoy the diversity of the flora and vegetation of this Middle Asian country and learn about their conservation status and perspectives.

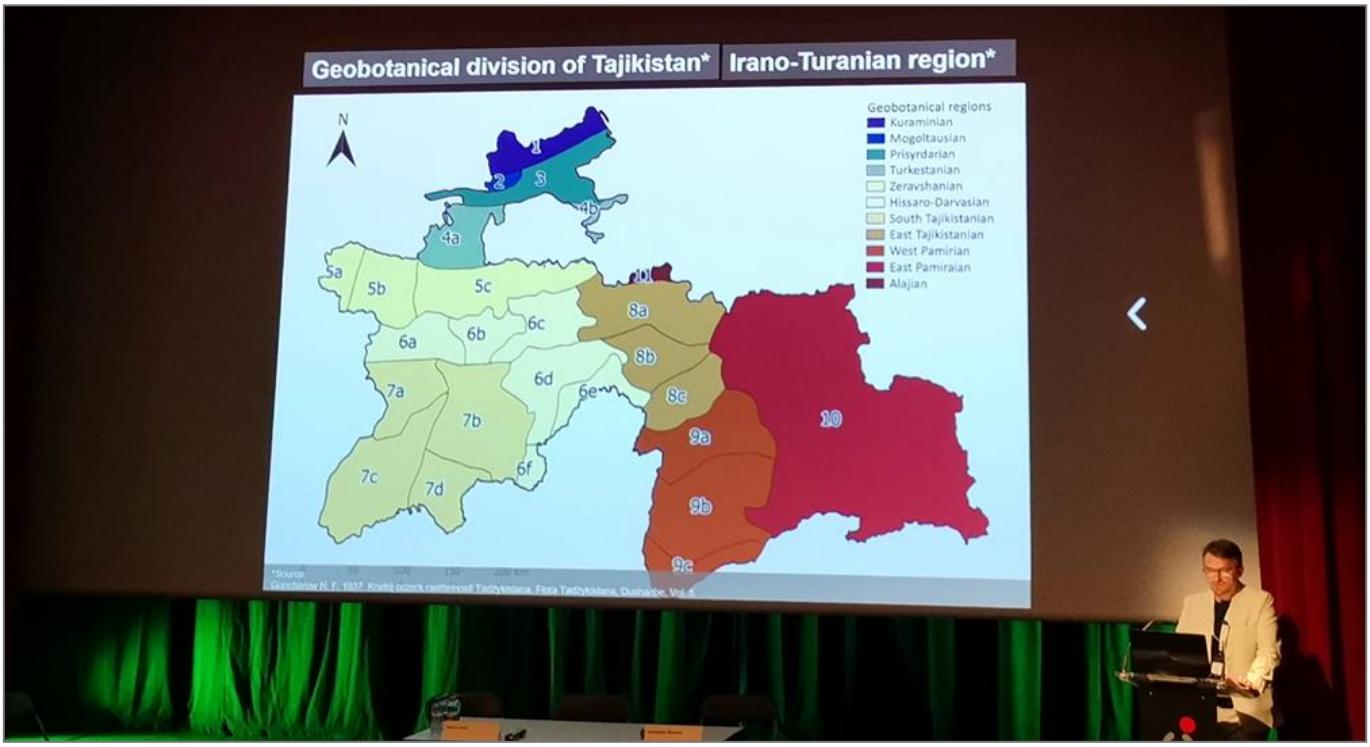

Fig. 12. Arkadiusz Nowak presenting his keynote talk. Photo: L. Lysohor.

Talk and poster sessions

The conference included 29 oral and 25 poster presentations on a wide array of topics. The Scientific Committee had organized five sessions focused on the following topics: Succession and species turnover in abandoned grasslands, Biodiversity of urban grasslands, Above and belowground grassland diversity, Grassland conservation and global change, and Classificacion of Palaearctic grasslands and other open habitats. The session Grassland conservation and global change was the most popular, with 13 talks and 10 posters (Figs. 13-15).

Fig. 13. Diversity of topics and regions during talk sessions. Photos: L. Lysohor.

Fig. 14. Denys Vynokurov presented the results of the 15th Field Workshop in southern Ukraine on behalf of Ivan Moysiyenko, who could not make it to Tolosa due to the war. At least we could see him in the photo! Photo: I. García-Mijangos.

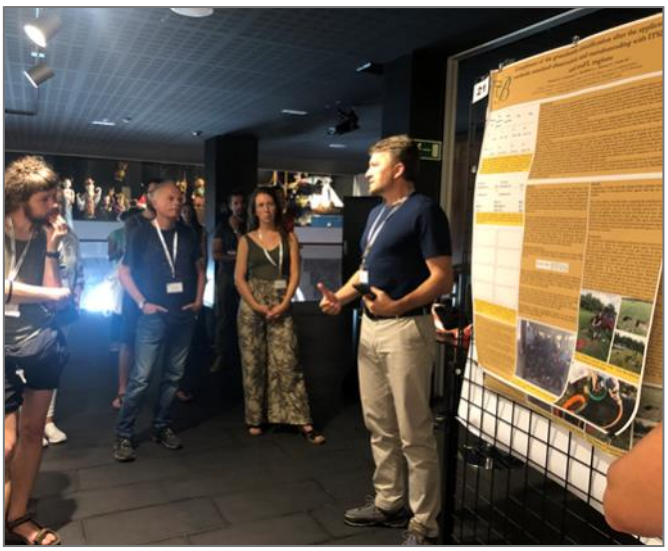

Fig. 15. Poster sessions. Photos: J. Dengler and M. Janišová.

Mid-conference excursion, auction and grassland party

The second conference day (14th September), the participants could choose between two optional excursions. Excursion 1 was a long mountain walk on the Aizkorri Mountain, in the Aizkorri-Aratz Natural Park. This nice excursion was carefully planned by Javier Loidi, but unfortunately he could not eventually guide the participants along the hike, due to a small accident. So, Denys Vynokurov, who had participated in the preparation of the excursion and the excursion guide, led the excursion, together with Itziar García-Mijangos, and assisted by the student collaborators. This was a long hike, starting from the northern slopes of the mountain and finishing on the southern slopes, in Arantzazu. On the way, the participants crossed beech forests, heathlands, dry and mesic grasslands and rocky habitats. The latter are abundant near the summit, with specialist species as *Potentilla alchimilloides, Dethawia splendens* and *Saxifraga trifurcata*. On the north-facing slopes, near the summit with long-lasting snow patches, we could also see grasslands dominated by *Sesleria caerulea*. We enjoyed a picnic on the Aizkorri summit (Fig. 16), with impressive views towards the seacost in the north and the submediterranean valleys and mountains in the south (Fig. 17). This is normally a green landscape, even at the end of the summer. However, this summer has been exceptionally hot and dry, and mountain pastures were dry, showing a quite unusual image. After the picnic, the participants went down the southern slope of the mountain, crossing big areas of dry rocky grasslands with *Festuca gautieri* subsp. *scoparia* (near the summit), *F. rectifolia, Teucrium pyrenaicum* and *Carex ornithopoda* (Fig. 18). On the Urbia mountain valley, mesic acidophilous grasslands of *Nardetea* dominated by *Festuca microphylla* and *Danthonia decumbens* occupy big areas on deep decalcified soils, with some small patches of heathlands, which were traditionally burned but are now ploughed. Big sheep flocks, cattle and horses graze all over Urbia during the summer months (Fig. 19). Participants were lucky enough to find there a mountain hut where they could refresh themselves with some cold drinks. On the way down from Urbia to Arantzazu, the participants walked through more mesic grasslands, but also through dry grasslands with *Helictotrichon cantabricum* on the south-facing steep rocky slopes.

Fig. 16. Group photo in Aizkorri summit. Photo: I. García-Mijangos.

Fig. 17. Aizkorri summit with submediterranean mountains and valleys on the background. Photo: M. Janišová.

Fig. 18. Excursion participants on the way down through rocky grasslands. Photo: M. Janišová.

Fig. 19. Left: sheep on rocky grassland. Right: horses in the *Violion caninae*. Photos: M. Janišová.

Excursion 2, led by Idoia Biurrun, visited several farms and their surrounding meadows and pastures in Aralar and Aizkorri foothills. We started with a visit to Zubeldi-Erdi farm in Abaltzisketa village, on the northern foothills of Txindoki Mountain (Aralar Natural Park). The farm is managed by two young brothers, Adur and Egoitz Gorostidi, who were born on the farm and after some years working in a factory, they decided to continue with the family tradition of rearing Pyrenean cattle for meat. We visited the byres and could admire the beauty of the Pyrenean cattle, and also the surrounding meadows. We spent quite some time listening to the explanations of the farmers about the farm management and life on the farm (Fig. 20). They were asked many questions by the participants, which they kindly answered. There was a funny conversation where people asked in English, Idoia translated to Basque, and viceversa. All this time we were accompanied by the Major of the village Abaltzisketa, Jon Zubizarreta, who also works as technician for the Agriculture section in the Gipuzkoa Provincial Council.

So, after showing our gratitude to Adur and Egoitz we finally abandoned Zubeldi-Erdi and moved to the communal pastures over the village, where Jon gave us a lot of hints about the traditional and current management of the communal land in Aralar mountains and all over Gipuzkoa province, with very precise information on stocking rates and other topics. There were interesting discussions about the encroachment of these pastures after changes in the husbandry, including exchange of empirical and theoretical knowledge about the eradication of gorse and bracken.

It was nearly noon when we said goodbye and a warm thank you to Jon and continued our trip. After a stop in a café in the village Zaldibia for refreshment, we continued our pleasant and comfortable journey in a quite hot day to the nearby town Ataun. Ataun is located in a nice long and narrow valley in the calcareous northern slopes of Aralar, with very steep slopes up both sides of the valley. There are several villages along the valley, and we walked 3 km along meadows, farms and steep slopes with dry grasslands from San Martin to San Gregorio, following the Sara track, dedicated to the Basque ethnographer Jose Miguel Barandiaran, a pioneer on studies of Basque culture and archeology. Along this track, there are interesting hints like the Larruntza watermill and the Barandiaran ethnographic museum. After a nice picnic in the shade near a stream, we met Amaia, who works in the museum, and explained the history of the so-called “hay-cables”, that had been used by the farmers to take the mown hay from the fields in the upper slopes of the valley down to the farms located in the valley bottom (Fig. 21). This system was used in some other valleys surrounding Aralar, but Ataun had the largest number, and some of them have not been removed, though they are not functioning any more.

