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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 publishes four issues per year. *Palaearctic Grasslands* publishes news and announcements of EDGG, its projects, related organisations and its members. At the same time it serves as outlet for scientific articles and photo contributions.

Palaearctic Grasslands is sent to all members of the group (1323 members from 67 countries as of 5th October 2018) and together with all previous issues, it is also freely available at http://www.edgg.org/publications.htm.

Scientific articles (Research Articles, Reviews, Forum Articles, Scientific Reports) should be submitted to Jürgen Dengler (juergen.dengler@uni-bayreuth.de), following the Author Guidelines published in *Palaearctic Grasslands* 37, 6–8. They are subject to editorial review, with one member of the Editorial Board serving as Scientific Editor and deciding about acceptance, necessary revisions or rejection.

All other text contributions (News, Announcements, Short Contributions, Book Reviews,…) should be submitted to Anna Kuzemko (anyameadow.ak@gmail.com) AND Idoia Biurrun (idoia.biurrun@ehu.es). Please check a current issue of *Palaearctic Grasslands* for the format and style.

Photo contributions (photos for general illustrative purposes with captions; proposals for Photo Stories; candidate photos for the Photo Competition) should be submitted to both Photo Editors, Rocco Labadessa (rocco.labadessa@gmail.com) AND Jalil Noroozi (noroozi.jalil@gmail.com). Deadline for submissions to the next Photo Competition on "Grasslands in black & white" is **31 October 2018**.

Contributions to the sections **"Recent Publications of our Members"** and **"Forthcoming Events"** should be sent to Iwona Dembicz (iwodem@op.pl).

Photos of submissions have always to be delivered in two forms, embedded in the document and as separate jpg (or tiff) files sufficient resolution for printing (i.e. not less than 1 MB).

Editorial Board

On front cover page: ***Mantis religiosa*** **in the "Doliny Labunki i Topornicy" Natura 2000 site, SE Poland.**
Photo: P. Chmielewski.

Editorial

Dear readers,

We are pleased to present the second issue of *Palaearctic Grasslands* after the re-launch of the former *EDGG Bulletin* under this new title. The feedback we received on the new concept was quite overwhelming, so we believe that this journal now combines the newsletter function of the former *Bulletin* with being an attractive publication outlet for scientific contributions.

We are particularly grateful to the Scientific, Photo and Linguistic Editors from our Editorial Board who eagerly made their contributions to make the journal as good and diverse as it is. Many things are new regarding formats and procedures, both for the Chief Editor Team and for the Editorial Board, but we believe now that we have largely established the necessary workflows that allow the effective and timely production of the future issues. Increasing numbers of submitted scientific articles together with the now higher quality requirements prompted us to increase our team of Scientific Editors further with eight additional members, from various different countries and backgrounds in both zoology and botany (see pages 4–6). We are glad to report that also a group of EDGG members from the UK and Ireland joined our team of Linguistic Editors to safeguard the linguistic quality of contributions from non-native speakers.

As you probably realise, our Photo Editors Rocco Labadessa and Jalil Noroozi, have been quite active. They successfully managed to retrieve nice photos from you, our members, to illustrate the issue, and for the first time in the history of the journal we have a more or less balanced relationship between animals and plants. So please continue to send your good photos to them. In this issue we also have a new Photo Story and the results of the first thematic Photo Competition, which we plan to have in each issue from now on, provided we receive sufficient high-quality submissions (see call on page 7).

Not only *Palaearctic Grasslands*, but also EDGG in general are thriving. After a nice and very international Eurasian Grassland Conference (EGC) in Italy this year (see report on pages 12–24) and a well-attended EDGG Field Workshop in Austria, there will be a binational EGC next year in Austria and Slovenia, while two Field Workshops are planned in Switzerland and Armenia (see pre-announcements on pages 8–11).

We wish you a pleasant reading and hope it inspires you to remain or become active in one or several of the EDGG activities.

Jürgen Dengler, Deputy Chief Editor
(juergen.dengler@uni-bayreuth.de)

***Podarcis siculus*, a frequent lizard in dry habitats of Italy. Photo: J. Dengler.**

News

Board of *Palaearctic Grasslands* is growing

We are glad to announce that following the re-launch of the former *EDGG Bulletin* as *Palaearctic Grasslands* and the consequent increase of interest to publish in this journal we were also successful in attracting 14 new members for our Editorial Board of whom seven from now on will serve as Scientific Editors, six as Linguistic Editors and one in both functions. In the following they present themselves with their visions for *Palaearctic Grasslands*. A warm welcome to Arek, Ashley, Dolores, Edy, James, Jim, Magdalena, Nina, Orsolya, Paul, Riccardo, Salza, Solvita and Stuart!

Edy Fantinato (Scientific Editor)
edy.fantinato@unive.it

In the ancient Greece there was a place, which was the heart of the city, where ideas were passed among great minds: the Agorà. *Palaearctic Grasslands* represents more and more the Agorà for grassland researchers. It is the place where knowledge can be improved, ideas exchanged, visions actualized. In the current Anthropocene Epoch, in which environmental conditions are changing with unprecedent speed, we are called, as members of the EDGG, to deeper understanding processes responsible for grasslands' capacity to withstand future challenges. Studies with unconventional approach and original findings will find in *Palaearctic Grasslands* the Agorà they deserve.

Edy Fantinato

Riccardo Guarino (Scientific Editor)
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Two hours on a grassland pacify with the world and I do not know such a heavy thought that can not be left out while looking at a grassland in full blossom. Sit there and you'll see everything as if it was the seed of something.

Riccardo Guarino

Arkadiusz Nowak (Scientific Editor)
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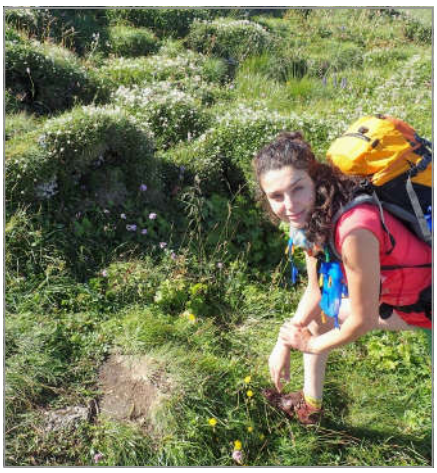
In my opinion *Palaearctic Grasslands* will serve as a good forum for exchanging opinions of grassland lovers, both professionals and amateurs. It should help with sharing not only the knowledge and scientific evidence, but also values, emotions and goals of all of us to make the society stronger. I hope that thanks to PG, we will get closer to solving grassland conservation problems, that should not be stored only on the paper or in our heads. I would like also to increase the visibility of Asian grasslands in our journal and society and improve the understanding of grassland conservation in low income countries. In my opinion *Palaearctic Grasslands* can serve also as a kind of start-up for young colleagues and facilitate their personal development.

Arkadiusz Nowak



The *EDGG Bulletin* was an inspiration for my research ever since I started working with dry grasslands. It does a great job to connect lovers of dry grasslands – both professional and amateurs – at the European level and beyond. As an Ed-Board member, I will work hard to contribute to increasing the quality and visibility of the contributions to *Palaearctic Grasslands* and to help to turn it into a full-fledged scientific journal.

Salza Palpurina

Salza Palpurina (Scientific Editor)
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Grasslands are so variable, each spot has its unique beauty and a complex of inhabitants, and, alas, a complex of threats to their existence. I do hope that *Palaearctic Grasslands* will become a valuable source of information, fresh ideas, mutual aid, and will contribute to grasslands conservation.

Nina Polchaninova

Nina Polchaninova (Scientific Editor)
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I believe that *Palaearctic Grasslands* provides a way to develop expertise for young scientists whose work is related to natural and semi-natural grassland science. We look at the review by other colleagues, as moments of learning, which greatly enrich us.

Solvita Rūsiņa

Solvita Rūsiņa (Scientific Editor)
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I really like the initiative of *Palaearctic Grasslands.* The Journal will be a living forum for grassland scientists to discuss ideas, share results and become updated with the latest news on grassland-related events.

Orsolya Valkó

Orsolya Valkó (Scientific Editor)
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In relation to the vision for the development of *Palaearctic Grasslands*, I would like to an enhanced focus on the contributions to the evidence base for ecological management of grasslands. There is a real need to facilitate communications and knowledge sharing across the research-policy-practice interface. Demonstration, best practice and pilot projects should be encouraged to publish their findings on the ecological management of grasslands in the Forum Articles and Scientific Reports sections of the journal.

James Moran

James Moran (Scientific and Linguistic Editor)
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My vision for the future of the journal is that I would like it to reflect the wide range of research that is being undertaken within *Palaearctic Grasslands*. I would like to see this vision reflected in a wide range of articles from different countries and a wide range of research projects including applied ecological research, grassland conservation, and grassland classification.

Jim Martin

Jim Martin (Linguistic Editor)
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My vision for the future of the journal would be to encourage the inclusion of research into less studied taxonomic groups in grasslands, particularly less charismatic invertebrate groups.

Ashley Lyons

Ashley Lyons (Linguistic Editor)
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I would like expand the outreach of *Palaearctic Grasslands* and promote the research outcomes to the wider public, as I believe that education is the essential for successful long term conservation.

Magdalena Firganek-Fulcher

Magdalena Firganek-Fulcher
(Linguistic Editor)
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In terms of *Palaearctic Grasslands*, I would like to look at the changing face of agri-environment policies and their (actual and potential) impacts on grasslands, and in particular the role of performance based schemes which are being tested under the European Innovation Partnerships programme.

Dolores Byrne

Dolores Byrne (Linguistic Editor)
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Stuart Smith (Linguistic Editor)
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It is great to see the *Bulletin* going from strength to strength, under the new *Palaearctic Grasslands* title. It is particularly welcome in these times of change when resources for grassland study and conservation seem harder than ever to come by. I very much look forward to contributing to its development.

Stuart Smith

Paul Goriup (Linguistic Editor)
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I think I can assist with extending the scope of *Palaearctic Grasslands* with contributions from both the UK and the Pontic steppe region where I am based, and also to other taxa, especially birds and insects. Further, I think it would be nice to have an occasional feature on grassland protected areas.

Paul Goriup

News

Photo Story and Photo Competition

In this issue we are pleased to announce the second call for the sections "Photo Story" and "Photo Competition", devoted to the beauty of Palaearctic grasslands.

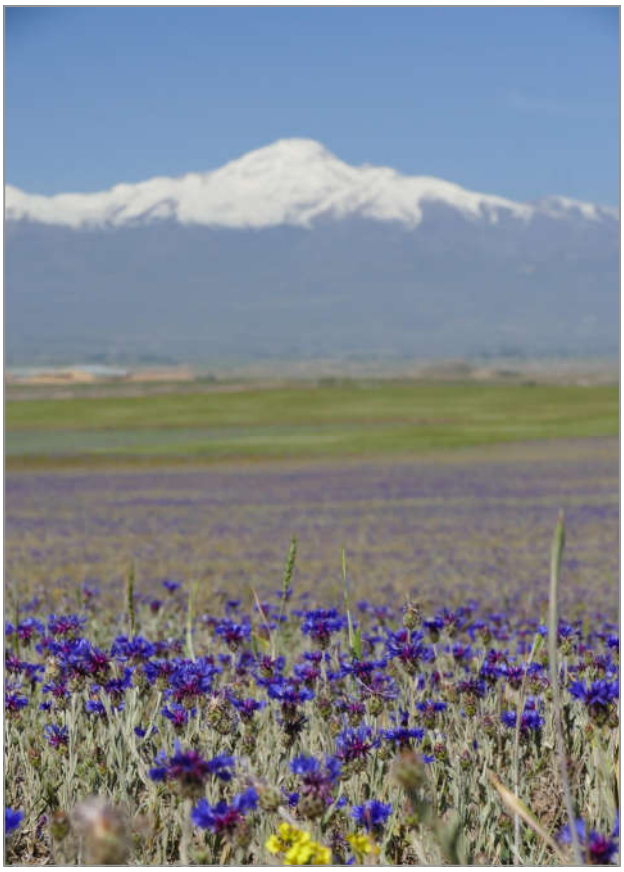
Photo Story is an open space where members can submit their own high-quality photo collection on a certain grassland-related topic of their choice. High-quality photos should be provided together with their captions (at least species names or landscape description), a brief text and possibly other graphical elements (like a map or a drawing). The selection of photos should fit on 1-5 pages and the proponents should already propose a preliminary layout (in PDF or MS Word format), which will be finally typeset by Editors. As an example, you can take a look at the Photo Story at pages 34-38.

Photo Competition is a call for grassland photographers to submit photos on a predefined grassland theme.