From Ataun we resumed our bus journey and travelled from Aralar to Aizkorri-Aratz Natural Park, through small villages and traditional landscapes. By 17:00 h we reached Gomiztegi farm, on the southern slopes of the mountain, over the historical town of Oñati, and near the sanctuary of Arantzazu. We had an appointment with the people managing this farm, which not only produces sheep milk and cheese

Fig. 20. Idoia Biurrun translating Adur’s explanations on the use of the meadows near the farm. Photo: A. Kuzemko.

(Idiazabal cheese) from their own flock, it is also a shepherd school supported by the Provincial Council and the Basque Governement. The school, the farm and the cheese factory are managed by a cooperative with Juan Bautista Otaegi and Ekain Murua as coordinators. Ekain explained all the details related to the management of the sheep flock, cheese-making and the management of the shepherd school (Fig. 22). We visited the sheep that were in the barn (Fig. 23), the places where they make and keep the cheese, and also the nearby pastures and meadows.

By the time we finished our visit to the farm, participants of both excursions joined at Gomiztegi for the Grassland Party. First, we enjoyed an exhibition of basque dances and music. We admired the txalaparta players, the bertsolaris (extemporaneous singers), the dancers and singers (Fig. 24), and afterwards we had the opportunity to see an exhibition of a Basque shepherd dog working with a small flock in a nearby meadow. As usual in the Basque Country, the evening finished with an "afari-merienda", a mixture of afternoon snack and dinner where we tasted local food washed down with cider and wine. When we were sufficiently happy, the Auction took place, masterfully led by Martin Magnes (Fig. 25). Chocolates, beers, books, toys and other items generously donated by participants from their countries were auctioned, but then night fell and the auction had to continue during lunchtime the next day (Fig. 26). All in all, the auction was a success and 730 euros were collected which, according to an agreement among the EDGG EC, will be used to fund grants for Ukrainian scientists, of which we had a few representants in the conference (Fig. 27). Thank you all who participated in the auction, contributing items and/or bidding.

Fig. 21. Amaia, from the ethnographic museum, explains the use of the hay-clables in Ataun. Photo: A. Kuzemko.

Fig. 22. Gomiztegi manager Ekain Murua explaining the history of the shepherd school. Photo: A. Kuzemko.

Fig. 23. Latxa sheeps feeding on the barn in Gomiztegi. Photo: J.A. Campos.

Fig. 24. Left: Txalaparta musicians. Right: dancing the aurresku. Photos: J.A. Campos.

Fig. 25. Martin Magnes leading the nocturnal auction in Gomiztegi. Photo: A. Kuzemko.

Fig. 26. The enthusiastic Flemish girls were very active during the conference and brought many items for the auction, among them this nice T-shirt. Photo: M. Janišová.

Fig. 27. Ukrainian scientists in the Eurasian Grassland Conference could not forget about their country in war. Photo: E. De Vrieze.

General Assembly and Closing Ceremony

On the last conference day, after the last talk and poster sessions the General Assembly was held. Prior to that there was a time slot where participants were allowed to make announcements on their projects (Fig. 28).

During the Assembly, the chairs of the Executive Committee informed the participants about past, current and future activities. One of the most important news was the announcement about the 18th Eurasian Grassland Conference, which is going to be held in September 2023 in Körös-Maros National Park Directorate in Szarvas (Hungary), organized by Balász Deák and Orsolya Valkó, with a promising post-conference excursion to Kiskunság National Park organized by András Kelemen. Thank you very much to them for their willingness; we are sure it will be a fantastic conference.

During the Closing Ceremony, the Young Investigator Prizes for researchers under 35 yers were announced, that went for:

Talks (Fig. 29): 1. Jorunn Dieleman, AgroFoodNature, University College Ghent: *FlowerPower the garden: experimenting, learning and raising awareness about species-rich grasslands in a citizen-science Project*.

2. Rocco Labadessa, National Research Council of Italy: *Small-scale effects of wild boar rooting activities in Mediterranean dry grasslands*.

3. Iris Moeneclaey, Department of Environment, Faculty of Bioscience Engineering, Ghent University: *Plant & vegetation responses to soil phosphorus along a grassland restoration trajectory*.

Posters (Fig. 30): 1. Ellen De Vrieze, Department of Environment, Faculty of Bioscience Engineering, Ghent University: *Creating urban wild flower meadows: experiment on the effect of abiotic conditions.*

2. Ainhoa Urkijo, Department of Conservation of Natural Resources, Basque Institute for Agricultural Research and Development NEIKER: *Livestock behavior analysis in threatened flora zones in Aldamin-La Cruz pastureland (Special Conservation Zone of Gorbeia)*.

3. Sara Sánchez-Carmona, Department of Plant Biology and Ecology, Faculty of Science and Technology, University of the Basque Country UPV/EHU: *Effects of woody plant encroachment on diversity in mesoxerophylous grasslands*.

The ceremony finished with the organizing team on the stage to receive the applause of the conference participants (Fig. 31). Over the stage they went, together with Idoia Biurrun, chair of the organizing committee, Javier Loidi, Juan Antonio Campos, Itziar García-Mijangos and Denys Vynokurov, and the PhD students Sara Sánchez and Irati Sanz and the degree student Eneko Barriola. I would like to thank especially the latter, who were always available at the desk and solved many problems that arose during the conference.

Other members of the organizing committee could not manage to be in Tolosa on that day: Isabel Salcedo, mycologist from the University of the Basque Country, and Asun Berastegi, from Gestión Ambiental de Navarra (depending on the Government of Navarre), co-organizer of the post-conference excursion.

Fig. 28. Stephanie Schelfhout finishes her announcement just before the General Assembly. Photo: M. Janišová.

Fig. 29. Iris Moeneclaey, Rocco Labadessa and Jorunn Dieleman, winners of the YIP, talks, with Stephen Venn. Photo: M. Janišová.

Fig. 30. Sara Sánchez-Carmona and Ellen De Vrieze, winners of the YIP, posters. Photo: I. García-Mijangos.

Fig. 31. Organizing team on the stage. Photo: M. Janišová.

Post-conference excursion

Asun Berastegi and Idoia Biurrun were the guides for the post-conference excursion. Asun was the main guide, as she has a thorough knowledge on the diversity, ecology and management of the grasslands in Navarre. Asun provided detailed explanations on all aspects of grassland diversity and management during the stops along the excursion. In the bus, Idoia provided a commentary of the vegetation and biogeography of the diverse regions we traversed during the excursion.

We spent the morning of the first day in the coast of Gipuzkoa, where we hiked along the coastal Way of St James on the Ulia mountain, from San Sebastian to Pasaia. The northern slopes of this small sandstone mountain descend to the sea in a nice and rough coastal landscape, where wet heathland is the dominant habitat, with some small remnants of the natural vegetation, with *Quercus pyrenaica* and plantations of *Pinus pinaster* (Fig. 32). Along our path, we could see the typical species of this lowland wet heathland, with several heather and gorse species, the most typical one being *Erica ciliaris*. We passed by the nice lighthouse Faro de la Plata, and went down a steep track towards the estuary of the Oiartzun River in Pasaia. En route, we passed by the small lighthouse Senokozuloa and the Albaola Ship Factory, where a replica of a XVI century whaling ship that sank in Newfounland in 1565 is under construction by carpenters and other craftsmen. We crossed by boat from Pasai San Pedro, on the left bank of the estuary, to Pasai Donibane, on the righ bank (Fig. 33), and after a coffee stop in this nice fishing village, we continued our journey by bus. We arrived at the Spanish-French border, marked by the Bidasoa River, and we continued up the river. A few kilometers from the coast, we entered Navarre, where we would stay during the remainder excursion. We travelled along a narrow valley formed by Bidasoa in Bortziriak, and climbed the Belate mountain pass, in the Atlantic-Mediterranean watershed. We made our second stop in Belate, where we had a picnic in the *Nardetea* grassland (Fig. 34), which is in contact with mountain wet heathlands with *Erica tetralix*. The natural vegetation in the area is mostly acidophilous beech forest. Mires are common in these mountains, but they are mostly small spring fens, like the one we visited next to our picnic place. However, we also had the opportunity to visit one of the oldest and largest peatlands in the Basque mountains. This Belate peatland occupies a large plateau among the hills, and after a long history of drainage, eutrophication and overgrazing is now under restoration.

Fig. 32. Ulia mountain in the coast of Gipuzkoa. Photo: M. Janišová.

Fig. 33. Left: on the boat from Pasai San Pedro to Pasai Donibane (Photo: M. Janišová). Right: Pasai Donibane (Photo: J. Dengler).

Asun provided a lot of detailed information, and participants where happy to find endemic cricket and carabid species (Fig. 35).

In the afternoon, we travelled southwards and crossed several submediterranean valleys, passing very near the city of Pamplona, until we arrived at the Urbasa-Andia mountain range. There, we climbed to the Lizarraga mountain pass in the Andia range, where we made our last stop of the day. We walked along the rocky grasslands of the association *Helianthemo incani-Koelerietum vallesianae*, that turned out to be completely dry, which produced a very unusual landscape in this area where natural vegetation is basophilous beech forest (Fig. 36). We climbed to the ridges of Andia range and could see the *Sesleria caerulea* communities on the north-facing slopes, as well as the impressive silhouette of the Beriain mountain and, further to the north, the Aralar mountain range. Darkness was already falling as we returned to the bus, and on our way southwards, we crossed the whole Andia range and went down to the Ebro valley. It was already night when we arrived at our accomodation in Tafalla. All in all, the three stops of the day and all the journey we made during daylight were part of the Atlantic region.