The theme of next EDGG Photo Competition is "**Grasslands in black & white**" in order to celebrate grassland shapes, lights and shadows.

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 information on the subject (species name, date, place name) and optionally technical details (camera, lens, aperture, exposure time). The selection will be made by the Photo Editors and two more members from the Editorial Board of the journal. The three best shots will be awarded with full space in the next issue, but we reserve the right to use further submitted photos for illustrative purposes in other parts of the issue.

If you want to contribute to Photo Story or Photo Competition, or if you simply want your photographs published in the journal, please submit your photos together with required information to Rocco (rocco.labadessa@gmail.com) and Jalil (noroozi.jalil@gmail.com).



***Centaurea depressa*, 2000 m a.s.l., NW Iran. Photo: J. Noroozi.**

***Macrolepiota procera*, a very tasty mushroom found in dry and mesic grasslands of Central Europe. Photo: J. Dengler.**

EDGG Event

DOI: 10.21570/EDGG.PG.38.8-9

16th Eurasian Grassland Conference

Species-rich grasslands in the Palaearctic – a treasure without economic value?

Austria and Slovenia, with Graz as conference venue

29 May – 5 June 2019

First call

Grasslands in the Palaearctic biogeographical realm are exceptionally species rich; they are a treasure of nature. However, their values are often neglected in man's thinking, either from the perspective of management of natural resources or policy measures. The **aim** of the 16th annual Eurasian Grassland Conference is to highlight the ecosystem values Palaearctic grasslands deliver to the world, and to provide a forum for the exchange of ideas on how we effectively ensure their sustainability. In addition, it aims to promote networking and collaboration between those interested in all aspects of semi-natural and natural grassland research and conservation. The conference is intended to bring together the latest research and link this to practical management and policy, thereby contributing to the sustainability of semi-natural grasslands and their animal and plant resources.

The conference will take place from **29th May to 5th June 2019**, jointly hosted by the universities of Graz, the capital city of the province of Styria (Austria), and Maribor, the second largest city of Slovenia. The academic part of the conference will be held at the Institute of Biology, Department of Plant Sciences, University of Graz, in the heart of Austrian Styria.

Two excursions are planned. The mid-conference excursion (**31 May**) will focus on species rich *Arrhenatherion* grasslands in a "***hay-milk"* region** in the western part of Styria (Austria). Moreover, a three-day post-conference excursion will take place in Slovenia (**2–5 June**). On the first day, we will visit the **Goričko Landscape Park** with dry grasslands on acid non-carbonate substrate (NE Slovenia). During the second day, we will visit the wooded (dry) grasslands (the remains of an ancient cultural landscape) along the **Drava River**, the low tertiary **hilly Haloze region,** which has the highest density of orchid-rich *Mesobromion* meadows. The third day will take us to the **Slovenian Dinaric** (sub-Mediterranean Illyrian) dry meadows (alliance *Scorzonerion villosae*) and **karst** pastures (alliance *Saturejion subspicatae*).

As in previous years, there will be:

Technical workshops, dedicated to actions on grassland management and networking

IAVS travel grants, available for those who fulfil the grant allocation criteria

Young Investigator Prizes, for young scientists for the best oral or poster presentations to the conference

Conference publications, in the form of Special Features (SFs) with selected contributions from the conference and published in international, peer-reviewed journals, guest-edited by EDGG members

Important dates

Early Bird registration deadline – 28 February 2019
Late registration deadline – 29 March 2019
Abstract submission deadline – 29 March 2019

Preliminary programme

29th May	Welcome in Graz, registration 16:00 – 20:00
30th May	Talks and posters
31th May	Mid-conference excursion (Styria, Austria), optional technical workshop, in the evening: grassland party
1th June	Talks and posters; EDGG General Assembly
2th June – 5th June	Post-conference excursion (Slovenia), optional, max. 40 participants

Registration

The conference web page with the possibility to register and upload your abstracts will be launched in January 2019 (all EDGG members will be informed by e-mail when the website is available). Further information (fees, detailed schedule) will be announced in the Second Circular (*Palaearctic Grasslands* 39, December 2018).

Organizers

The Eurasian Dry Grassland Group (EDGG) (www.edgg.org)
The University of Graz (https://www.uni-graz.at/)
The University of Maribor (https://www.um.si/en/Pages/default.aspx)

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Nataša Pipenbaher / University of Maribor, Local Organising Committee, natasa.pipenbaher@um.si

Sonja Škornik / University of Maribor, Local Organising Committee, sonja.skornik@um.si

Mike Vrahnakis / EDGG Executive Committee, EGC Coordinator, mvrahnak@teilar.gr

Didem Ambarlı / EDGG Executive Committee, EGC Coordinator, didem.ambarli@gmail.com

Hayfield near Neumarkt/Styria, Austria. Photo: M. Magnes.

Sub-Mediterranean Illyrian Grasslands, association *Danthonio-Scorzoneretum*. Photo: N. Pipenbaher.

Orchids-rich *Mesobromion* meadows in Haloze region, NE Slovenia. Photo: S. Škornik.

EDGG Event

DOI: 10.21570/EDGG.PG.38.10-11

EDGG Field Workshops 2019: Switzerland and Armenia

Fist call

Since 2009, the **EDGG Field Workshops** (formerly known as **EDGG Research Expeditions**) are a major element of the annual activities of EDGG. They aim at the **collection of standardised, multi-scale and multi-taxon diversity and composition data** (see Dengler et al. 2016) from understudied Palaearctic grassland types. The data collected during the Field Workshops are used for **joint publications by the participants** and they are fed into the **EDGG vegetation-plot database, called GrassPlot** (Dengler et al. 2018). While originally only vascular plants, bryophytes, lichens and soil data have been collected, we meanwhile aim to include other taxonomic groups that could reasonably be sampled during a once-off visit, including grasshoppers, leaf hoppers, spiders, and butterflies (Dengler et al. 2016; Polchaninova et al. 2018).

So far 11 such events took place in different parts of Europe and Asia, but the number of interested participants steadily grew. For the 11th Field Workshop 2018 in Austria for the first time not all interested applicants could be accepted due to organisational limitations. Therefore, we plan for **2019 two Field Workshops** to ensure that all interested EDGG members can participate in at least one of them. Unsuccessful applicants of 2018 will have priority when they apply again.

We are looking forward to a **good mixture of long-term participants and "newcomers", of members at different academic levels (from Bachelor students to professors) and from many different countries**. While vascular plants are the core of the sampling, we are very **eager to include also bryophyte and lichen specialists as well as zoologists and/or microbiologists** who wish to sample their respective taxonomic groups on the same plots.

In the following, you find **preliminary announcements** of both events that allow you to "block" the respective dates. Full calls will be published in the next issue of *Palaearctic Grasslands*. Only after these full calls an official application for participation is possible. In order to plan (e.g. to get an impression on the number of places needed), we recommend, however, that you inform EDGG's Field Workshop Coordinator of your wish to participate in one or both events. If you have specific questions on one of the two events, you can contact their main organisers. If you have expertise in grassland taxa other than vascular plants (bryophytes, lichens, invertebrates, soil metagenomics,…) and consider joining one of the events, please approach Jürgen and Idoia as early as possible to discuss options.

12th EDGG Field Workshop: Inneralpine dry valleys of Switzerland

Approx. dates: 11–19 May 2019

Main organiser: Jürgen Dengler, juergen.dengler@uni-bayreuth.de

Rocky steppe above the Rhone valley in Varen, Valais, Switzerland. Photo: J. Dengler.

Number of participants: up to 9 (or up to 18) persons in total, including 1–4 organisers, i.e. 5–15 other participants

Thematic scope: Dry grasslands (*Festuco-Brometea*, *Koelerio-Corynephoretea/Sedo-Scleranthetea*, *Trifolio-Geranietea*) of continental, inneralpine valleys of Switzerland, i.e. in the Cantons of Grisons and Valais

Start and end point: Wädenswil near Zurich (easily reachable by metro from Zurich Airport and Zurich main station in about 1/2 hour)

Approx. costs: Not yet clear (we try to find an affordable solution, but Switzerland is an expensive country)

IAVS travel grants: not available; all available funds are assigned to the 13th Field Workshop

More information: Braun-Blanquet (1961) and Dengler (2018)

13th EDGG Field Workshop: Grasslands of Armenia along the elevational gradient

Approx. dates: 26 June –7 July 2019

Main organiser: Alla Alexanyan, alla.alexanyan@gmail.com

Number of participants: up to 20 (exceptionally up to 30) persons in total, including four organisers, i.e. up to 16 other vascular plant botanists and up to 8 specialists for other taxa.

Thematic scope: All types of mesic, dry and rocky grasslands that occur in the country along the full elevational gradient (850-3000 m a.s.l.)

Start and end point: Yerevan

Approx. costs: 850 € (postdoc/professor, non IAVS member), 750 € (postdoc/professor & IAVS member OR student/PhD student & non IAVS member), 650 € (student/PhD student & IAVS member

IAVS travel grants: available upon application based on motivation letter & financial need

More information: Fayvush & Aleksanyan (2016) and Fayvush et al. (2016, 2017)

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Idoia Biurrun, Bilbao, Spain (idoia.biurrun@ehu.es)
Jürgen Dengler, Wädenswil, Switzerland (juergen.dengler@uni-bayreuth.de)

Grasslands in the Syunik region, Zangezur mountian range, Armenia. Photo: G. Fayvush & A. Aleksanyan.

EDGG Event

DOI: 10.21570/EDGG.PG.38.12-24

Report on the 15th Eurasian Grassland Conference in Sulmona, Italy

The 2018 Eurasian Grassland Conference "Cooperating for Grassland Conservation" (EGC 2018) took place from 4th to 8th June 2018 in the town of Sulmona, located in the centre of the Apennines in the Majella National Park. It was jointly organised by the University of Rome La Sapienza and the Majella National Park.

This was the 10th conference of the EDGG, despite the official numbering includes the predecessor conferences of the AG Trockenrasen. The main topic of the conference was the conservation of grasslands through transdisciplinary and transnational cooperation. A total of 59 participants from 18 countries attended the conference, which included two keynote talks, 27 regular talks and 16 posters. The attendance of five participants was made possible with travel grants provided by EDGG/IAVS (see Box 1).

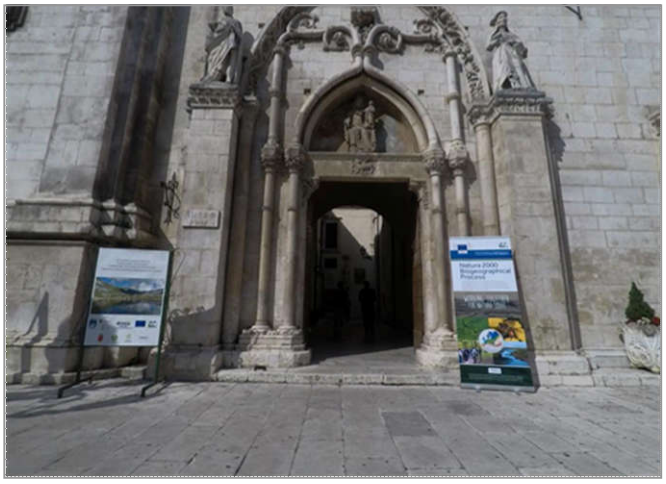
The conference started with a workshop on the main EU funding schemes related to grassland conservation (Interreg Europe and LIFE+) and a welcome drink during which most participants gathered in the town of Sulmona. There was also a workshop on the Natura 2000 Biogeographical Process (see Box 2), and mid-symposium and post-symposium excursions, the latter including a practical demonstration of the standard EDGG biodiversity sampling (see Box 4), as well as the annual General Assembly of the EDGG (see Box 3).

The first day of the conference included three sessions that gave an idea of the issues related to habitat classification and reference values (session 1). The main threats and pressures on which speakers reported were changes in land-use and invasions by non-native species (session 2). Finally some conservation actions (e.g. specific grazing plans, prescribed burning) were proposed during session 3.

On the second day, the excursion gave participants the possibility of looking at different types of regionally typical grasslands, from those dominated by annual species at about 800 m a.s.l. to those in contact with the subalpine *Pinus mugo* formations, and to discuss their current and past management regimes.

The third conference day included a session on conservation priorities, with talks ranging from the gene to the ecosystem levels. During the afternoon, participants moved to the National Park operational center for the knowledge market and for the networking session. The Knowledge market included 16 posters and stands of ongoing LIFE+

The central square of Sulmona with a rainbow during the conference. Photo: S. Burrascano.



Upper left: entrance to the conference venue; upper right: co-organiser Eleonora Giarrizzo giving her talk. Photos: S. Burrascano; lower left: during the lunch break; lower right: Stephen Venn and Pietro Brandmayr enjoying their lunch. Photos: J. Dengler.

Trek of the participants in montane grasslands. Photo: S. Burrascano.

Picnic in a cattle pasture. Photo left: J. Dengler; right: S. Burrascano.

Jürgen Dengler taking photos (left) and Pietro Brandmayr and Stephen Venn collecting carabids (right). Photos: N. Polchaninova.

projects and of local farmers. The networking session included a plenary introduction, after which participants were split up into four working groups, with each group reporting on the main ideas contributed to the topics of the conference (Box 2).

The evening session comprised the annual General Assembly of EDGG, during which the EDGG chairs presented past and forthcoming activities of the working group (see Minutes in Box 3) and thanked the organisers of the EGC-2018 in Sulmona for this wonderful event. Also, as is customary, prizes were awarded for the best oral and poster presentations of young investigators. According to the 5-member jury, the best oral presentation was that of Ludovica Oddi, who presented "*Functional biodiversity is the key point of the interaction between climate and land-use change in a subalpine grassland*", jointly prepared by L. Oddi, E. Cremonese, G. Filippa, M. Galvagno, U. Morra Di Cella and C. Siniscalco. The second best prize went to Eugen Görzen for the talk "*Burning and restoration from the seed bank – Conservation perspectives for dry basiphilous grassland in Transylvania (Romania)*", prepared by E. Görzen, K. Boris-

During the General Assembly, Nataša Pipenbaher and Sonja Škornik presented the proposal for the EGC-2019, jointly hosted in Styria (Austria) and Slovenia. Photo: J. Dengler.

Mike Vrahnakis, EDGG's Conference Coordinator, awards the winner of the best oral presentation, Ludovica Oddi, and thanks two of the main organisers of the EGC-2018, Sabina Burrascano and Eleonora Giarrizzo. Photos: J. Dengler.

Poster session. Photo: J. Dengler.

Grassland party. Photos: S. Burrascano.

Grassland species of the second excursion, left: *Ophrys lucana* right: *Aporia crataegi*. Photos: G. Ciaschetti (left), J. Dengler (right).

Group photo on the crest above the glacial amphitheatre near Rifugio Bruno Pomilio at about 2100 m a.s.l. Photo: S. Burrascano.

ova, A. Fenesi, E. Ruprecht and T.W. Donath. The best poster presentation was determined by the voting of all conference participants, and this award went to Anna Theresa Lehmair, who presented "*Genetic conservation areas – A new approach to protect both species and genetic diversity of litter meadows*", jointly prepared by A.T. Lehmair, E. Pagel, P. Poschlod and C. Reisch. The second best prize went to Sven Rubanschi, for the poster "*The impact of historical land use on the creation of sandy grasslands*", prepared by S. Rubanschi and P. Poschlod.

This day was the richest in emotions and ended with the grassland party, with traditional food and music in the welcoming court of the National Park operational centre.

The second excursion gave the participants the possibility of enjoying one of the widest and richest grassland slopes in the National Park and to perform a sample according to the standardized GrassPlot protocol (Box 4).

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Box 1. Impressions from the IAVS Travel Grantees

Thanks to the IAVS and its Global Sponsorship Committee, EDGG could support the participation of five scientists in the EGC-2018 in Sulmona. Here they report their impressions.

Alla Aleksanyan, Armenia (alla.alexanyan@gmail.com)

For scientists and especially young scientists working with grasslands this conference is a great opportunity for presenting ongoing research, sharing experience and getting valuable feedback from colleagues of all over the world. From other side you will have opportunity and enlarge your network, start new collaboration, sometimes find new areas for future research. This is all I got from my participation in 15th Eurasian Grassland Conference "COOPERATING FOR GRASSLAND CONSERVATION".

I would like to thank Executive Committee of EDGG for given opportunity and financial support to participate in 15th Eurasian Grassland Conference.

I want to mention that the program was very intensive and interesting, but I think that the Networking event of the Natura 2000 Biogeographical process could be separate event, because participants were from different areas and not all of them were aware about details of Natura 2000 Biogeographical process and time for such important discussion was too short.

I found very useful post-conference excursion for me and I think for other participants who would like to learn the EDGG sampling methodology. But I think for the next time organizers could offer two options for participants who already know this methodology or are not very interested on it.

And of course I enjoyed all presentations from keynote speakers, which gave me chance to have broad-scale view on current international challenges and tendencies of different research in grasslands.

Valentina Borodulina, Russia
(valentinka_bo@mail.ru)

I am grateful to EDGG for the opportunity to participate in the conference. The conference in Sulmona was my third EDGG conference. It was nice to meet old friends and new ones. Also, I was really impressed by the venue of the conference: Sulmona is very beautiful and cozy place.

The conference EGC 2018 was the perfect place to present the continuation of our work dedicated to abandoned grasslands in NW Russia. In recent decades without agricultural use grassland areas decrease and become overgrown with forest and Russian grasslands are no exception. Due to this the conference section «Grassland threats and pressures» was of particular interest for me. During the conference I was able to communicate with scientists from other countries and to find common topics for discussion. Besides EGC 2018 was an excellent opportunity for collaboration not only with botanists but also with experts in other fields (for example, GIS specialists and conservation area experts). Poster session was very entertaining and informative. Unfortunately, it seemed to me that there was not enough time for the poster session. Nevertheless, I got feedback on my study and recommendations for further researches during the poster session.

Another point was that I had a great opportunity to participate in the session: “Cooperating for grasslands”. During this session we were working in groups and addressed some subtopics to brainstorm transnational cooperation projects within the EDGG.

In addition, I would like to thank the staff of the Majella National Park and local organizers of EGC 2018 for a delightful mid-conference excursion with interesting talks and magnificent views.

Thank you all for the wonderful conference!

Eugen Görzen, Germany (egoerzen@ecology.uni-kiel.de)

I am very thankful to the EDGG and IAVS grant committee for the travel support and the opportunity to participate in the 15th Eurasian Grassland Conference 2018 in Sulmona. The EGC 2018 was the second EDGG conference (after EGC 2016 in Sighișoara in 2016) I attended and I was happy to meet and exchange with many grassland experts from the EDGG community and to see familiar faces from Sighișoara again. As expected, the atmosphere at the EGC was relaxed and professional at the same time. The venue in the ancient town of Sulmona was lovely and I enjoyed the mid-conference excursion to the grasslands in the Majella National Park very much. It was fascinating to learn and to see how management, management changes and abandonment have shaped the appearance and plant species composition of these grasslands.
During the oral sessions, I had the opportunity to present parts of my PhD-research on woody species encroachment and fire management to halt secondary succession in Transylvanian grassland to the EDGG community. Nowadays, the expansion of shrubs and trees is a threat to biodiversity in many Palaearctic grassland ecosystems, and burning as a management tool to limit woody species encroachment is under controversial debate. Therefore, I was pleased to receive feedback from and exchange experiences with colleagues who have expert knowledge on shrub encroachment and fire management from other Eurasian grasslands. I like the spirit at Eurasian Grassland Conferences very much because all participants cooperate in order to contribute to grassland conservation and restoration in the Palaearctic realm. I want to thank the organizers for the great conference and I am looking forward to the next EGC and other EDGG events!

Oleksii Kovalenko, Ukraine (corydalis@ukr.net)

I would like to say a great thanks to the IAVS and EDGG for supporting my participation on the 2018 Eurasian Grassland Conference held on June 4–8, 2018. The conference was organized by the Eurasian Dry Grassland Group, the International Association for Vegetation Science, Sapienza University of Rome, Majella National Park and Società Botanica Italiana. There were four main topics of the presentations at the conference: habitat classification and indicators of conservation status, grasslands threats and pressures, conservation goals and appropriate measures and setting conservation priorities. On the special workshop “Cooperating for grasslands” a number of issues related to the interpretation of habitats, monitoring programs, conservation measures, that need to be solved, was revealed and discussed.
It was a great experience for me. I have got a lot of new ideas about my future work and inspiration for it. I participated in both excursions. I saw a number of beautiful semi-natural grassland communities from Italy and took part in a great team work of making of EDGG Biodiversity Plots. The conference location seemed extraordinary appealing to me, due to its amazing setting in the historic old town of Sulmona. In general, the work of the conference was extremely informative and interesting, covering a wide range of fundamental and applied issues concerning the structure, functioning and conservation of grassland ecosystems. Special thanks go to the conference organizers who resolved all the problems and made all days of conference unforgettable.

Nina Polchaninova, Ukraine (polchaninova_n@ukr.net)

I am very thankful to the Grant Committee for the opportunity to take part in the conference. As always, many questions worth to think about were raised and discussed. It was clearly seen that we are facing the same problems in various geographic regions and countries: changing of traditional management, pasture abandonment vs. overgrazing, difficulties in the organizing of multi-taxon studies, etc. A challenging task is to make ecologically friendly farming profitable for local farmers and involve them in the conservation programs. Live communication with colleagues and gained experience will help me to implement new ideas in the conservation of Ukrainian steppes.
The mid-conference excursion opened me new landscapes and grassland diversity. The history of local husbandry and the program of Majella Park for the wolf protection as well as cooperation with local farmers was very interesting and illustrative. Besides, the town of Sulmona, its confetti, cheese and Italian cuisine made the conference unforgettable.

Box 2. Workshop on the Natura 2000 Biogeographical Process

The EU Biodiversity Strategy calls for significant improvements in the conservation status of species and habitats protected under the EU Birds and Habitats Directives by 2020. To help meeting this target, the European Commission launched in 2012 the Natura 2000 Biogeographical Process, a multi-stakeholders' co-operation process at the biogeographical level, including seminars, workshops and cooperation activities to enhance effective implementation, management, monitoring, financing and reporting of the Natura 2000 network. Since 2012, ten Natura 2000 biogeographical Seminars have been organized. One of these networking events was the workshop 'Cooperating for Grassland conservation'.

Almost 50 experts participated in the workshop in the last session of the EGC. The workshop was organized by the team from the Biogeographical Process which consisted of Theo van der Sluis (project leader), Carlos Sunyer and Lola Manteiga (Terra Ecogest Spain), Javier Cabello (national expert, University of Almeria) and Jan Sliva (monitor LIFE projects, NEEMO).

In four different groups, themes were discussed that had been central to most of the presentations and the excursion of the previous days:

- Habitat definition and interpretation
- Favourable reference values
- Action plans for habitat conservation at biogeographical level
- Grassland conservation, EU-funding and cohesion policy

The four groups discussed the experiences in the different member states, practical approaches and solutions for the observed issues and problems, and based on that what practical steps and cooperative action would be needed to come to a solution, also giving rise to new ideas and approaches.

The results from the workshop will be used to support the Road Map for the Mediterranean biogeographical region, and because they are related to recurring problems also in other biogeographic regions, this should lead to new initiatives aiming at implementing measures or initiatives that will support the establishment and enhancement of the Natura 2000 network.

The Biogeographical process stimulated the exchange of knowledge and sharing best practices through the knowledge market. At the poster session, contributions on research as well as projects funded by the LIFE+ program were presented. There was also a stand from one of the grassland habitat managers, a shepherd presenting the products from his farm which included wool products, sausage and cheese as well as promotion products.

The workshop report can be found at the Platform webpage. The results of the workshop can be used as an opening for the discussion in the next EGC in Graz, 2019.

Theo van der Sluis (theo.vandersluis@wur.nl)

Introduction to the Natura 2000 Biogeographical Process workshop (Photo: S. Burrascano) and two thematic discussion rounds (Photo: T. van der Sluis).

Box 3. Minutes from the General Assembly

The General Assembly (GA) of the EDGG was held in Sulmona, Italy, on 7th June, at the end of the 15th Eurasian Grassland Conference (EGC). This GA was a Qualified GA, as it fulfilled the criteria of being attended by at least 40 members from at least 10 different countries, with no country being represented by more than a third of those present (EDGG Bylaws § 5.4). The Executive Committee was represented by Jürgen Dengler, Mike Vrahnakis and Stephen Venn.

The Secretary-General opened the GA at 6:00 p.m. The main purpose of the GA is to publicly review the activities of the organization, as managed by the Executive Committee (EC), during the period 2017-2018. The first topic was the status of the membership, prepared by Idoia Biurrun, and currently EDGG has 1272 members from 67 countries. The financial report, prepared by Péter Török, showed a current balance of €961.15. The EDGG does not currently have other income than the baseline funding of €500 per annum from the IAVS, and other grants and occasional project funding from the IAVS. The ongoing project to update and reinvigorate the EDGG website has used a considerable proportion of the project funding and lack of available funding is restricting progress with the website project. Therefore, the EC has been considering possible ways of attracting additional funding, such as the marketing of T-shirts, canvas bags, etc. This presentation was closed with an invitation to members to help with suggestions for fundraising activities. We are still happy to receive such suggestions and they can be sent to Péter or any other members of the EC.