Fig. 34. Studying the acidophilous grasslands of *Jasiono-Danthonietum decumbentis* (*Nardetea*). Photo: M. Janišová.

Fig. 35. Trying to photograph the highly motile carabid beetle *Chrysocarabus basilicus basilicus*. In the background, Asun Berastegi explains the management of Belate mire. Photo: N. Roth.

Fig. 36. Participants in Lizarraga mountain pass, Andia Range, in a very unusual dry shape. Photo: M. Janišová.

We spent the second excursion day in the Mediterranean region. From Tafalla we travelled southwards and had a panorama stop in the town of Mélida. We could see that people were working on the dismlanting of the wooden protections used during the "encierros" along the streets. In fact, one such "encierro" had taken place a few days before. In the "encierro", brave cattle grazing in the surrounding foodplain forests and wet grasslands, run along the streets behind the people dressed white with red belt and shawls. It is funny that the cattle that had run two days before belonged to the ranching "transhumancia", which refers to migrating or trashumant cattle. The town is located on a hill over the Aragón River, a tributary of the Ebro River, flowing from the western Pyrenees. From a lookout in the town, we could enjoy the panorama over the river, the floodplain forests, the wet meadows and dry grasslands in the surroundings, and all the irrigated crops covering the vast flooplain. From Mélida, we travelled to the nearby town Caparroso, where we stopped near a gypsum hill in the area of Masadas to visit the gypsophilous scrub, dominated by *Rosmarinus officinalis*, with such gypsum specialists as *Helianthemum squamatum* and *Herniaria fruticosa* (Fig. 37). Natural vegetation in this Mediterranean xeric area is a macchia, dominated by *Quercus coccifera* and scattered pines (*Pinus halepensis*). We spent some time walking up the hill, and we were happy that the weather was not too hot, probably due to the strong wind coming from the north. From Masadas, we travelled further to the south until we reached the floodplain of the Ebro valley, near the ancient city of Tudela, which has been inhabited since the Paleolithic, but which underwent great development during medieval times, especially during IX and X centuries, under the governement of the muslim Banu Quasi family.

Fig. 37. Participants in the windy hill near Caparroso studying the gypsophilous scrub. Photo: M. Janišová.

The Ebro valley has been intesivelly used for agriculture since Roman times, but we could see that nowadays rice crops are dominating the flooplains, which is a quite recent feature in the landscape. We moved from the Ebro floodplain to the the impressive Bardenas Reales, a huge non-urbanized extension of eroded hills, plateaus, saltpans and canyons (Fig. 38). We had our picnic on the foothills of one of these hills, surrounded by Mediterranean grasslands and scrub. One of the most typical features of Bardenas is the huge extension occupied by *Lygeum spartum*-dominated grasslands on the clayey soils, especially in the surroundings of the saltpans, which are common in the depression areas. A short walk in this Mediterranean xeric area showed us another typical feature, the abundance of nitrophilous scrub, with *Artemisia herba-alba* and *Salsola vermiculata* (Fig. 39). We took the opportunity for a group photo with the impressive Castil de Tierra in the background (Fig. 40). In the afternoon, we travelled northwards towards the Pyrenees, and we made our last stop near the Foz de Arbaiun, an impressive canyon eroded by the Salazar River in the Prepyrenean Leire mountain range. The climate is rainier here than in the Ebro valley, with submediterranean features. This is still the Mediterranean Region, but natural vegetation is formed in the deep soils by the deciduous marcescent tree *Quercus faginea*, and it is only in rocky places that the evergreen sclerophyllous *Q. rotundifolia* prevails. After enjoying the view of the canyon in the panorama, we walked to the nearby hills where we studied the dry grasslands of the association *Thymelaeo ruizii-Aphyllanthetum monspeliensis*, typical of these transitional areas, encroached by trees and shrubs like *Buxus sempervirens* (Fig. 41). These dry grasslands are species-rich, and we were able to identify many grasses and dwarf-shrubs typical of temperate and Mediterranean dry grasslands and scrub. After this last stop in the Mediterranean Region, we continued our trip northwards, arriving in the evening at our accomodation in the Pyrenean village Isaba. We were lucky because there was a festival in the village and near the church there were musicians and happy people dancing, some of them dressed up. Some of the participants of the excursion very enthusiastically joined the dancers.

Fig. 38. Panoramic view of the xerophytic scrub in Bardenas Reales. Photo: M. Janišová

Fig. 39. Something interesting is over there in Bardenas. Photo: M. Janišová.

Fig. 40. Participants in Castil de Tierra, Bardenas. Photo: M. Janišová.

Fig. 41. *Thyreonotus corsicus* in *Buxus sempervirens* in the submediterranean grassland near Foz de Arbaiun. Photo: M. Janišová.

Our third and last excursion day included a mountain hike in the western Pyrenean Larra-Belagua massif. We walked up a valley towards the Arlas mountain, and spent the morning in the subalpine belt, where *Pinus uncinata* woodlands have been cleared for the summer grazing of sheep flocks (Fig. 42) and Pyrenean cattle (Fig. 43). *Nardus stricta*-dominated grasslands are common in the valley bottom and deep soils, while in the rocky slopes, alpine grasslands of *Primulion intricatae* and dry grasslands of *Festucion scopariae* prevail, depending on the orientation: grasslands with *Horminum pyrenaicum* and *Sesleria caerulea* on the north-facing long-innivated slopes (Fig. 44), and grasslands with *Festuca gautieri* subsp. *scoparia* on the south-facing slopes. The strongest participants climbed to the top of the Arlas mountain (2044 m a.s.l.), but most people took it easy and stayed in the pass just beneath the summit. We had our picnic there, near the Spanish-French border, and although we were happy there enjoying the panorama, we started our way down towards our bus, as we had a long journey back to Bilbao. We crossed again the Prepyrenean mountains through the Foz de Burgi, where we could admire the impressive cliffs, colonized by rocky habitats and the shrubs *Juniperus phoenicea* and *Buxus sempervirens*. After a stop for refreshment in the village Yesa, we continued our trip towards Bilbao, where we finished this short but intense excursion through the Navarran diverse landscape and vegetation.

Fig. 42. Left: latxa sheep grazing in Larra, western Pyrenees. Right: Ovine beauty in the foreground Photos : M. Janišová.

Fig. 43. Beautiful Pyrenean cattle enjoying the views. Photo: M. Janišová.

Acknowledgments

We thank our keynote speakers and workshop leaders, the technicians in Topic, as well as the farmers and technicians that kindly explained so many interesting aspects of grassland management to us during the excursions. We are also grateful to the people from Larrea, especially Izaskun, who fed us during the conference, and to the bus drivers, that transported us safely along the winding Gipuzkoan roads. Special thanks to Edurne, who took us through all Navarre and was full of patient.

Our warmest thanks go to Patxi Amantegi, the city councillor of Tolosa that made it possible to hold the conference in Tolosa facilitating the venue, the habilitation of the lunch place, the touristic visit and many other things that are not possible to list here. He was always ready to help us, and many of the participants are probably familiar to see him in the conference venue, the lunch place, the touristic tour and even in the mid-conference excursion. We are deeply grateful to him. Eskerrik asko, Patxi!

Many thanks also to José Ignacio Asensio, Deputy of Environment and Hydraulic Works in the Gipuzkoa Provincial Council, who also supported our conference, although unfortunately he could not attend the Opening Ceremony, and to Olatz Peón, Mayoress of Tolosa.

Last but not least, we are very grateful to the financial support provided by the IAVS, the City Council of Tolosa, the Gipuzkoa Provincial Council, the Basque Government, the Government of Navarre, the University of the Basque Country and HAZI.

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Fig. 44. Lunch time near Arlas summit. On the left, Spain, on the right, France. Photo: M. Janišová.

EGC 2022 grantees

Mykyta Peregrym

The 17th EGC conference in Tolosa was the third meeting organized by EDGG which I took part in after events in Uman' (2013) and Graz (2019). It is pleasant to say that all my expectations were met, namely I presented and discussed the results of my investigations, I saw my old friends and colleagues as well as I made acquaintance with new people who are attracted by grasslands, their study and conservation. After fruitful discussions in the conference hall and private conversations, I got many new ideas for my future investigations and offers for collaboration. Finally, it is not easy to describe my impressions and emotions during and after our field trip to the Aizkorri Massif. Even two months later, I close my eyes and time-to-time I return to its breathtaking mountain landscapes with rich plant diversity. It is almost the same when I remember cozy streets and squares of beautiful Tolosa.

So, I would like to express deep gratitude and respect to the conference organizers for their fantastic job and warm hospitality, and also, of course, to EDGG as well as to IAVS for their strong support of Ukraine and Ukrainian researchers, because my participation in the conference would be impossible without your help and understanding. Thank you very much!

Iwona Dembicz

I am very grateful to IAVS for supporting my participation in the EGC in Tolosa. During the conference I could meet many of my colleagues and friends, who I had not seen for a long time due to the pandemic. The conference was also a great occasion to meet new colleagues with similar scientific interests, and see a lot of wonderful grasslands, plants and insects (especially from my favorite group Orthoptera, thanks to the workshop on the first day and strong group of Orthoptera experts, who also attended the conference). I was also glad to present the results of a research that I conducted with my Ukrainian and Polish colleagues in the steppes of Southern Ukraine. I found Tolosa a beautiful town, full of good, positive energy. Also all other places that we visited during the mid-conference and post-conference excursions gave me a lot of great impressions and memories.

Dariia Shyriaieva

The EGC 2022 in Tolosa was the first EDGG conference for me, therefore many people and topics were new to me there. I was glad to meet in person many people who I knew from the publications and online events during the pandemic times. The conference days passed fast, but very efficiently, with new knowledge, meeting people, and making plans for the future. I presented my own research dedicated to grassland diversity in Southern Ukraine (Southern Buh River Valley). After the presentation, I got valuable comments and advice about my data and methodology. Also, I enjoyed a lot the diverse nature and unique culture of the Basque country, which we experienced during the conference excursions. I am very grateful to the IAVS and EDGG for providing a travel grant for me, and also for the incredible support to Ukraine and Ukrainian members.