The next topic on the agenda was a report on the Eurasian Grassland Conferences, prepared by Didem Ambarli and Mike Vrahnakis. The 16th Eurasian Grassland Conference will be jointly held in Austria and Slovenia, 29.5-05.06.2019, and this was presented by Nataša Pipenbaher and Sonja Škornik. The organizers will be the Institute of Biology, Department of Plant Sciences, University of Graz, Austria and the Department of Biology, University of Maribor, Slovenia. Proposals for future EGCs include 2020 or 2021 Bilbao, Spain (Idoia Biurrun), and possibly Morocco (Claudio Porqueddu) and Lanzhou City, Gansu Province, China (Prof. Dr. Zhan-Huan Shang). Other proposals for future conferences, as well as for how to improve the conferences, are also very welcome, as announced in the GA.

Jürgen Dengler presented an overview of the Field Workshops over the previous nine years. The 11th Field Workshop in 2018 was held in the Inner-Alpine valleys of Austria during 6-13th July 2018. The 12th Field Workshop will be held in Armenia in 2019. Further details will be published in *Palaearctic Grasslands*. A number of venues have been proposed for subsequent field workshops, including Italy, Spain, Poland, Bosnia and Herzegovina, Montenegro and Central Asia. Data from the workshops have been collated in the GrassPlot repository, which now contains 126 datasets with 168.997 plots from 35 countries.

Stephen Venn presented a report prepared by Didem Ambarli on the reconstruction of the EDGG homepage. There is now a demonstration version of the proposed new homepage, with sections managed by each of the chairs. We hope to begin testing this version online soon. The web sites for the future EGC conferences will be incorporated into the new EDGG homepage. However, this is also a topic in which we would very much like to get help from any of the members. If anyone has experience/skills/willingness to help us improve and manage the web page, then please contact Didem.

Jürgen Dengler presented a report prepared by Anna Kuzemko, Idoia Biurrun and himself on the Bulletin. There have been two issues of the *EDGG Bulletin* during the reporting period, issues 35 and 36. The next editions will be titled *Palaearctic Grasslands*, instead of the Bulletin. This new format will have a larger editorial team, have a broader scope, and we believe it will be more attractive for both readers and authors. Anna continues as the Chief Editor, now supported by Idoia and Jürgen as Deputy Chief Editors.

Other EDGG publications, presented by Jürgen and Péter, comprised the 12th EDGG SF in *Tuexenia* 37, the fourth SI in *Hacquetia* 37, and the 13th SF to be published in *Tuexenia* 38 during 2018. The book *Grasslands of the World: Diversity, Management and Conservation* (Squires, Dengler, Feng & Hua, eds., 2018), containing eight chapters edited by EDGG members, will be published in 2018. There is currently an open call for papers for the 14th EDGG SF in *Tuexenia*, on the topic of flora, vegetation and conservation of Central European grasslands. Abstracts should be submitted for consideration to Balázs Deák (for details, see updated call in this issue).

The Secretary-General closed the General Assembly at 7:30 p.m.

Secretary-General ***Stephen Venn***
(stephen.venn@helsinki.fi)

Box 4. Demonstration of an EDGG Biodiversity Plot in San Nicola on 8 June 2018

In his keynote lecture, Jürgen Dengler had introduced the standardised EDGG biodiversity sampling methodology used in the annual EDGG Field Workshops (Dengler et al. 2016b), as well as the GrassPlot database of EDGG, which collects and provides such multi-scale plant diversity data from Palaearctic grasslands (Dengler et al. 2018). The post-symposium excursion offered an ideal opportunity for a practical demonstration of the so-called EDGG Biodiversity Plot (Dengler et al. 2016b) in a diverse limestone grassland. As usual, a relatively homogenous 100-m² square plot was delimited in two opposite corners, of which subseries of nested plots from 0.0001 m² (1 cm²) to 10 m² were arranged in a nested manner. For the sake of expedience, this time exceptionally only vascular plants were recorded (with the shoot presence system, while the (relatively few) terricolous bryophytes and lichens were disregarded). The explanation of the method and the careful and complete demonstration required about 2 hours.

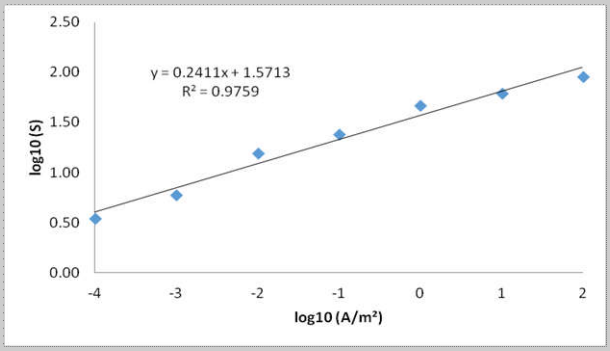
The sampling was conducted in the Majella National Park (Italy: Chieti province: Palena municipality: San Nicola) in a pasture grazed by sheep and to a small extent cows. The centroid of the plot was located approximately at 41.99194° North, 14.11333° East at 1171 m a.s.l. (precision: 20 m). The syntaxonomic assignments of the stands according to the Italian national system (*Festuco-Brometea*: *Phleo ambigui-Brometalia erecti*: *Phleo ambigui-Bromion erecti*; Biondi et al. 2014) and the EuroVeg-Checklist (*Festuco hystricis-Ononidetea striatae*: *Erysimo-Jurineetalia bocconei*: *Cystiso spinescentis-Bromion erecti*; Mucina et al. 2016) differ strongly, indicating that a data-based classification of Italian dry grasslands in the supra-national context would be desirable to reach a common solution.

The resulting species-area relationship closely followed the power law $S = c\,A^{z}$ or $\log S = \log c + z \log A$, with S = species richness and A = area (in m²) and c and z estimated function parameters (see Figure). The slope parameter z was relatively high at 0.24, indicating a significant small-scale species turnover. With a richness of 91 vascular plant species in 100 m² and a maximum richness of 70 vascular plant species in 10 m², the plots are quite diverse, albeit at only about 70% of the European maxima in that types of grasslands (Dengler et al. 2016a).

Top: The 100-m² plot IT30 (Photo: S. Burrascano); bottom: one of the two 1-m² subplots (Photo: J. Dengler).

Header data

	IT30NE	IT30SW
Aspect (°)	150	120
Slope (°)	14	24
Max. vegetation height (m)	0.85	0.70
Vegetation total (%)	95	90
Tree layer (%)	0	0
Shrub layer (%)	0	0
Herb layer (%)	95	90
Cryptogam layer (%)	1	2
Litter (%)	20	50
Dead wood (%)	0	0
Stones and rocks (%)	0.5	0.2
Gravel (%)	0	3.8
Fine soil (%)	99.5	96



The species-area relationship of the mean richness data of vascular plants in double-log space.

Vegetation relevés (Plant nomenclature is according to Bartolucci et al. 2018; cover values for 10-m² plots are in %)

Plot ID	IT30NE	IT30NE	IT30NE	IT30NE	IT30NE	IT30NE	IT30SW	IT30SW	IT30SW	IT30SW	IT30SW	IT30SW	IT30x
Area [m²]	**0.0001**	**0.001**	**0.01**	**0.1**	**1**	**10**	**0.0001**	**0.001**	**0.01**	**0.1**	**1**	**10**	**100**
log (Area)	-4.0	-3.0	-2.0	-1.0	0.0	1.0	-4.0	-3.0	-2.0	-1.0	0.0	1.0	2.0
Species richness (vascular plants)	3	6	16	27	50	70	4	6	15	21	43	54	91
Agyrolobium zanonii subsp. *zanonii*	.	.	.	.	.	.	.	.	.	.	x	0.01	x
Anthyllis vulneraria subsp. *rubriflora*	.	.	.	.	x	2	.	.	.	.	x	0.1	x
Arenaria serpyllifolia subsp. *serpyllifolia*	.	.	.	x	x	0.1	.	.	.	.	x	0.1	x
Asperula aristata s.l.	.	.	.	.	.	0.01	.	.	.	.	x	0.1	x
Asperula purpurea	.	.	x	x	x	4	.	.	.	.	x	0.1	x
Astragalus monspessulanus subsp. *monspessulanus*	.	.	.	.	.	2	.	.	.	.	x	1	x
Brachypodium rupestre	.	.	.	.	.	1	.	x	x	x	x	5	x
Bromopsis erecta s.l.	x	x	x	x	x	50	.	.	x	x	x	60	x
Bupleurum baldense	.	.	.	x	x	0.5	.	.	.	.	x	0.5	x
Carex distachya	.	.	.	.	.	.	.	.	.	.	x	0.3	x
Carex flacca subsp. *erythrostachys*	.	.	.	.	.	.	.	.	.	.	.	.	x
Carex halleriana	.	.	.	.	x	5	.	.	.	.	x	0.1	x
Carlina acanthifolia subsp. *acanthifolia*	.	.	.	.	.	1	.	.	.	.	.	.	x
Catapodium rigidum subsp. *rigidum*	.	.	.	.	.	0.01	.	.	.	.	.	.	x
Centaurea ambigua subsp. *nigra*	.	.	.	x	x	0.5	.	.	.	.	.	0.1	x
Cerastium tomentosum	.	.	x	x	x	5	.	.	.	.	x	0.1	x
Coronilla minima subsp. *minima*	.	.	.	.	x	30	.	.	.	.	x	15	x
Coronilla scorpioides	.	.	.	x	x	2	.	.	.	.	x	0.5	x
Crepis lacera subsp. *lacera*	.	.	.	.	.	.	.	.	.	.	.	.	x
Cuscuta sp.	.	.	.	.	x	0.01	.	.	.	.	.	.	x
Cynosurus cristatus	.	.	.	.	x	2	.	.	.	.	.	.	x
Cynosurus echinatus	.	.	.	.	.	0.5	.	.	.	.	x	0.5	x
Dactylis glomerata subsp. *hispanica*	.	.	x	x	x	3	.	.	.	x	x	2	x
Daucus carota subsp. *carota*	.	.	.	.	.	.	.	.	.	.	.	.	x
Eryngium amethystinum	.	.	x	x	x	2	.	.	.	.	x	0.5	x
Euphrasia stricta	.	x	x	x	x	4	x	x	x	x	x	5	x
Festuca circummediterranea	x	x	x	x	x	15	.	.	x	x	x	15	x
Galium corrudifolium	.	.	.	.	x	2	.	.	.	.	.	0.1	x
Globularia bisnagarica	.	.	.	.	x	3	.	.	.	.	x	0.01	x
Gymnadenia conopsea	.	.	.	.	.	.	.	.	.	.	.	.	x
Helianthemum apenninum subsp. *apenninum*	.	.	.	.	x	0.5	.	.	.	.	.	0.05	x
Helianthemum nummularium subsp. *glabrum*	.	.	.	.	.	0.3	.	.	x	x	x	5	x
Helianthemum oelandicum	.	.	.	.	.	0.2	.	.	.	.	.	.	x
Helianthemum salicifolium	.	.	.	.	.	0.1	.	.	.	.	.	.	x
Helictochloa praetutiana subsp. *praetutiana*	.	.	x	x	x	2	x	x	x	x	x	2	x
Hippocrepis comosa subsp. *comosa*	.	x	x	x	x	1	x	x	x	x	x	1	x
Hypericum perforatum s.l.	.	.	.	.	x	0.5	.	.	.	.	.	0.05	x
Juniperus deltoides	.	.	.	.	.	.	.	.	.	.	.	.	x
Knautia calycina	.	.	.	.	.	0.02	.	.	.	.	.	.	x
Koeleria splendens	.	.	.	.	.	.	.	.	x	x	x	1	x
Leontodon crispus	.	.	.	.	.	0.01	.	.	.	.	x	0.1	x
Leontodon hispidus s.l.	.	.	.	.	.	.	.	.	.	.	x	1	x
Linum strictum	.	.	.	.	.	.	.	.	.	.	x	0.1	x
Linum tenuifolium	.	.	x	x	x	0.2	.	.	x	x	x	0.5	x
Lolium arundinaceum subsp. *arundinaceum*	.	.	.	.	x	0.5	.	.	.	.	.	.	x
Lolium perenne	.	.	.	.	.	.	.	.	.	.	.	.	x
Lomelosia crenata subsp. *pseudisetensis*	.	.	.	.	.	0.1	x	x	x	x	x	1	x
Lotus corniculatus subsp. *corniculatus*	.	.	.	x	x	1	.	.	x	x	x	0.5	x
Lotus herbaceus	.	.	.	.	.	0.2	.	.	.	.	.	0.01	x
Medicago lupulina	.	.	.	.	x	0.2	.	.	.	.	.	.	x
Muscari neglectum	.	.	.	.	x	0.01	.	.	.	.	.	.	x
Odontites luteus subsp. *luteus*	.	.	x	x	x	0.5	.	.	.	.	.	.	x
Onobrychis alba subsp. *alba*	.	.	x	x	x	5	.	.	.	.	x	10	x
Ononis reclinata	.	.	.	x	x	0.2	.	.	.	.	.	.	x
Ononis spinosa s.l.	.	.	.	.	x	0.8	.	.	x	x	x	0.1	x