Szymon Czyzewski

During the Eurasian Grassland Conference 2022 I learned about fascinating research on grassland conservation, management, and functioning. I had the opportunity to see the incredible gradient of plant communities of the Basque Country, stretching from wet heaths to Mediterranean semi-deserts. And first of all I met other researchers sharing grassland love.

The conference started with a workshop on orthoptera identification, which was great. With colleagues from Poland we are working on an orthoptera distribution atlas for our country, so this insect group has a special place in my heart. During the workshop I met a fantastic group of orthopterologists from Italy. After the workshop we discussed differences in habitat preferences of orthoptera species present in both Poland and Italy, as well as differences in orthoptera assemblages themselves. The latter especially turned out to differ in surprisingly many ways. We ended up discussing possible research plans for the future.

During the conference itself I learned about so many fascinating research projects, it would be difficult to name them all. What may have gotten stuck in my mind the most are the study on traditional management of Carpathian grasslands, cranes as ecosystem engineers, regeneration of the primeval steppes in Ukraine, surprising seed dispersers, grassland stability, and new possibilities of urban grassland. Discussing all the science during coffee breaks was a great pleasure.

The conference was followed by the post conference excursion. I have never before seen such a strong gradient of ecosystems. Starting at the Atlantic coast we could see wet heaths with giant royal ferns (*Osmunda regalis*) and a diverse *Ericaceae* flora. My description would get too long if I started describing all the fascinating plant communities with many species I have never seen before. Thus, I will confine my description to the second stop during the excursion, because it was particularly interesting in terms of orthopterans. Here on a gentle slope in the immediate proximity of a peat bog we found a *Zeuneriana abbreviata* female hiding in *Ulex gallii* vegetation. The range of this species is restricted to Western Pyrenees and their immediate neighborhood. After exploring the slope and learning about peat bog restoration we went on to a grazed flood plain in the valley bottom. It was a beautiful area with scattered hawthorns creating a savannah like appearance. While looking for plants and insects we heard a strange metallic sound, it could only have been a member of the Bradyporinae! The pronotum of these bush crickets resembles the shield of a *Triceratops*. After a few minutes of searching we found the owner of this strange call, it was a *Callicrania ramburii* male, a uniquely beautiful creature! A female was sitting on a bush just next to the one occupied by the male. *Callicrania ramburii* is a species also endemic to the Basque Country. On the way back to the bus I was struck by *Succisa pratensis* growing here under strong grazing pressure. The plants were dwarfed but were still flowering in great numbers. I know this species from Poland to be a tall plant. It struck me how it can still flower in such a shape.

Overall what I most vividly remember from the post-conference excursion is the ubiquitous grazing. It is an absolutely positive fact, taking into account how important extensive grazing is for grasslands and their inhabitants. For example both the endemic species we found inhabit grazed grasslands. During the conference I learned that extensive grazing is declining in Spain. However, I was impressed by how widespread it still is from the wet Atlantic coast to the semi-deserts of the Ebro plain. Sadly in my home country Poland traditional extensive grazing is on the verge of extinction. I hope with help of the grassland research and through changes in conservation policies, such extensive grazing can be once brought back to Poland too.

Female Basque Wide-winged Bush-cricket (*Zeuneriana abbreviata*) in Belate. Photo: S. Czyzewski.

Rambur's Saddle Bush-cricket (*Callicrania ramburii)* over *Juncus effusus*, in Belate. Photo: S. Czyzewski.

Anna Kuzemko

It's so great that thanks to the titanic efforts of Idoia and her team, the EGC still took place after a two-year break, and that in this difficult time for Ukraine, thanks to the financial support of the IAVS, I was able to take part in it. Everything was perfect - the conference program, the excursions, the historical Tolosa, the local culture and cuisine, and especially the communication with old and new friends. Due to logistical problems, my trip to Tolosa took two days, and back - three days, in total five days with a lot of adventures, pleasant and not so pleasant, but it was worth it.

Iuliia Vasheniak

I was really happy to be a participant in the EDGG conference where I presented my poster presentation about *Stipo pulcherrimae-Festucetalia pallentis* communities in Ukraine. On the one hand, we spent a lot of time in the meeting hall discussing many interesting presentations, on the other hand, we walked across the Middle Age streets of Tolosa and were inspired by the spirit of Spain. I am grateful for the great opportunity to attend this meeting where I have got many interesting impressions.

Liudmyla Lysohor

The conference was organized at a high level. The main thing is the experience that the participants shared during their presentations. All presentations disclosed modern directions of research. We created a catalogue of presentations on Google Drive with our colleagues.

During the excursions we got acquainted with the traditions of Tolosa, its natural features.

Thanks to Idoia Biurrun, Denys Vynokurov, Jürgen Dengler, Anna Kuzemko, Iwona Dembicz and members of the office IAVS.

Oksana Tyshchenko

I would like to express my great gratitude to IAVS and EDGG for supporting my participation in 17th Eurasian Grassland Conference. This year I joined EGC for the first time and it was the chance for me to get involved in oral session, to open the new scientific opportunities and the occasion to feel being a part of a community of like-minded people.

It was extremely pleasant to spend a whole week without constant sounds of air raid sirens, to use the comfort of civil aviation which is almost forgotten by Ukrainians, to immerse myself in the space of peaceful life and to meet new colleagues.

The keynote lectures were particularly informative. Very fascinating were the reports during the oral and poster sessions, as well as the discussions and planning for the future during breaks and informal meetings. The Meet the Editors workshop was useful for me. During the conference, I learned a lot about the new methods, approaches and trends of studying Eurasian grasslands. But especially wonderful was the mid-conference excursion. A few tens of kilometers through the Cantabrian mountains and valleys were somewhat unexpected, but unforgettable, because of the opportunity to see the plant species-rich grasslands and even find together with colleagues new localities of some protected species. The views during the Aizkorri-Aratz Natural Park excursion were incredible. Even nature greeted us very kindly, giving mostly sunny fine day. The guides and whole excursion support team were also incredible and experienced. We got acquainted with the examples of grassland ecosystems management in the Basque Country - combination of nature protection functions and traditional use. The participants could see the farms and try their nice products. And not only that, because the program of the conference had an entertainment part as well - the Grassland Party included a local folk group traditional dances and musical rhythms of the Basque Country, shepherd school show, friendly dinner and a cheerful auction.

I visited Spain for the first time, so got an opportunity to see the vegetation of the Cantabrian mountains, visit several cities and towns (Bilbao, San Sebastian, Tolosa, Irun), feel the local flavor, get acquainted with the traditions of the Basque Country and try out the local cuisine. But the most important was the feel of understanding, compassion, care, warmth and constant friendly support for Ukrainians and Ukraine from our colleagues came from different parts of the world.

In general, the 17th EGC was very positive for me - pleasant, unforgettable, valuable, informative and with great friendly atmosphere.

I am sincerely grateful to the organizers for the rewarding experience and hope for further cooperation. Peace and justice always triumph over war, violence and evil. Thank you for standing with Ukraine!!!

Stephen Venn

It was really great to attend conferences and excursions again, after such a long break, and to have contact with colleagues, old and new, from the EDGG. Once again, the EGC provided me with the opportunity to learn about a region that was previously unknown to me. Now they became very familiar, through conference presentations, site visits and guided tours during the mid-term excursion and eventually culminating in the post-conference excursion through some spectacular landscapes and fascinating habitats. Now I can hardly wait for the next EGC in Hungary next year.

EDGG Publication

Extended deadline for contributions to the Special Collection "Grasslands of Asia" in *Vegetation Classification and Survey*

Asia is the largest continent on Earth and hosts the most extensive grasslands. The most emblematic are the huge and diverse steppes in the interior of the continent, but there are also arctic grass tundras, alpine grasslands, alpine steppes, desert steppes, subtropical savannas and a multitude of semi-natural grasslands created by millennia of human land use. Classification is an essential tool to make the huge diversity of different grassland types more accessible and comparable, both for basic research and applied sciences such as management and conservation. However, only a few countries in Asia have a strong tradition in grassland classification. Moreover, the classification approaches vary markedly between and even within countries. Consequently, it is hard at present to gain a consistent scientific overview of the grassland types of Asia.

To address this problem, at the first Asian Grassland Conference 19-21 April 2022 (AGC), the Eurasian Dry Grassland Group, the new IAVS Regional Section for Asia and the gold open access journal *Vegetation Classification and Survey* (VCS) launched a Special Collection of articles dealing with a typological view of "Grasslands of Asia". In line with the scope of the journal, papers should develop, test or apply vegetation typologies or present vegetation-plot databases or tools in ecoinformatics. Typological approaches at any spatial scale from synusiae via phytocoenoses and landscapes to biomes are welcome. We are open to any approach to classify vegetation, including but not limited to the Braun-Blanquet and the EcoVeg methods. We especially encourage studies based on extensive original data, but also accept regional and even local studies if they come from under-represented regions or are methodologically innovative. Contributions presented at the AGC are particularly welcome, but relevant papers not related to the AGC can be submitted.

Alpine pasture with *Ferula kuhistanica* and *Eremurus kaufmanii* near Peak Agasiz, ca. 3600 m, Tajikistan. Photo: A. Nowak.

While some papers have already been invited and submitted, we would like to extend the deadlines to allow for additional contributions.

Procedure and deadlines:

- **Up to 31 January 2023**: Submission of (preliminary) abstracts (maximum 300 words), structured into "Question(s)", "Study area", "Methods", "Results" and "Conclusions" to dr.juergen.dengler@gmail.com
- **By 15 February 2023**: submitted abstracts will have been evaluated and manuscripts either invited or declined
- **Up to 30 April 2023**: submission of papers with priority for invited papers, but non-invited manuscripts might be considered on a case-by-case basis

Manuscripts will undergo peer-review and be published as they become ready once accepted.

We anticipate that we will conclude the whole Special Collection in mid-2023.

Editors of the Special Collection:

- Idoia Biurrun (EDGG, Spain)
- Jürgen Dengler (EDGG, Switzerland)
- Alireza Naqinezhad (IAVS Regional Section for Asia, Iran)
- Arkadiusz Nowak (IAVS Regional Section for Asia, Poland)

Vegetation Classification and Survey is dedicated to publishing attractive classification papers and therefore allows for longer manuscripts than do most journals. Colour illustrations, in particular photo plates of the vegetation types studied, are strongly encouraged and free of charge. Please note that *Vegetation Classification and Survey* is a gold open access journal, which normally requests article processing charges (APCs) from authors. Thanks to the generous support of the IAVS, articles submitted by mid-2023 are exempt from APCs, provided that the first author is an IAVS member, while membership is free of charge for scientists from many Asian countries.

Jürgen Dengler (Chair of the Guest Editors),
Wädenswil, Switzerland
dr.juergen.dengler@gmail.com

***Onobrychis cornuta* alpine grasslands in Damavand, Alborz, Iran. Photo: A. Naqinezhad.**

EDGG Publication

Call for the Special Feature "Asian grasslands" in *Biodiversity and Conservation*

EDGG is organizing a special feature (SF) in the journal *Biodiversity and Conservation* (impact factor: 4.416) focusing on the biodiversity and conservation of the Asian grasslands. We welcome Original Research articles and Review Articles on topics such as biodiversity patterns, conservation prioritization, wildlife management, conservation planning, grassland biodiversity and ecosystem functioning under global change, livelihoods and sustainability of pastoral communities in Asia. Studies focusing solely on vegetation classification, taxonomy or studies with very narrow geographic scope are not suitable for this special issue unless the findings have broad importance. Students and Early Career Researchers are also encouraged to submit.

If you are interested in submitting a manuscript, please check the relevant info in the SF page of the journal, follow the submissions guidelines and use the online submission system of the journal for your submission. The deadline for the new submissions is March 31, 2023.

The organization of the SF was coupled with the organization of the Asian Grassland Conference. Thus, several studies presented in the conference are planned to be submitted. Those pre-evaluated studies need to be submitted sooner: the deadline is 30th January.

Please contact the guest editors for your pre-submission enquiries:

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Convolvulus assyricus, **Turkey. Photo: D. Ambarlı.**

EDGG Publication

Call for the 17th EDGG-edited Grassland Special Feature in *Tuexenia*

Due to the low number of contributions in 2022, the 17th Grassland Special Feature in *Tuexenia*, which is organized by the Eurasian Dry Grassland Group (EDGG), has been postponed to 2023.

Tuexenia is a diamond open access, peer-reviewed journal publishing original articles, reviews, and reports. The well-cited annual EDGG Special Feature is open to grassland-related topics with a focus on geobotany, vegetation ecology and related sciences, such as population biology, biodiversity research, biocenology, restoration ecology, and their applications, particularly in grassland conservation. We also welcome studies involving interactions of plants with other taxa such as animals and fungi.

The geographic scope of the Special Feature comprises the whole nemoral zonobiome (also called temperate mid-latitudes) in Europe, including its transitions to neighbouring zonobiomes (submediterranean, hemiboreal and forest-steppe zono-ecotones). Thus, the geographic scope ranges from Galicia in the west to the Urals in the east. However, contributions from the boreal, arctic, mediterranean or continental (steppic) zonobiomes can be considered if a connection to Central Europe is made and after prior consultation with the Editors.

The syntaxonomic scope comprises all types of natural and semi-natural grasslands (mesic, wet, dry, saline, sandy, rocky, alpine). However, we may also consider vegetation types dominated by bryophytes, lichens, forbs and dwarf shrubs, e.g. tall forb communities and heathlands.

If you plan to contribute, you are invited to send the manuscript to the Chair of Guest Editors, Steffen Boch by 31 March 2023.

Manuscripts submitted early have a higher chance of inclusion in the next Special Feature 2023. Later submission is also possible but requires prior consultation with Steffen Boch. Submissions that are accepted after the production deadline will be made available as an online first version via the journal homepage, ensuring user access to the article before print publication. These articles are searchable and citable by their DOI (Digital Object Identifier).

Benefits of submitting to our Special Feature in *Tuexenia* include:

- Open access and peer-reviewed journal indexed in the Web of Science (Impact Factor 2021: 1.002).
- Significantly higher citation rates than regular Tuexenia articles.
- No colour and page charges.
- Competent Guest Editor Team: Steffen Boch (chair, Switzerland), Thomas Becker (Germany), Balázs Deák (Hungary), Jürgen Dengler (Switzerland), Kristin Ludewig (Germany), Sonja Škornik (Slovenia).

Steffen Boch, Birmensdorf, Switzerland,
and members of the Guest Editor Team
steffen.boch@wsl.ch

***Stipa capillata* grassland in Buzkyi Gard National Park, Ukraine. Photo: D. Shyriaieva.**

Announcement

Nordic-Baltic Grassland Vegetation Database (NBGVD) News and call for contributions

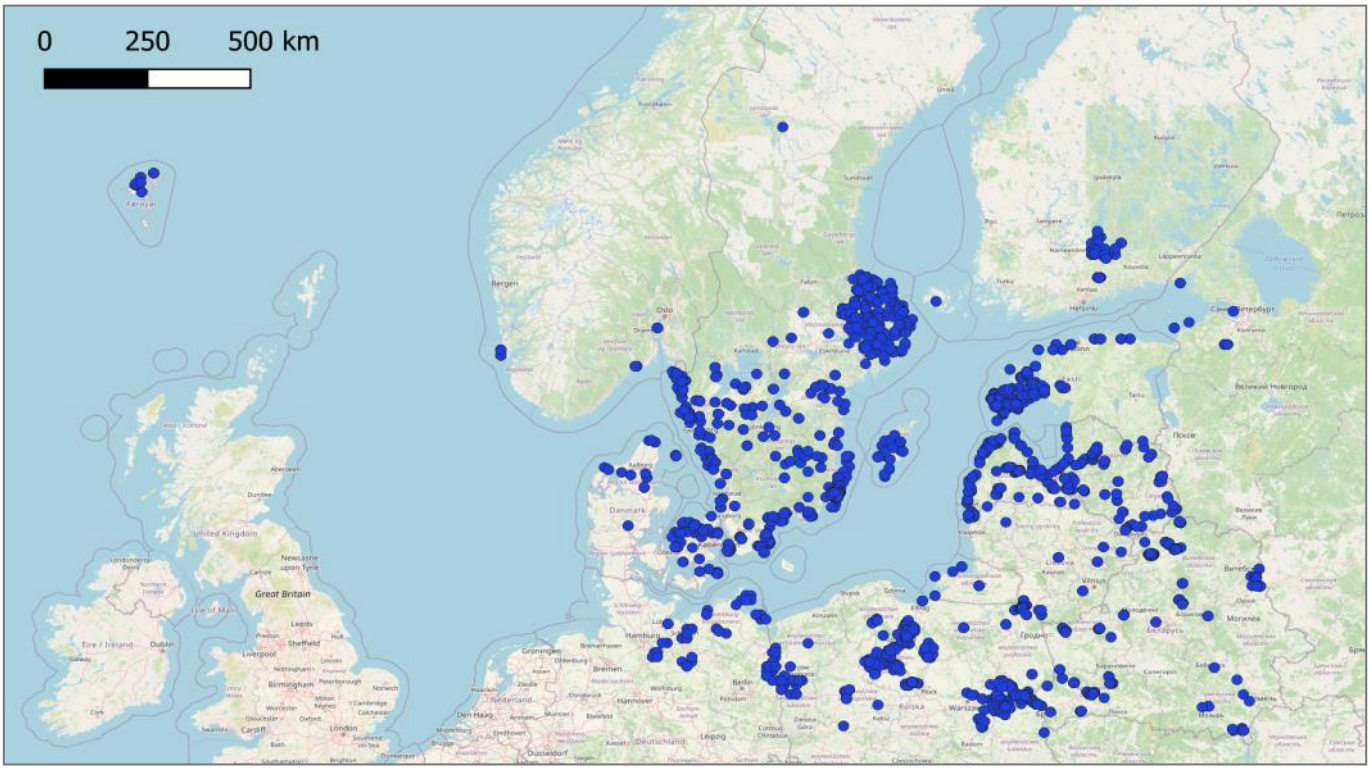
NBGVD is the EDGG-associated vegetation-plot database that collects vegetation-plot data of grasslands and other open habitats (except segetal and aquatic) from the Nordic-Baltic region, i.e. Northern Poland, Belarus, Lithuania, Latvia, Estonia, Belarus, NW Russia, Finland, Sweden, Norway, Denmark, Faroe Islands and Iceland. We are interested in any vegetation plots of plot sizes from 0.25-100 m^2, with complete species lists including cover or abundance data for at least the vascular plants. While NBGVD started with a focus on dry grasslands, we are now collecting all types of grasslands (wet, mesic, dry, sandy, rocky, saline, alpine), heathlands, dune communities, tall forb communities, and any other vegetation type that is not a forest, tall shrubland, segetal or aquatic community. You find updated information on NBGVD on our homepage at the EDGG website.

While the NBGVD has stagnated for several years, in the course of 2022 we could achieve three major improvements:

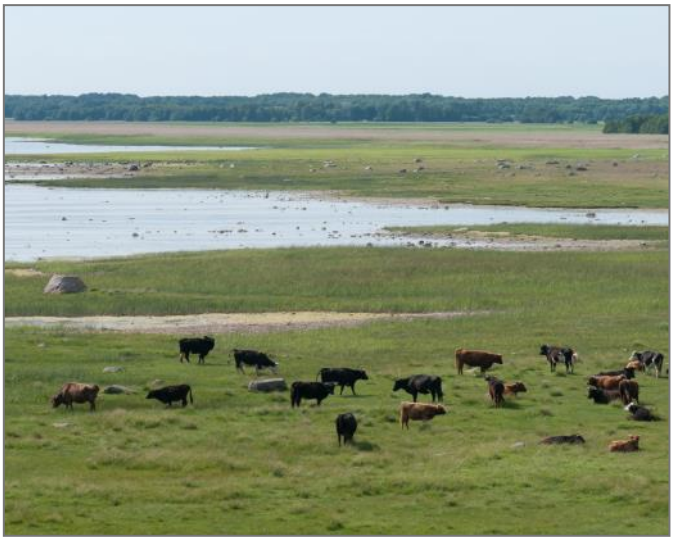
- We removed ca. 3,400 plots from Germany, which are now provided by our partner database GrassVeg.DE.
- We added ca. 1,200 plots, mainly from Northern Poland and Sweden.
- We improved the coordinate precision of many plots and removed various other inconsistencies.