Plot ID	IT30NE	IT30NE	IT30NE	IT30NE	IT30NE	IT30NE	IT30SW	IT30SW	IT30SW	IT30SW	IT30SW	IT30SW	IT30x
Ononis viscosa subsp. *brevifolia*	.	.	.	.	.	0.01	.	.	.	.	.	.	x
Ophrys dinarica	.	.	.	.	.	.	.	.	.	.	.	.	x
Ophrys lucana	.	.	.	.	.	0.01	.	.	.	.	.	0.001	x
Orobanche sp.	.	.	.	.	.	.	.	.	.	.	.	.	x
Pentanema montanum	.	.	.	.	.	.	.	.	.	.	.	0.01	x
Petrorhagia prolifera	.	.	x	x	x	0.1	.	.	.	.	.	.	x
Petrorhagia saxifraga s.l.	.	.	x	x	x	0.1	.	.	.	.	.	.	x
Phleum hirsutum subsp. *ambiguum*	.	.	.	.	x	1	.	.	.	.	.	0.1	x
Pilosella officinarum	.	.	.	.	x	0.3	.	.	.	.	x	1	x
Pinus nigra subsp. nigra	.	.	.	.	.	.	.	.	.	.	.	.	x
Plantago lanceolata	.	.	.	x	x	1	.	.	x	x	x	0.1	x
Poa compressa	.	.	.	.	.	0.2	.	.	.	.	.	.	x
Polygala nicaeensis s.l.	.	x	x	x	x	1.5	.	.	.	x	x	5	x
Poterium sanguisorba s.l.	.	.	.	x	x	1	.	x	x	x	x	1	x
Prunella laciniata	.	.	.	.	x	1	.	.	.	.	.	.	x
Ranunculus bulbosus	.	.	.	.	.	.	.	.	.	.	.	.	x
Rhinanthus minor	.	.	.	.	.	0.5	.	.	.	.	.	.	x
Sabulina attica	.	.	.	.	x	0.01	.	.	.	.	.	.	x
Scabiosa holosericea	.	.	.	x	x	1	.	.	.	x	x	0.001	x
Seseli montanum subsp. *montanum*	.	.	.	.	.	0.1	.	.	.	.	.	.	x
Sesleria nitida subsp. *nitida*	.	.	.	.	.	3	.	.	.	.	.	.	x
Silene notarisii	.	.	.	.	.	.	.	.	x	x	x	0.1	x
Stachys italica	.	.	.	.	.	.	.	.	.	.	.	.	x
Taraxacum sect. *Erythrosperma*	.	.	.	x	x	0.1	.	.	.	x	x	0.1	x
Teucrium chamaedrys subsp. *chamaedrys*	.	.	.	x	x	1	.	.	.	.	.	0.1	x
Thymus oenipontanus	.	.	.	.	x	0.5	.	.	.	.	.	5	x
Thymus pulegioides	.	.	.	.	x	0.1	.	.	.	.	.	5	x
Trifolium campestre	.	.	.	.	x	0.3	.	.	.	x	x	0.5	x
Trifolium hybridum subsp. *hybridum*	.	.	.	.	x	0.2	.	.	.	.	.	.	x
Trifolium ligusticum	x	x	x	x	x	3	.	.	.	.	.	.	x
Trifolium ochroleucon	.	.	.	.	.	.	.	.	.	.	x	1	x
Trifolium pratense subsp. *pratense*	.	.	.	.	.	.	.	.	.	x	x	1	x
Trifolium scabrum	.	.	.	.	x	0.5	.	.	.	.	x	0.5	x
Trifolium stellatum	.	.	.	.	.	0.2	.	.	.	.	.	.	x
Trigonella sulcata	.	.	.	.	x	0.1	.	.	.	.	.	.	x
Trinia delachampii	.	.	.	.	.	.	.	.	.	.	.	.	x

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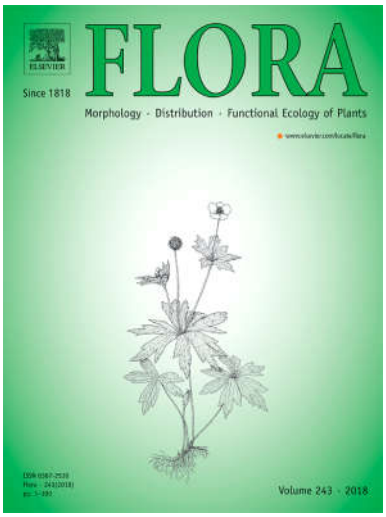
EDGG Publication

Announcement of a Special Issue organized in the journal *FLORA* in collaboration with EDGG on *Ecology and Evolution of Steppe Biodiversity*

Guest editors
Péter Török (University of Debrecen, Hungary),
Barbara Neuffer (University of Osnabrück, Germany)
Karl Georg Bernhardt (Universität für Bodenkultur, Austria)
Karsten Wesche (Senckenberg Museum of Natural History, Germany)

Palaearctic steppes are the largest continuous terrestrial natural habitats of the world with high biodiversity at multiple scales. Steppe grasslands and adjacent forest steppes are key elements of natural vegetation in vast landscapes from Central and Eastern Europe to Northern China, spanning across the whole temperate zone of Eurasia and similar habitats in North Africa, Anatolia, and Iran. Steppes offer globally unique options for studies on biological patterns in a relatively homogeneous, yet spatially most extensive biome. Examples include evolution of biodiversity on a continental scale, effects of large climatic gradients on species performance, or ecosystem functioning under extreme and very variable conditions. Because typical steppes are characterized by fertile soils, they are subjected to large-scale degradation and area loss by intensive crop production or other forms of overuse especially in the Western part of their distribution zone. Conservation and restoration of steppe biodiversity have been identified as key priority for research and practice. Effective and sustainable steppe management does, however, depend on sound knowledge of the ecological properties and background mechanisms which are responsible for the sustainment of crucial ecological functions and services in pristine steppes. In this special issue we aim to give high emphasis on the most recent and novel research in steppe biodiversity and ecology. We thus invite studies dealing with any aspects of plant community ecology, plant traits, fire ecology, plant phenology, plant ecophysiology, plant reproductive biology, population genetics, ecological interactions, conservation, plant chorology and ecosystem functioning related to steppe ecosystems.



Please submit your abstracts (up to 300 words and one page with authors and affiliations) by October 31, 2018 to *Peter Török* (molinia@gmail.com) for evaluation.

Steppe landscape in Khakassia, Siberia. Photo: J. Dengler.

EDGG Publication

Extended deadline for EDGG Special Feature in *Hacquetia* 2019: Fauna, flora, vegetation and conservation of Palaearctic natural and semi-natural grasslands

Guest Editor Team:

Orsolya Valkó (chair; Hungary), Stephen Venn (Finland), Idoia Biurrun (Spain), Sabina Burrascano (Italy), Salza Palpurina (Bulgaria), Rocco Labadessa (Italy) and Atushi Ushimaru (Japan)

This is the second call for the submission of manuscripts for the EDGG-edited Special Feature in *Hacquetia* 2019. We welcome manuscripts about natural and semi-natural grasslands, on all taxa and from any region in the Palaearctic realm (Europe; West, Central and North Asia; North Africa).

Hacquetia (http://www.degruyter.com/view/j/hacq) is the international peer-reviewed journal of the Biological Branch of the Slovenian Academy of Sciences. It appears in two issues per year, both in print and online. Through offering **longer articles, open access publication without fees and free reproduction of colour figures**, it is a very attractive publication venue. *Hacquetia* is indexed in the Scopus and BIOSIS literature databases, and it is likely to be included in the Web of Science in the near future. The 2017 CiteScore of the Scopus database (equivalent to the Impact Factor in the Web of Science) was 0.81.

This Special Feature will be the 5th EDGG-edited Special Feature in *Hacquetia*, following the four successful issues in 2014/1, 2015/1, 2016/2 and 2018/1. This Special Feature will appear as the second issue of 2019, to be published approximately in July 2019, with about 150–250 pages reserved for our articles. It will also contain a report on the EDGG activities of the previous year.

Procedure and deadlines: The **deadline for full-text submission has been extended to 31 October 2018**. Manuscripts will undergo the normal peer-review process. Later submissions are possible after prior consultation with the Chair of the Guest Editors (see below), but the later you submit, the lower is the chance to have the paper included in the 2019 Special Feature. In cases of too late acceptance, your paper will be published online first and go to our 2020 Special Feature in *Hacquetia*. If you are interested in contributing a manuscript for the Special Issue, please contact the Chair of the Guest Editors (see below) and submit your manuscript to her. Author guidelines can be found at the journal homepage: http://www.degruyter.com/view/j/hacq.

Contact for questions and submission of manuscripts (Chair of the Guest Editors): *Orsolya Valkó* (valkoorsi@gmail.com)

***Carlina onopordifolia* in the "Żurawce" Natura 2000 site, SE Poland. Photo: P. Chmielewski.**

EDGG Publication

Extended deadline for the 13th EDGG-edited Special Feature in *Tuexenia*: Restoration, monitoring, conservation and phytosociology of semi-natural and natural grasslands in Central Europe

Guest Editor Team:

Balázs Deák (chair; Hungary), Thomas Becker (Germany), Steffen Boch (Switzerland), Jürgen Dengler (Switzerland), Viktoria Wagner (Canada)

This is the second call for the submission of manuscripts for the EDGG-edited Special Feature in *Tuexenia* 2019. The Special Feature is open to all EDGG members and particularly welcomes contributions that were presented on the Eurasian Grassland Conference and the EDGG Field Workshop of 2018. If you want to contribute, you are requested to send an abstract to Balázs Deák till the extended deadline: 31 October 2018. Based on these abstracts, we will decide which papers to invite. If you have published in previous EDGG Special Features in *Tuexenia*, you could also directly submit the full paper without previous abstract evaluation, but you risk that then all "slots" are already filled. First-time authors in the *Tuexenia* Special Feature need to send an abstract first in any case.

As usual, contributions on flora and vegetation of Central European grasslands as well as their conservation and restoration are welcome. Central Europe is defined following Wikipedia (https://en.wikipedia.org/wiki/Central_Europe) as consisting of Germany, Switzerland, Liechtenstein, Austria, Slovenia, Hungary, Slovakia, Czech Republic and Poland. Contributions of adjacent regions are also welcome if they make a clear connection to Central Europe, at least in the discussion part. *Tuexenia* is a geobotanical journal, thus the focus is on flora and vegetation. However, complex studies involving both vegetation and animals are also highly welcome.

All manuscripts are subject to peer review and **should be submitted preferentially until 15 November 2018** and then have a good chance of inclusion in the next Special Feature expected for July 2019. Later submission is only possible after prior consultation with the Chair of Guest Editors (Balázs Deák). The earlier you submit, the bigger is the chance that your paper will be accepted in time for the 2019 Special Feature. Those manuscripts that are accepted too late or at a point of time when already all "slots" are filled will be transferred to the 2020 Special Feature.

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

- Indexed in the Web of Science and Scopus
- 2017 Impact Factor (1.125), CiteScore (1.39)
- Articles published in the EDGG Special Features are, on average, more visible and more cited than regular articles in *Tuexenia*, which is shown by the 2017 values of Impact Factor (1.727) and CiteScore (1.82) calculated only for the Special Feature articles
- Full colour and open access
- No page charges
- Competent and sympathetic Guest Editor Team

Balázs Deák debalazs@gmail.com

***Veratrum nigrum* in the Natura 2000 "Kąty" site, SE Poland. Photo: P. Chmielewski.**

Scientific Report

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First application of EDGG "normal plots" in grasslands of European Russia

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Palaearctic Grasslands 38 (2018): 28-33

Abstract: We present the first results of the implementation of 10-m² plots for sampling grassland biodiversity in European Russia. We tested the method in two contrasting model sites: Valdaiskiy National Park as a Candidate Emerald Site (Novgorodskaya Oblast') and the lands of HC-Yug Ltd. agricultural enterprise (Tulskaya Oblast'). Four 10-m² plots were sampled in the first site and two in the second site. According to their species composition, the Valdai meadows clearly belong to the *Molinio-Arrhenatheretea* as evidenced by numerous diagnostic species of the class and the alliance *Cynosurion cristati*. The plots of the second site consist of a restored hayfield and pasture. Native plant species had lower cover but higher richness on the pasture compared to the hayfield. We conclude that the 10-m² plot size is appropriate to identify the essential proportion of plant species composition in a site. It is advisable to consider separately native and alien species when analysing species richness. The studied meadows on the edge of the Great Eurasian Natural Tract (Valdaiskiy National Park) are not impacted by alien species in contrast to the meadows surrounded by developed landscapes in Tulskaya Oblast'.