On 4 November, NBGVD contained 9,839 plots, which were distributed as follows:

- **Countries**: Sweden (27.9%), Belarus (16.5%), Poland (14.4%), Estonia (13.3%), Latvia (9.5%), Faroe Islands (7.3%), Norway (3.4%), Denmark (2.2%), Finland (1.5%), Russia (1.5%), Germany (1.3%), Lithuania (1.2%).
- **Phytosociological classes**: *Festuco-Brometea* (16.0%), *Koelerio-Corynephoretea* (10.6%), *Sedo-Scleranthetea* (5.5%), *Scheuchzerio-Caricetea* (3.2%), *Trifolio-Geranietea* (3.1%), *Molinio-Arrhenatheretea* (2.4%), *Ammophiletea* (0.7%) other herbaceous classes (2.6%), unassigned (56.0%).
- **Plot sizes**: 1 m^2 (34.6%), 4 m^2 (19.3%), 25 m^2 (10.2%), 0.64 m^2 (9.0%), 100 m^2 (3.5%), 9 m^2 (3.2%), other and not indicated (20.2%).
- **Precision of coordinates**: ≤ 10 m (30.5%), ≤ 100 m (4.2%), ≤ 1000 m (20.5%), ≤ 10 km (39.3%), > 10 km (5.5%).



Spatial distribution of the plots contained in NBGVD on 4 November 2022. Note that the remaining 123 German plots will soon be transferred to GrassVeg.DE. It is evident that the Middle and Northern parts of Fennoscandia as well as Iceland and Svalbard and Jan Mayen are hitherto missing in the database and thus particularly welcome.



Three typical vegetation types of which we seek plot data for NBGVD: Saline grasslands in Estonia – Mesic grassland on Gotland, Sweden – Sandy dry grasslands in NE Poland. Photos: J. Dengler.

This positive development was mainly possible through private scholarships awarded to Dr. Olha Chusova and Nadia Skobel from Ukraine, who supported us with data preparation for NBGVD. Many thanks to both! Nadia Skobel is based as a refugee at the University of Warsaw and is continuing this work. Currently, we still have money for digitisation/preparation. Therefore, we will continue this work in order to fill important spatial data gaps in the European Vegetation Archive (EVA; http://euroveg.org/eva-database) which hardly has any grassland and heathland data from the Nordic countries.

We thus will digitise valuable datasets from the literature and welcome you to send us pdf's of relevant papers with published vegetation plots. It would be even better if our members based in the region or working in the region would provide their own published and unpublished data in digital format as this allows much faster integration into the database. As a data contributor you do not only support NBGVD, EVA and Ukrainian scientists, you also ensure that your valuable data are permanently preserved for science and allow a better coverage of the Nordic-Baltic region in future continental to global studies of grassland vegetation. As a contributor you remain the sole owner of your data and can decide under which conditions it is available for research (restricted, semi-restricted, free). Additional benefits are that according to the NBGVD Bylaws (see our homepage), you will be invited for co-authorship in papers using NBGVD data and you can also get access to the complete European (EVA) and global (sPlot) databases for own research projects. We are sure that our Nordic-Baltic members have lots of valuable data in digital format, which they could make available for science via NBGVD, often just with a few clicks. Sometimes you might have even published the data together with a paper, but we are not aware of that, and the data are therefore not readily available for broad-scale analyses. Our main foci now are the most underrepresented countries in EVA, namely Iceland, Norway, Sweden, Finland and Estonia, Northern Poland and Denmark. Note that on the EVA maps Denmark and Poland appear better covered than they are in reality because most of the numerous Danish data are pure presence-absence data, while the majority of Polish data is in the Polish Vegetation Database (PVD).

Thus, do not hesitate and contact us to discuss possible data provisions. Also, any other contribution, such as help with the preparation of data and financial contribution to the scholarships for Ukrainian scientists, are welcome.

Thank you!

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Photo Story

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Gotland — a grassland paradise in the middle of the Baltic Sea

Photos and text by by Iwona Dembicz[1] & Jürgen Dengler[2,3]

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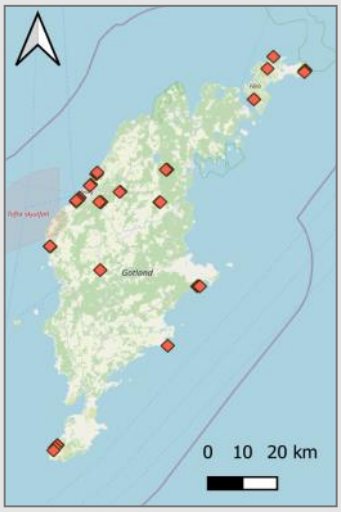
Gotland is Sweden's largest island, over 3,000 km^2 located in the middle of the Baltic Sea, 90 km east off the Swedish mainland and ca. 130 km west of the Baltic states. With a maximum elevation of 82 m a.s.l., Gotland is a flat island; nevertheless it hosts a large variety of habitats. With only about 60,000 inhabitants the population density is very low. Each year the local population is supplemented by tourists during the summer months.

Agriculture is a mainstay of the economy with the interior of the island supporting fertile soils which in turn support relatively intensive arable farming and sown meadows. Large parts of the island are nonetheless still occupied by natural and semi-natural habitats of a quality that is rare elsewhere in Europe. Due to the predominant limestone bedrock and the sunny subcontinental climate, Gotland hosts a much higher biodiversity than areas of comparable size on the Swedish mainland. There are alone 2,400 vascular plant taxa (including neophytes) known from the island plus large numbers of bryophytes and lichens. Gotland is also famous for its diverse bird fauna.

We visited the island in early June before the peak tourist season. While the early flowering species such as *Pulsatilla pratensis* and *Adonis vernalis* have already set seed by early summer, for biologists it is probably the best season. Gotland is a very good location for bicycle tours and one can easily rent good bicycles close to the harbour of Visby. We visited most of the sites on bike, which proved to be ideal for spotting nice plants next to the road. For those more remote places on the island we rented a car - including our visit to the nearby island of Fårö. Our visit was not only to observe and photograph grassland habitats, but also implemented the EDGG sampling methodology (normal plots and EDGG Biodiversity Plots) to obtain standardised biodiversity data of vascular plants, bryophytes and lichens for the GrassPlot database. The numerous nature reserves on the island make it easy to select places to visit, but there are also plenty of other interesting spots of high nature value along the roadsides.

The vegetation of Gotland shares many commonalities with the Swedish island of Öland and the Estonian island of Saaremaa, both of which are much better known in the scientific literature. The most outstanding feature of all three islands and some other parts of Estonia are the so-called "alvars" or, in Natura 2000 terminology, the priority habitat "6280 – Nordic alvar and Precambrian calcareous flatrocks". These alvars are developed over more or less horizontal limestone bedrock with only an extremely shallow or even absent soil layer. They are very rich in bryophyte and lichen species, but also have a unique vascular plant flora composed of a unusual mixture of temperate, arctic-alpine, steppic and (sub)Mediterranean species. However, alvars are not the only interesting type of grasslands in Gotland. In addition, there are also meso-xeric grasslands, some small remnants of species-rich mesic grasslands, mainly in wooded meadows, various sandy grassland types in coastal areas as well as extensive fens that are often grazed or mown.



Map of Gotland with the studied grassland sites marked.

Further reading

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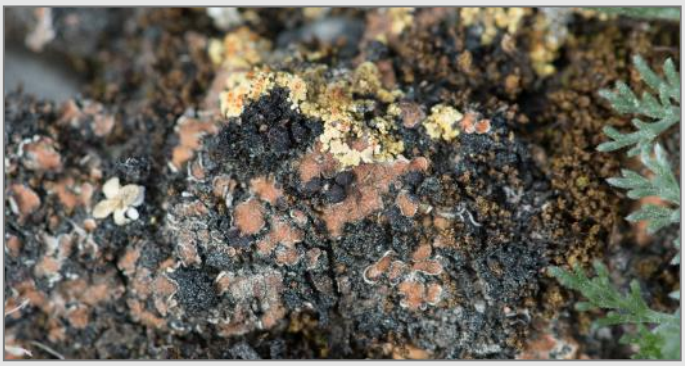
The island

As an island, Gotland offers wonderful views on the sea – The capital Visby is surrounded by one of the longest surviving Medieval walls – Remnants of historic windmills demonstrate the widespread use of renewable energy in the past – Typical countryside house on Gotland – There are numerous nature reserves on the island, all with attractive bilingual information boards. Unlike in most other countries, visitors are usually allowed to leave the paths – except for some bird breeding areas.

Alvars

Alvars, i.e. habitat complexes over Precambrian flatrocks, cover significant parts of the island. They host mixtures of open *Pinus sylvestris* woodlands, *Juniperus communis* shrublands, dry grasslands and wetlands. Where soils are a bit more developed, typical alvar vegetation is a mesoxeric grassland, often rich in *Orchis mascula*.



In parts of the alvars with less soil, only specialised vascular plants occur such as *Globularia vulgaris* and, in rock fissures, *Geranium sanguineum*, while bryophytes and lichens dominate. Bottom left: The coloured lichen community is a typical element, here with *Psora decipiens* and *Fulgensia* sp. Bottom right: The community with *Allium schoenoprasum* var. *alvarense* and *Sedum album* characterizes alvar parts that are temporarily wet and affected by soil disturbance through frost change.