Keywords: grassland; hayfield; meadow restoration; *Molinio-Arrhenatheretea*; Novgorodskaya Oblast'; pasture; plant diversity; Russia; Tul'skaya Oblast'; Valdaiskiy National Park; vegetation plot.

Nomenclature: Cherepanov (1995) for vascular plants, Ermakov (2012) for plant communities, EUNIS for habitat types.

Abbreviations: EDGG = Eurasian Dry Grassland Group; GEANT = the Great Eurasian Natural Tract; HCY = HC-Yug Ltd Cattle Farm; VNP = Valdaiskiy National Park.

Submitted: 11 March 2018; first decision 27 April 2018; accepted 21 August 2018

Scientific Editors: Idoia Biurrun and Jürgen Dengler

Linguistic Editor: Laura M.E. Sutcliffe

Introduction

One of the main activities of the Eurasian Dry Grassland Group (EDGG) is the study of grasslands in various regions of Palaearctic (e.g. Biurrun et al. 2014; Polyakova et al. 2016; Aćić et al. 2017). Doing this, EDGG pays particular attention to the sampling of biodiversity with standardised methods. In June 2017 Elena Belonovskaya, Nikolay Sobolev and Nadezda Tsarevskaya took part in the 10th EDGG Field Workshop in the Central Apennines (Filibeck et al. 2018) with the main aim to learn the standard EDGG protocol of sampling grassland biodiversity.

This method was already applied in Russia to sample the biodiversity of dry grasslands in Khakassia (Janišová et al. 2013; Polyakova et al. 2016). We expand the use of this method in European Russia. In the future we expect to collect more data with such a standard protocol to achieve comparable results by relatively simple methods, especially when studying extra-large territories as for example the Great Eurasian Natural Tract (GEANT) from Fennoscandia to Far East (Sobolev & Rousseau 1998).

At present, the decline in the level of agricultural influence has caused a negative trend for biodiversity: many pastures, important for biodiversity conservation, are overgrown with secondary low-productive forests with species-poor flora and fauna. This makes grassland conservation measures important for maintaining the old agricultural forest-meadow-field landscape in the forest zone. These measures should benefit both the inhabitants of the local villages and the habitats of the protected area (Belonovskaya et al. 2016).

The purpose of this paper is to present preliminary results of our attempts to implement the 10-m² "normal plots" of EDGG (Dengler et al. 2016) in European Russia.

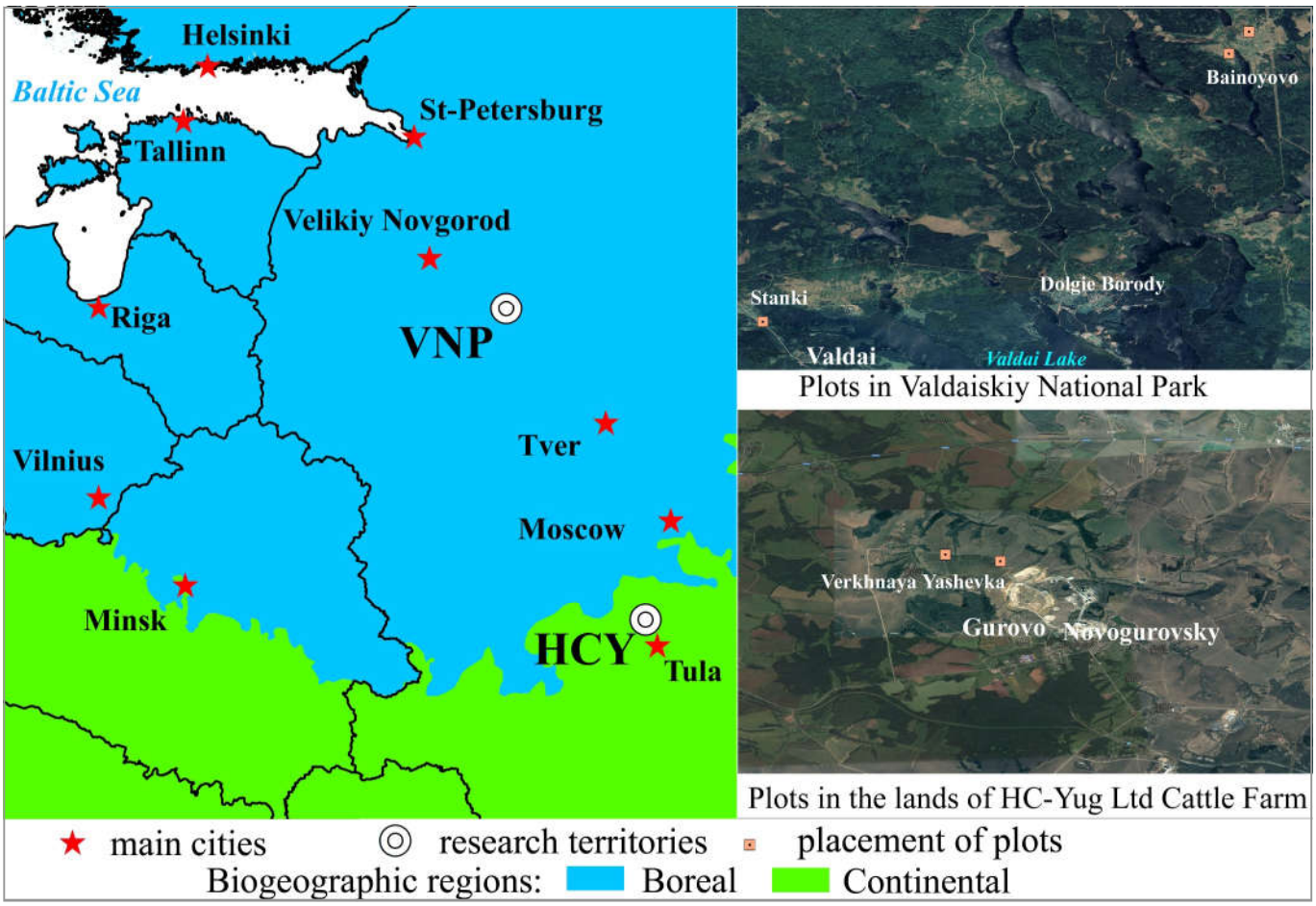

Fig. 1. Location of the study areas in European Russia (left) and of the plots within the areas (right).

Study areas

Our study was conducted in two contrasting areas of European Russia: 1) Valdaiskiy National Park (VNP) in Novgorodskaya Oblast', a Candidate Emerald Site near the southern edge of GEANT; 2) HC-Yug Ltd. Cattle Farm (HCY) in Tul'skaya Oblast', meadows under restoration after ploughing (Fig. 1).

VNP (57.887° N; 33.160° E; Novgorodskaya Oblast') is a Candidate Emerald Site (RU5300062) situated in the centre of the Valdai Upland, where we studied secondary meadows. The Valdai Upland is located at the edge of southern taiga and broadleaved coniferous forests (i.e. mixed forests with broadleaved and coniferous trees) (Gribova et al. 1980). It belongs to the Eastern European end moraine landscape with numerous lakes (Andreev et al. 2002). The high post-glaciation landscape diversity has significant influence on the diversity of plants and habitats and their distribution. Later anthropogenic deforestation impacted the landscape: centuries of land use shaped the mosaic of the vegetation cover, common for the old agricultural landscapes. Small patches of former arable lands, various types of grasslands, bogs, primary and secondary forests form the high diversity of habitats (Belonovskaya et al. 2014). The secondary meadows on the watersheds and slopes together with the flood plain meadows occupy 15.2% of the territory. For centuries they were used as hayfields and pastures. Long-term low-intensity agricultural use formed a stable floristic composition and structure of the grassland communities, inhabited by many rare and endangered plant and animal species (Belonovskaya et al. 2016). The grasslands of the region belong to the following habitat types of European importance (according to EUNIS classification): E3.4 Moist or wet eutrophic and mesotrophic grassland and E3.5 Moist or wet oligotrophic grassland.

Tulskaya Oblast' is located in the Central Russian Plain, occupying the northeastern part of the Central Russian Upland. The surface of the region is a hollow-wavy plain, intersected by river valleys and ravines. There are also karst forms. **HCY** (54.492° N; 37.304° E) occupies agricultural lands on the southern edge of the mixed forest zone with broadleaved and coniferous. HCY is a subsidiary of HeidelbergCement Group, which owns the site for limestone mining starting around 2025. HCY's task is to ensure the agricultural land use and thus reduce taxes for the mining company. The benefit derived from tax cuts allows us to conduct an experiment to restore meadows in place of arable land by using parts of the site as pastures (48.8 ha) and hayfields (30.3 ha). It is expected that the restoration of a meadow with high biodiversity will increase the quantity and quality of ecosystem services, including creating a rich soil for reclamation of fully exploited quarries, the use of which is completed. If successful, this can be an example

for implementation in new development regions, which include the GEANT. The studied part of the pasture was last ploughed in 2005 and is now used for year-round grazing by cows with an approximate pasture load of 0.5 animal per hectare. The studied hayfield was established in 2014: it has been ploughed and then sown with *Phleum pratense*, *Dactylis glomerata*, *Poa pratensis*, *Lolium perenne*, *Festuca pratensis*, *Festuca rubra*, *Festuca arundinacea*, and together with them, unintentionally, many seeds of *Matricaria inodora*. The latter species one was removed in 2015 as far as possible. Every year the hayfield is mowed once in stages to preserve the fauna.

Methods

We sampled four 10-m^2 plots of *Molinio-Arrhenatheretea* secondary meadows in VNP (Figs. 2–3) and one 10-m^2 plot on the hayfield and other one on part of the cow pasture (Fig. 4) in HCY, using the sampling protocol for EDGG "normal plots" (Dengler et al. 2016). The four plots from VNP are already included in the GrassPlot database (Dengler et al. 2018), while those from HCY will be contributed in the near future.

Results and discussion

An ordered vegetation-plot table is presented in the Table 1.

As evidenced by the prevalence and abundance of diagnostic species, all plots in the VNP clearly belong to the class *Molinio-Arrhenatheretea*, order *Arrhenatheretalia* and the alliance *Cynosurion cristati*. The group of diagnostic species accounts for more than 57% of the species diversity of the meadows. The species of the group are characterized by considerable coverage and frequency. Unfortunately, it is impossible to reveal syntaxa of lower ranks because of the low number of replicates.

On the HCY lands, we can expect a tendency of the development of plant communities belonging to *Molinio-Arrhenatheretea*. Currently, plant species of the both sites belong to differ coenotic groups. In the future both communities can converge by the species composition and eventually one association might form. Species belonging to plant communities of the *Molinio-Arrhenatheretea* were more numerous and abundant in the hayfield. On the other hand, we must bear in mind that the predominating species in the hayfield, *Phleum pratense* and *Poa pratensis*, were sown there in 2014. The invasive *Solidago canadensis* is among the subdominants in the hayfield. The non-native species *Lolium perenne* was not identified in the hayfield two years after sowing. Invasive *Erigeron canadensis* and *E. annuus* predominate in the pasture. One could call this a derivate plant community (Kopecky & Hejny 1974) belonging to *Molinio-Arrhenatheretea*. Native plant species show a lower cover on the pasture than on the hayfield, but on the pasture their number is larger.

Fig. 2. Sampling data near Stanki village, VNP, Novgorodskaya Oblast. Photo: V. Vinogradova.

Fig. 3. Meadow opposite Bainyovo village, VNP, Novgorodskaya Oblast. Photo: E. Belonovskaya.

Communities of class *Molinio-Arrhenatheretea* are widespread in European Russia. Everywhere the variety of syntaxa of lower level is high and specific as demonstrated for Ryazanskaya Oblast' (Southern Nechernozem'e) (Voronov 1984), Republic Bashkotostan (Yamalov 2005; Yamalov & Bayanov 2008), Bryanskaya Oblast' (Bulokhov 2013, 2014), Pskovskaya oblast' (Cherednichenko & Borodulina 2017) Komi Republic (Shushpannikova & Yamalov 2014) and others. In our opinion, the essential characteristic of these communities may be not the numerical richness of syntaxonomic diversity but the presence of invasive species, especially among dominating species. Such analysis may be the issue of our next study.