Cliffs and fossile shorelines

After the end of the last glaciation, Gotland emerged more and more from the sea, in consequence of which large parts of the coast are formed by cliffs and/or fossile shore lines of coarse materials. Upper row: Nature reserve "Langhammars" on Fåö. Mid: limestone cliffs at the West coast south of Visby, nature reserve "Södra hällarna". Bottom: marl cliff in the nature reserve "Husrygg" in the very south, hosting isolated stands of *Adonis vernalis* and of the *Adonido -Brachypodietum* (*Cirsio-Brachypodion*).

Coastal dunes

Sand dunes are a relatively rare habitat at Gotland's coasts. Top: Unusual species combination in a coastal dune with two orchid species (*Orchis militaris* and *Epipactis atrorubens*) amidst a lawn of the recently introduced neophyte *Vulpia bromoides*. Mid-left: dune landscape in Tofta strand at the West coast. Mid-right: *Pulsatilla pratensis* is a typical element of the *Festucetum polesicae* (*Koelerion glaucae*). Bottom left: *Corniculario-Corynephoretum* (*Corynephorion canescentis*) with *Corynephorus canescens* and many lichen species. Bottom right: *Lathyrus japonicus* typically occurs at transitions between the *Koelerion glaucae* and *Ammophiletea arenariae* communities.

Nutrient-poor pastures on moraines and marine deposits

Dry, nutrient-poor grasslands do not only occur in the alvars, but also on moraines and some coarse marine sediments. Top and middle: nature reserve "Närkholm" with *Polyommatus* sp. and *Neotinea ustulata*. Bottom: Such sites are often grazed by the typical Gute sheep breed of Gotland.

Wooded meadows

Wooded meadows are a special and nowadays highly threatened habitat type of the hemiboreal zone. They were created by opening the forest and low-intensity haymaking in places where the soil was productive enough to host deciduous forest. They now host some of the most colourful and species rich meso-xeric and mesic grasslands of the island, often rich in orchids. The first four photos are from the nature reserve "Alvena linaräng", the last from the nature reserve "Fonnsängets".

Fens

Fens occur in depressions and due to the prevailing bedrock are mostly baserich, hosting vegetation types such as *Molinion caeruleae, Caricion davallianae* and *Cladium mariscus* stands. Top: landscape in the nature reserve "Kallgatburg" with a Serengeti-like appearance. Typical species include *Primula farinosa, Eriophorum latifolium, Lotus maritimus* and *Tringa totanus*.

Typical plants

Pulsatilla pratensis **is perhaps the most widespread forb across all types of dry grasslands on the island. In spring, millions of individuals are flowering all over the island, which were fruiting in June, while we could see only few "delayed" flowers. Bottom left:** ***Orchis mascula*****, the most widespread orchid of the island. Bottom right:** ***Fragaria viridis*****.**

Top left: *Pinguicula vulgaris*. Top right: *Scorzonera humilis*. Bottom left: *Melampyrum arvense*. Bottom right: *Briza media*.

Photo Competition

Best Shots on "Plant species richness"

Here are the winners of the EDGG Photo Competition within the topic "Plant species richness in Palaearctic grasslands".

The Jury for the Photo Competition was composed of Edy Fantinato (Chair), Anna Kuzemko, Rocco Labadessa, Jim Martin, Jalil Noroozi and Salza Palpurina.

1st place:

Species (extremely!) rich and colourful dry grassland (association *Scabioso hladnikianae-Caricetum humilis*).
Photo: Sonja Škornik.

Reviews from the Jury:

"Species richness in most people is associated with diversity, primarily of shapes and colors. This photo contains all the main colors of flowers that can be seen in grasslands - white, yellow, blue, pink, and their shades, and in the green background you can see different forms of leaves - representatives of different families. An excellent illustration of true species richness."

"With a colorful composition, this picture highlights the amazing diversity of a grassland patch at the top of its flowering season."

"The photo exhibits diversity of species, colours, and floral structures."

2nd place:

Rupicolous pannonic grassland with *Festuca valesiaca, Allium sphaerocephalon, Seseli annuum* and *Dorycnium germanicum* in the nature protected area Sankt Margharethen-Berg in the province of Burgenland, Austria. Photo: Philipp Sengl.

Reviews from the Jury:

"One can see that even the herb layer is further divided into upper and lower layers as if sending the message: There is room for more to join us. You can still fit here. Niche segregation is one key to maintaining species rich grasslands".

"Despite the harsh conditions, this dry grassland shows a very rich assemblage of taxa and life forms."

"This photo shows well the layering of the sandy grassland. The straight stalks of the garlic contrast beautifully with the stonecrop cushions, and this otherness reinforces the perception of the wealth of this community. With obvious scientific illustrativeness, the photo looks very aesthetically pleasing due to the delicate color scheme."

3^{3d} place:

It shows the world record grassland or actually the richest vascular plant community that was ever recorded in any habitat and biome worldwide at the 10 m^2 grain size. In 2009, during the 1st EDGG Field Workshop, we recorded 98 vascular plants, but meanwhile, Jan Roleček and colleagues even found up to 115 vascular plants in 10 m^2. It is a semi-natural, meso-xeric, basiphilous grassland near Cluj-Napoca, Transylvania, Romania. Photo: Jürgen Dengler.

Reviews from the Jury:

"Many different shades of green and flowers summarize very well the plant richness within this elegant grassland portrait."

"So crowded with plant species - must be really very species rich! :)"

"A lovely image with a cacophony of species crammed into this diverse grassland community."

Short Contributions

Latvian Fund for Nature is looking for 5 internship students for the 2023 grassland season

If you're interested in grassland ecosystems and want to get hands-on experience in grassland habitats, this is for you! Latvian Fund for Nature (LFN) has been working with LIFE projects focusing on grasslands for 20 years and has experience in researching and restoring grassland habitats. We are looking for 5 internship students starting from May 2023 for 3 to 4 months. Here you can find more information about the offers:

- grassland habitat inventory and management
- urban grassland inventory and management.

Gudrun Ruff from Germany, who had an internship with us in the summer of 2022: "The internship was perfect for me! It really prepared me on what it means to work in this field and made me realize that I could see myself working as a grassland expert. It also made me more self-confident about species determination and overall grassland-knowledge."

"This internship has been a 360° experience and I'm thankful to everyone who made it special. I feel enriched of knowledge and motivation to carry on with the studies on ecology, and possibly one day I'll be working for a similar project in a NGO committed to nature conservation and protection like LFN is." - Martina Marei Viti from Italy, internship student in 2021.

To apply:

- Record a short (max. 3 min.) video about yourself: brief presentation, your study area, why you want to come here, everything that you would like to tell us! Upload the video on any video sharing platform you use - Dropbox, YouTube, Vimeo, WeTransfer, etc.
- Prepare your CV.
- Apply by sending a link to the video and your CV to e-mail: ldf@ldf.lv

The application deadline is January 20, 2023. The internship is unpaid, priority will be given to applicants who are part or are planning to apply for Erasmus+ or other scholarship.

For more information, please contact Internship coordinator.

Nora Rustanoviča, nora.rustanovica@ldf.lv
Internship coordinator at Latvian Fund for Nature

LFN grassland expert Zane Līkā. Photo: LFN archive.

LIFE15 NAT/ES/000805 OREKA MENDIAN
Balance between conservation and livestock usage in Basque mountain pastures

Mountain pastures are one of the most threatened environments in Europe. According to the most recently published studies, such as the European Commission State of Nature Report to the European Council and Parliament, the abandonment of grazing systems and insufficient grazing resources are among the main problems affecting European terrestrial environments.

The Basque uplands have been shaped by migrating herds, with the livestock leaving the valleys where they spent the winter to be relocated to the slopes (common land in most cases). Mountain pastures are thus used to feed animals which in turn provide high-quality and highly sought-after produce. Such extensive livestock farming, provides the reason, the driving force and the tool to maintain large areas of open countryside that form part of the identity of the Basque Country and its mountains.

Changes in traditional livestock farming, the abandonment, the overexploitation of more accessible land and the replacement of sheep with larger livestock, are among the causes that have triggered conservation problems in mountain pastures.

The LIFE Oreka Mendian Project

Faced with this situation, in 2015 the European Commission approved Life Oreka Mendian, a project with the main goal of developing a conservation strategy for these areas of pasture within 15 Natura 2000 sites in the Basque Country and 8 in the Northern Basque Country.

With a budget of almost 4 million euros, 60% financed by the European Union, LIFE Oreka Mendian conducted a prior participatory planning process, defining actions to restore pasture habitats as well as other habitats or vulnerable species to be found within grazing areas. The initiative is also committed to the use of new technics and has showcased the importance of mountain pastures for ecosystem services and the social and economic development of rural areas.

Programme: **LIFE**

Budget: **€3,743,704**

European co-funding: **€2,246,223 (60%)**

Duration: **September 2016 – December 2022**

Coordinating Beneficiary: **HAZI Fundazioa**

Partners:

Further information: www.lifeorekamendian.eu

Participatory planning for the management of pasture environments

Over the early years of the project information gaps were resolved, while planning documents and tools were fine-tuned. Guidelines for each plan were successfully established thanks to a diagnosis derived from the review of flora of these spaces and their changes over the last 10 years, monitoring of the available pasture, based on grass production control cuttings in exclusion cages, and data on the livestock using the hillsides.

In line with the plans, actions were then developed for the conservation of mountain pastures, prioritised in accordance with the pasture supply/demand equilibrium, trends in the evolution of flora and the potential livestock use of the areas in question.

Northern Basque Country

The partners from Iparralde played a very active role in drawing up the monitoring protocols for the pasture habitats and its implementation, network, centralisation and analysis of data to calculate pasture production associated with each of the pasture habitats.

Sheep grazing in Aizkorri-Aratz (Basque Country) mountain pastures. Photo: R. Labadessa.

The protocols developed were used to evaluate the impact on the target habitat from the management actions included within the NATURA 2000 (EAFRD) Contracts in 8 locations of the Network in the Iparralde.

The evolution of trends in livestock activities and their effect on the landscape were evaluated by comparing pairs of photographs and a number of digital tools, revealing that mid-hillside areas are those most affected by changes in use.

Monitoring and dissemination of the project

Life Oreka Mendian has placed particular emphasis on the monitoring and analysis of the ecological effects of the conservation actions being taken. This involves the design of indicators to evaluate the actions undertaken.

Efforts have been made since the start of the project to debate initiatives and share knowledge among different administrations, countryside managers, researchers, livestock farmers, forest rangers and the general public. The integration and collaboration of livestock farmers at workshops and field visits proved an essential factor to guarantee the results obtained.

Life Oreka Mendian has served to lay the right foundations for continued efforts to maintain the natural, cultural and scenic capital of mountain pastures in a way that strikes a balance with proper socio-economic exploitation.

Ana Gracianteparaluceta, Amelia Ortubay, Javier Pérez

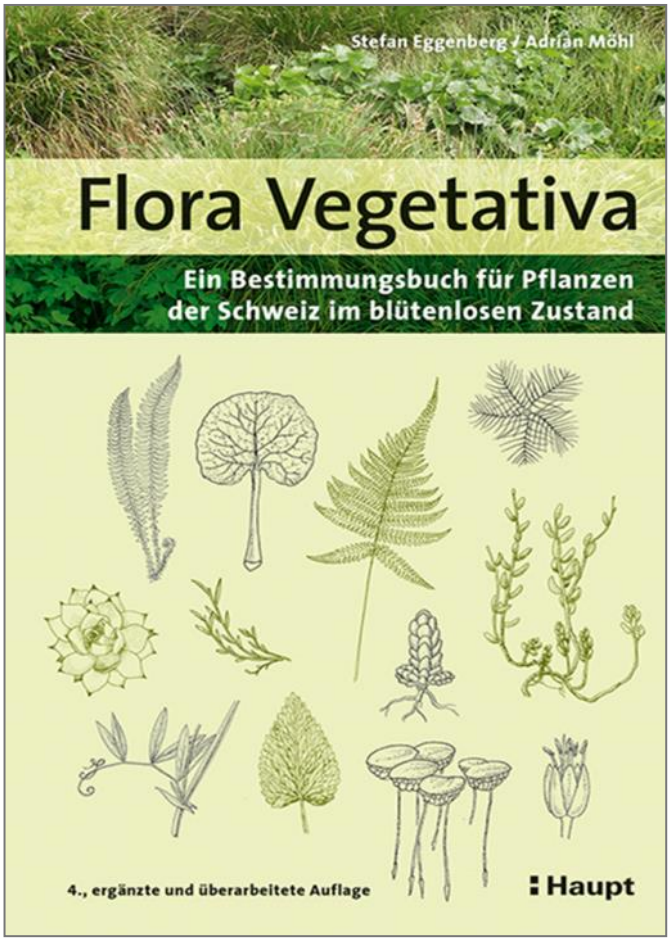
HAZI Fundazioa, Arkaute, Basque Country, Spain

Flock of sheep of the native *latza* breed in Aizkorri-Aratz (Basque Country) mountain pastures.
Photo: LIFE Oreka Mendian.

DOI: 10.21570/EDGG.PG.54-55.65

Book Review

Eggenberg, S. & Möhl, A. (2020) Flora Vegetativa – Ein Bestimmungsbuch für Pflanzen der Schweiz im blütenlosen Zustand. – 4., ergänzte und überarbeitete Auflage. 768 pp., Haupt Verlag,. ISBN 978-3-258-08177-9. 68,00 €.



In 2020, the new 4th edition of *Flora Vegetativa* was published. This book is an illustrated guide to the flora of Switzerland, but thanks to previous editions it has already become well known amongst a wide circle of people involved in floristic studies throughout Europe. A review of the 2nd edition was published by J. Dengler in issue 26 of the EDGG Bulletin.

In the new edition, the basic structure has been preserved. All species (and there are more than 3,000 of them) are divided into three groups – spore (horsetails, clubmosses, and ferns), angiosperm monocotyledons and angiosperm dicotyledons. I must note that gymnosperms are not included yet. Species are arranged within each group in alphabetical order of Latin family names. Dark squares with the corresponding letter on the text block help to navigate this rather voluminous book, which has almost 770 pages.

A general key is given in the introductory part, which gives the main features of monocots and dicots, as well as the main diagnostic features of families, accompanied by appropriate illustrations, which allow the primary identification of plants at higher taxonomic levels. Similarly, the description of almost every family also begins with an illustrated key, which is placed on a grey background so as not to confuse it with the description of the species. Species are arranged in plates, mostly four per page. Quite detailed illustrations are marked with diagnostic features which should be paid special attention to for correct identification. As the book title suggests, the main focus is on the vegetative characteristics of plants, which are extremely important for the identification of species in the field at any phenological stage. Taxa which are morphologically similar are indicated and appropriate cross-references are provided to enable comparison of their distinguishing features. Information on life span, specific binomials and German names, plant height range, altitudinal zone, ecological and phytosociological (at alliance level) preferences, as well as chorological type are also given. Some of this information is presented in abbreviated form, and explanations for them provided in the introductory parts. Each description is accompanied by a map of the species distribution in Switzerland. Such maps are based on the updated version of the Atlas of the Swiss flora. These maps are quite detailed but small. However, the book's frontispiece includes beautiful color maps of the altitudinal vegetation belts, floristic regions, bedrocks, and biogeographical regions of Switzerland, which, in combination with the distribution maps, gives the reader an idea of the patterns of species distributions.

The main differences between the 4th edition and the previous ones are that almost 150 new species have been added. These are aquatic plants of genera *Callitriche, Lemna, Utricularia* etc., as well as entire families, such as *Nymphaeceae, Ceratophyllaceae, Potamogetonaceae*. In addition, information is added on a number of neophyte species, in particular from difficult-to-identify genera such as *Amaranthus*, Aster (including *Symphyotrichum*), and *Chenopodium*. Taxonomy and nomenclature have been improved for some species. And most importantly, the authors took into account the remarks and comments received from readers and users of the previous edition. In particular, a mistake noted in J. Dengler's review of the 2nd edition regarding the nomenclature of *Bromus erectus* subspecies was also corrected.

Although *Flora Vegetativa* is published in German, I think that it has already found its fans among the non-German speaking audience, to which the author of this review in particular belongs, since the detailed drawings give a quite sufficient idea of the main diagnostic differences of the species. However, for such readers, I would recommend the compilation of a small glossary of morphological and ecological terms, which will allow more effective use of this excellent publication.

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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 Iwona Dembicz, i.dembicz@gmail.com. We will include your e-mail address so that readers can request a pdf. For authors who own full copyright, we can also post a pdf on the EDGG homepage.

Biodiversity & ecology

Bartha, S., Szabó, G., Csete, S., Purger, D., Házi, J., **Csathó, A.I.**, Campetella, G., Canullo, R., Chelli, S., Tsakalos, J.L., Ónodi, G., Kröel-Dulay, Gy. & Zimmermann, Z. 2022. High-resolution transect sampling and multiple scale diversity analyses for evaluating grassland resilience to climatic extremes. *Land* 11: 378.

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Conservation and restoration

Napoleone, F., Probo, M., Mariotte, P., Ravetto Enri, S., Lonati, M., Argenti, G. & **Burrascano, S.** 2022. Agri-environmental payments drive the conservation and forage value of semi-natural grasslands by modifying fine-scale grazing intensity. *Biological Conservation* 269: 109531.

Riesen, M., Widmer, S., **Dengler, J.** & Billeter, R. 2022. Einfluss von maschinell geöffneten Lichtungen in Grünerlenbeständen auf die Artenvielfalt von Gefäßpflanzen, Tagfaltern und Heuschrecken. *Naturschutz und Landschaftsplanung* 54(08): 24–31.

Methodology, classification, databases

Jandt, U., Bruelheide, U., Berg, C., Bernhardt-Römermann, M., Blüml, V., Bode, F., **Dengler, J.,** Diekmann, H., Dierschke, H., (…) & Wulf, M. 2022. ReSurveyGermany: Vegetation-plot time-series over the past hundred years in Germany. Scientific Data 9: Article 631.

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Forthcoming Events

1st EDGG Talk Grasslands Winter 2022-2023
27 January 2023, Zoom meeting
See details in this issue, on pp. 12-13

2nd EDGG Talk Grasslands Winter 2022-2023
24 February 2023, Zoom meeting
See details in this issue, on pp. 12-13

3rd EDGG Talk Grasslands Winter 2022-2023
17 March 2023, Zoom meeting
See details in this issue, on pp. 12-13

31st Conference of the European Vegetation Survey
21-25 May 2023, Roma, Italy

EDGG Field Workshop 2023
2-10 June 2023, Vinschgau, Alto Adige, Italy
See details in this issue, on pp. 9-10

65th Annual Symposium of IAVS
4-8 September 2023, Coffs Harbour, Australia
Conference website: https://iavsaustralia2023.com

Eurasian Dry Grassland Conference 2023
September 2023, Szarvas, Hungary
See details in this issue, on p. 11

Semi-natural grassland in the former arboretum "All-Union Scientific Research Institute of Agroforestry", Volgograd region, Russia. Photo: K. Trubakova.

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 19 December 2022, it had 1404 members from 65 countries.

The **Eurasian Dry Grassland Group (EDGG)** is a network of researchers and conservationists interested in any type of Palaearctic 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.

EDGG Executive Committee and responsibilities of its members

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Membership Administrator; Deputy Treasurer and Representative to IAVS; Chief Editor of *Palaearctic Grasslands*; Deputy Field Workshop Coordinator

Iwona Dembicz, Poland, i.dembicz@gmail.com
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Social Media Administrator; Conference Coordinator; member of the Editorial Board of *Palaearctic Grasslands*

Infrutescences of *Carlina acaulis* in winter, Swiss Pre-Alps. Photo: J. Dengler.