Traditionally in Russia 100-m² plots are used for sampling geobotanical data. Which plot size is preferable, mostly depends on the research aim. For example, when we com-

Table 1. ***Description of the 10-m² plots in VNP and HCY: coverage (%) of plant species and other data. Diagnostic species of class and alliance indicated with (Cl) and (Al) respectively (according to Ermakov 2012, Mucina et al. 2016). Invasive alien species are in red font.***

Plots	**1**	**2**	**3**	**4**	**5**	**6**
Relevé number	**183**	**184**	**186**	**182**	**1**	**2**
Tree layer (%)	**0**	**0**	**0**	**0.2**	**0**	**0**
Shrub layer (%)	**0**	**0**	**0**	**0.1**	**0**	**0**
Herb layer (%)	**95**	**85**	**95**	**90**	**70**	**60**
Moss layer (%)	**30**	**30**	**5**	**0**	**-**	**-**
Altitude (m a.s.l.)	**201**	**202**	**208**	**221**	**-**	**-**
Aspect (°)	**90**	**90**	**45**	**270**	**-**	**-**
Inclination (°)	**2**	**2**	**1**	**5**	**-**	**-**
Species richness	**38**	**39**	**39**	**31**	**41**	**50**
Class: *Molinio-Arrhenatheretea* (Cl): Order *Arrhenatheretalia*: Alliance *Cynosurion cristati* (Al)						
Dactylis glomerata Cl	35	2	10	10	0.5	0.5
Agrostis tenuis Al	0.1	0.5	1	2	0.1	.
Festuca rubra Cl, Al	0.3	1	8	30	1	.
Phleum pratense Cl, Al	2	6	5	1	30	.
Stellaria graminea Cl	2	2	0.2	1	.	0.1
Rumex acetosella Cl	3	3	0.1	0.5	.	.
Plantago lanceolata Cl	0.3	1	0.4	0.1	.	.
Anthoxanthum odoratum Al	15	25	3	0.5	.	.
Achillea millefolium Cl	7	5	1	0.3	.	.
Galium album Cl	3	1	3	1	.	.
Veronica chamaedrys Cl	0.1	1	0.4	1	.	.
Potentilla argentea Cl	0.1	1	0.4	.	.	0.3
Leontodon hispidus Cl	5	5	.	3	.	.
Poa pratensis Cl	2	0.5	.	.	30	.
Leucanthemum vulgare Cl	2	.	10	0.5	.	1
Taraxacum officinale Cl	.	0.01	1	3	.	1
Centaurea jacea Cl	2	.	6	7	.	.
Campanula patula Cl	.	0.5	0.1	.	.	0.2
Ranunculus acris Cl	.	0.2	0.4	0.5	.	.
Vicia cracca Cl	0.2	0.5	3	.	.	.
Vicia sepium Cl	0.4	.	0.8	2	.	.
Trifolium pratense Cl	.	.	0.4	2	0.4	.
Cirsium arvense Cl	.	.	0.6	.	0.4	0.3
Plantago media Cl	.	0.3	0.1	.	.	.
Briza media Al	.	1	4	.	.	.
Amoria repens Cl, Al	2	5	.	.	.	.
Pimpinella saxifraga Cl	3	2	.	.	.	.
Ranunculus polyanthemus Cl	0.2	1	.	.	.	.
Carum carvi Cl	0.3	.	1	.	.	.
Knautia arvensis Cl	.	0.01	0.1	.	.	.
Amoria hybrida Cl	.	.	0.4	.	0.1	.
Deschampsia cespitosa Cl	.	.	6	.	1	.
Helictotrichon pubescens Cl	.	3	.	.	.	.
Succisa pratensis Cl	.	0.01	.	.	.	.
Centaurea phrygia Cl	.	.	12	.	.	.
Leontodon autumnalis Cl	.	.	6	.	.	.
Anthriscus sylvestris Cl	.	.	1	.	.	.
Ajuga reptans Cl	.	.	0.4	.	.	.
Heracleum sibiricum Cl	.	.	0.1	.	.	.
Clinopodium vulgare Cl	.	.	0.01	.	.	.
Lathyrus pratensis Cl	.	.	.	0.5	.	.
Rhinanthus minor Cl	.	.	.	0.1	.	.
Geranium pratense Cl	.	.	.	0.1	.	.
Carex leporina Cl	.	.	.	0.01	.	.
Rumex crispus Cl	.	.	.	.	2	.
Festuca arundinacea Cl	.	.	.	.	1	.
Festuca pratensis Cl	.	.	.	.	2	.
Alopecurus pratensis Cl	.	.	.	.	0.1	.
Rumex acetosa Cl	.	.	.	.	0.1	.
Bromopsis inermis Cl	.	.	.	.	.	0.5
Plantago major Cl	.	.	.	.	.	0.5
Prunella vulgaris Cl	.	.	.	.	.	0.4
Galium mollugo Cl	.	.	.	.	.	0.3
Stachys palustris Cl	.	.	.	.	.	0.2
Lychnis flos-cuculi Cl	.	.	.	.	.	0.1
Other species						
Alchemilla sp.	0.5	.	0.6	4	.	.
Dianthus deltoides	0.1	0.1	.	0.001	.	.
Hypericum maculatum	1	.	0.6	2	.	.
Equisetum arvense	.	.	0.6	.	0.1	0.3
Euphrasia officinalis	0.7	10	.	.	.	.
Hieracium umbellatum	4	2	.	.	.	.
Solidago virgaurea	1	2	.	.	.	.
Artemisia campestris	.	0.3	0.3	.	.	.
Melampyrum nemorosum	.	.	2	2	.	.
Trifolium medium	.	2	.	3	.	.
Artemisia vulgaris	.	.	.	.	0.5	0.2
Solidago canandensis	.	.	.	.	2	0.2
Cirsium polonicum	.	.	.	.	0.3	0.5
Convolvulus arvensis	.	.	.	.	0.3	0.3
Tripleurospermum inodorum	.	.	.	.	0.3	0.3
Hypericum perforatum	.	.	.	.	0.2	0.4
Tanacetum vulgare	.	.	.	.	0.2	0.3
Campanula rotundifolia	0.3	.	.	.	.	.
Fragaria vesca	0.2	.	.	.	.	.
Medicago falcata	0.1	.	.	.	.	.
Veronica officinalis	0.1	.	.	.	.	.
Myosotis arvensis	0.01	.	.	.	.	.
Pilosella officinarum	.	2	.	.	.	.
Erigeron acris	.	0.1	.	.	.	.
Vicia angustifolia	.	0.01	.	.	.	.
Viola sp.	.	.	0.4	.	.	.
Anthyllis vulneraria	.	.	.	2	.	.
Festuca ovina	.	.	.	2	.	.
Gnaphalium sylvaticum	.	.	.	0.001	.	.
Sonchus arvensis	.	.	.	.	0.3	.
Medicago lupulina	.	.	.	.	0.2	.
Calamagrostis epigejos	.	.	.	.	0.1	.
Thlaspi arvense	.	.	.	.	0.1	.
Erigeron canadensis	.	.	.	.	.	7
Erigeron annuus	.	.	.	.	.	5
Vicia hirsuta	.	.	.	.	.	0.5
Senecio vulgaris	.	.	.	.	.	0.4
Trifolium arvense	.	.	.	.	.	0.3
Vicia tetrasperma	.	.	.	.	.	0.3
Chamaenerion angustifolium	.	.	.		.	0.2
Cerastium holosteoides	.	.	.	.	.	0.2
Cichorium intybus	.	.	.	.	.	0.2
Carduus crispus	.	.	.	.	.	0.1
Myosotis micrantha	.	.	.	.	.	0.1
Cryptogam layer						
Mnium/Plagiomnium sp.	12	10	.	0.01	.	.
Bryum sp. 1	6	.	.	.	.	.
Bryum sp. 2	6	.	.	.	.	.
Bryum sp. 3	6	10	.	.	.	.
Pleurozium schreberi	.	10	.	.	.	.

Locations and dates:

Plot 1 Stanki village, N 58.01610, E 33.21612, 24.07.2017;

Plot 2 Stanki village, N 58.01630, E 33.21655, 24.07.2017;

Plot 3 Bainyovo village N 58.09642 , E 33.3557 , 29.07.2017;

Plot 4 Left side of the Shchegrinka-river valley, N 58.10297, E 33.36168, 23.07.2017;

Plot 5 HCY hayfield, N 54.49552, E 37.29877, 13.07.2017;

Plot 6 HCY pasture N 54.49318, E 37.31563, 14.07.2017.

pare the relevés of the meadow communities in the VNP on the 10-m^2 plots of 2017 with three approximately 100-m^2 plots sampled at the same sites in previous years (Belonovskaya et al. 2016), we found no clear relationship of the species richness in the differently sized plots. In one case species richness was higher in the bigger plot (41 species on the 100-m^2 plot vs. 31 in the 10-m^2 plot in the Shchegrinka-river valley), once nearly the same (38–39 species in the two plots near Stanki village) and once even lower (34 species in the 100-m^2 plot vs. 39 in the 10-m^2 plot near Bainyovo village). The group of diagnostic species was almost complete in the plots of different sizes. Differences between other species composition are difficult to interpret. The unexpected lack of a clear species-area relationship can have different causes, including not exact relocation of the plots, different phenology due to different weather conditions in the two years or less comprehensive sampling in the first year on the bigger plots. So, we can consider that in the most cases for description of vegetation the use of 10-m^2 plots seems to be enough for identifying the syntaxon, to which the community refers, as well as the set of dominating species. Due to the lower amount of time needed to record a smaller plot, 10-m^2 plots seem to be more convenient.

Author contributions

E.B., N.S. and N.T. planned the research; E.B., N.S., N.T., I.S., V.V. and L.V. did the field sampling and made the plot descriptions; E.B. and N.S. wrote the paper.

Acknowledgements

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Fig. 4. The self-restored pasture, HCY. Photo: N. Sobolev.

Photo Story

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The beauty of xerothermic vegetation complexes in Ausserberg (Rhone valley, Switzerland)

Photos and text by Jürgen Dengler

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Ausserberg (46°19'N 7°51'E) is a village in the Swiss Canton of Valais with about 600 inhabitants. Located at an elevation of about 1000 m a.s.l. on the steep south-facing slopes above the Rhone valley, one of the most continental inneralpine dry valleys, it has a pronounced dry climate (600 mm annual precipitation) and hot summers.

This situation led to the development of rather extensive steppic grasslands with their often rare and sometimes even endemic flora and fauna. These grasslands are embedded into a matrix of other elements of xerothermic vegetation complexes, which makes the slopes of this village overall very species rich and creates a beautiful landscape.

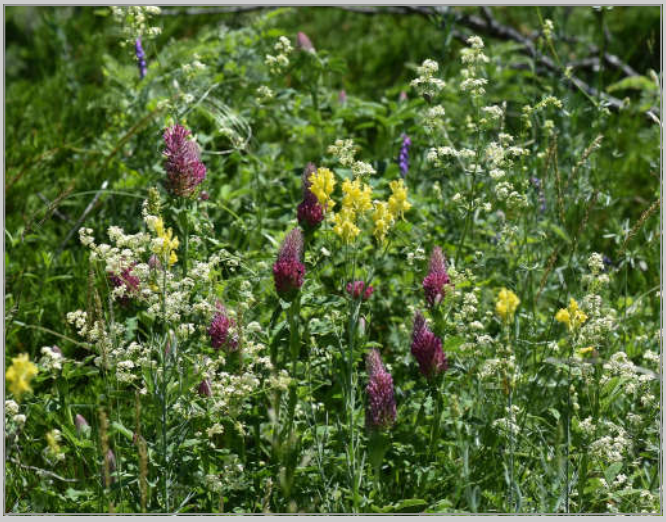
The special physical geographical situation is complemented by a long cultural history. First mentioned in 1378, the village was reachable via mule track only for a long time. Only in the early 20th century it got a railway station at the newly built Lötschberg line and even later a road to Visp in the Rhone valley. This relative isolation contributed to the conservation of typical elements of the cultural landscape of Valais, including the traditional stone houses and the *Suonen*, water channels that transport water over many kilometres from side valleys to irrigate the meadows.

Location of Ausserberg in Switzerland and in the Canton of Valais (copyright Wikipedia).

Centre of the village (the so-called Trogdorf, left) and a Suone (right).




The rocky steppes feature among others *Stipa eriocaulis, Anthericum liliago* and *Centaurea valesiaca.*




Colourful forest-edge communities of the *Geranion sanguinei* with display of *Trifolium rubens*, *Linaria angustissima* and *Galium lucidum* (left) and *Geranium sanguineum* and *Vicia cracca* subsp. *incana* (right).

The xero-thermophilous pine forests host a rich herb layer with rare plants such as *Astragalus exscapus* (left) and *Cephalanthera rubra* (right).

Semi-dry sub-continental grasslands (*Cirsio-Brachypodion*) as well as *Juniperus sabina* shrublands also form part of the vegetation complex…

… as do man-made stone walls (left) and natural rocky outcrops, here with *Sempervivum arachnoideum* (right).

Also the xerothermic insect fauna is extraordinarily species rich, including *Pyrgus carthami*, *Arcyptera fusca*, *Mylabris variabilis*, *Melanargia galathea*, *Hyles euphorbiae* and *Graphosoma lineatum*.

Photo Competition

Best Shots on "Animal-plant interactions"!

Here the three winners of the 1st EDGG Photo Competition!

1st place

***Mantis religiosa* on *Calluna vulgaris* in the "Doliny Labunki i Topornicy" Natura 2000 site (Southeast Poland). Piotr Chmielewski.**

Technical details:
Camera: Canon EOS 5D Mark II
Lens: Sigma 105mm f/2.8 EX DG Macro
Exposure and ISO: 800s at f5.6, ISO 400
Taken with mini-tripod Manfrotto PIXI EVO

Mantis religiosa *is a species that has been rapidly spreading in Poland during the last few years. If I found one in the Zamość area, let's say 10 years ago, that would make a great material for a zoological note or even an article, but right now this species is found basically everywhere. I sometimes find it sitting on buildings on my way to work or even in my garden in Tomaszow Lubelski. Nevertheless, I find this species very beautiful and never miss a photo opportunity when I come across it. The green colour of the praying mantis goes especially well with the mauve colour of* Calluna vulgaris *flowers.*

Piotr Chmielewski
pchmielewski4@wp.pl

2nd place

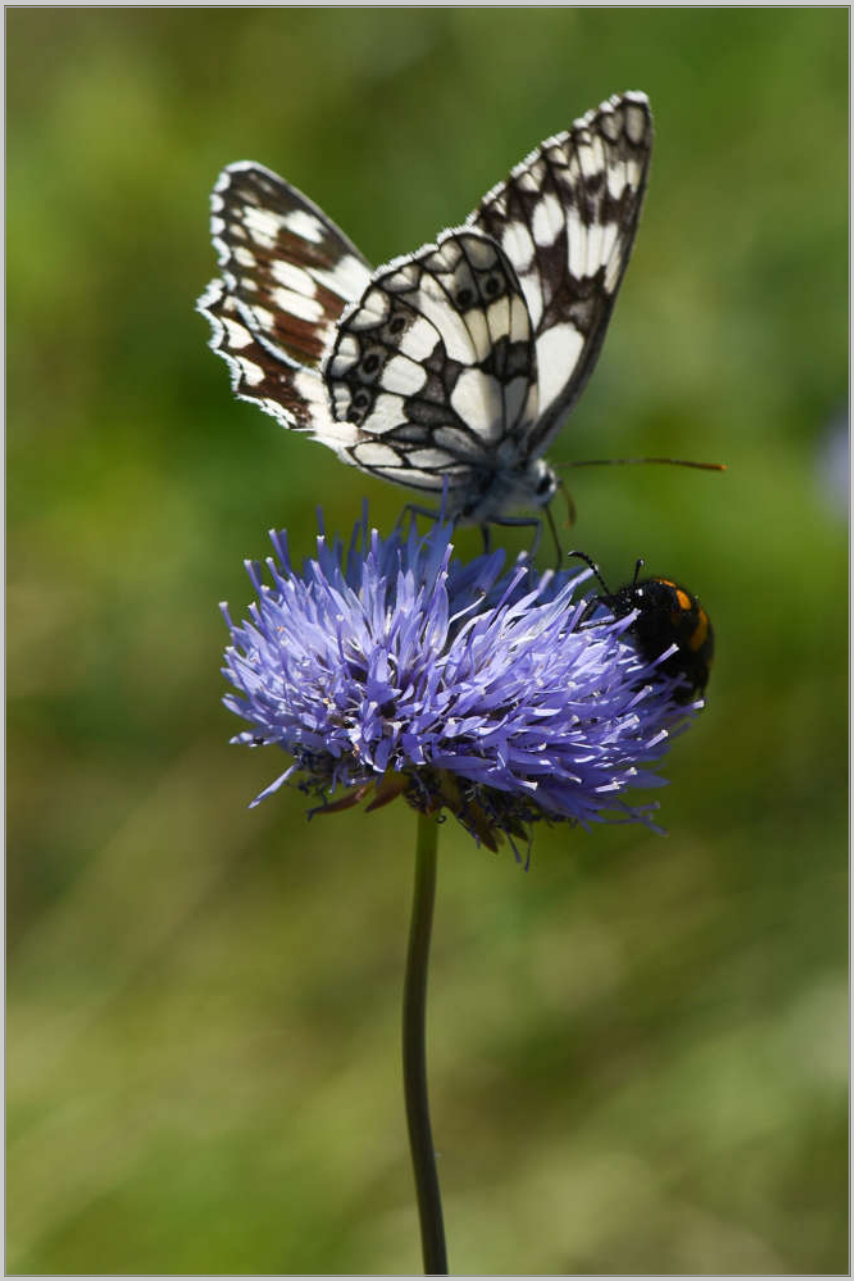
Busy green spider in a semi-dry hay meadow near Marin, Virgen (Osttirol, Austria), 7 July 2018. Monika Janišová.

Technical details:
Camera: Olympus digital camera, OM-D, E-M5MarkII
Lens: Olympus M. 12-40 mm, F2.8
Exposure and ISO: 1/320s at f2.8, ISO 200
Taken without flash and tripod

This spider is not sleeping. Either is he making evening exercises. He is building his web on a stalk of Briza media*. I think he likes its inflorescence as he feels very inconspicuous there, and safe. Because his belly resembles the spikelets of* Briza*. Or he can catch a lot of delicious flies there.*
I do not know why, but I like making shots of animals very much. Even more than making shots of plants.
Maybe because the animals move and one has to watch for the proper moment. For plants one has to wait for half a day until the bud becomes a flower. But for insects, you can have dozens of pictures in a single minute, and each of them is different. I made 18 shots of this spider within 2.5 minutes. He was really dancing in front of my eyes for the whole time. Then I selected the shot No 5 as the best. But also the others are nice, showing how busy he was, and how skilled he is in web building.
For these 2.5 minutes I stopped making a relevé during our EDGG Field Workshop in Austria. I made several of such sampling interruptions as the grassland sampled was so beautiful, so diverse, and so full of animals, I could not help myself. In fact I made 152 shots in this single plot. That's why the sampling took us almost three hours (and we were late for the dinner). And it was raining shortly, and then a rainbow appeared.
I enjoyed this evening very much!

Monika Janišová
monika.janisova@gmail.com

3rd place



***Melanargia galathea* and *Mylabris variabilis* on *Jasione montana* in a steppe grassland in Ausserberg (Valais, Switzerland), 20 June 2018. Jürgen Dengler**.

Technical details:
Camera: Nikon D7200
Lens: Nikon AF-S Micor Nikkor 105 mm / 1: 2.8 G ED
Exposure: 1/200s at f11
Taken without flash and tripod

The nectar-eating butterfly Melanargia galathea *and the pollen-eating beetle* Mylabris variabilis *meet on the inflorescense of* Jasione montana *in a steppe grassland in Ausserberg.*

Jürgen Dengler
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Book Review

DOI: 10.21570/EDGG.PG.38 42-43

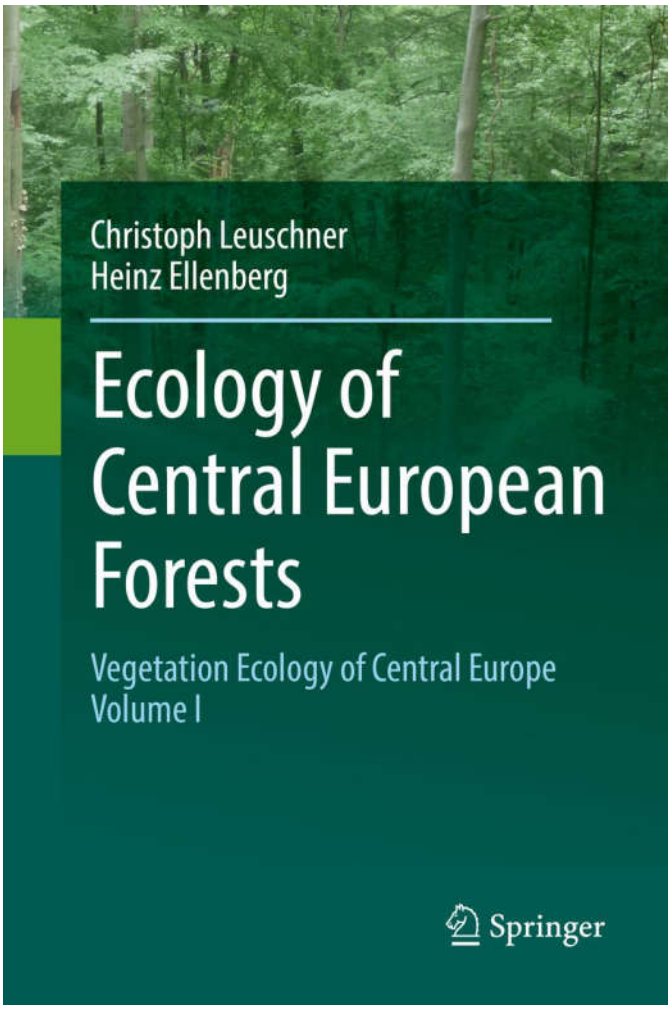
Goldmine for plant and vegetation ecology

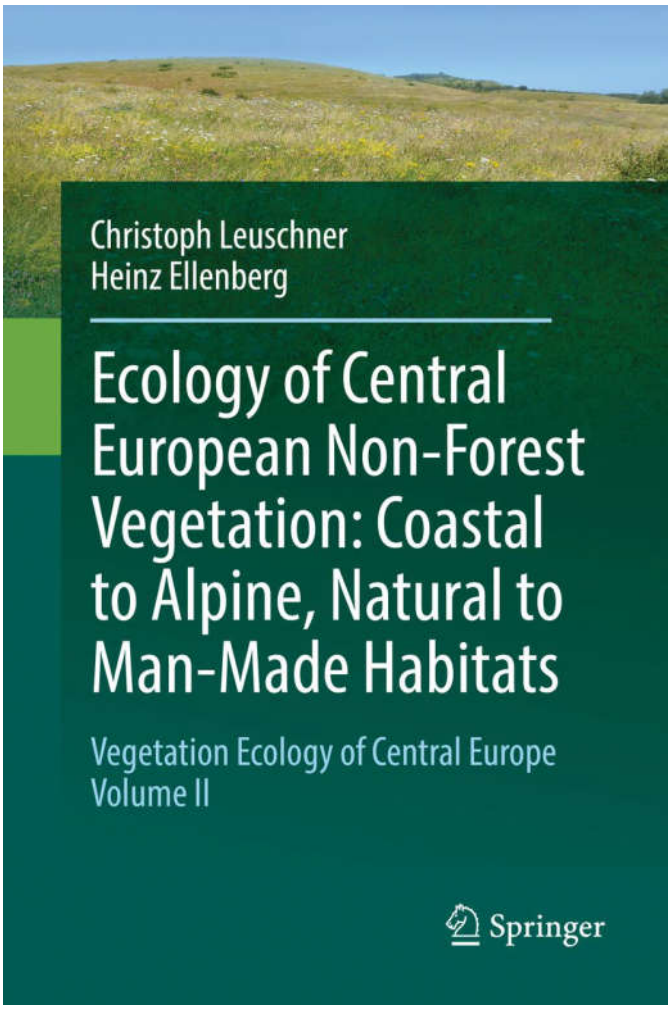
Leuschner, C. & Ellenberg, H. 2017. Vegetation Ecology of Central Europe (2 volumes): I. Ecology of Central European Forests; II. Ecology of Central European Non-Forest Vegetation: Coastal to Alpine, Natural to Man-Made Habitats. Springer Nature, Heidelberg. Hardcover, Vol. I: 219.99 €, Vol. II.: 279.99 €. ISBN 978-3-319-50710-1 (2-volume set).

Central-European vegetation is extremely diverse at multiple spatial scales, so it is no big surprise – especially to vegetation ecologists – that the syntaxonomical viewpoint, which includes within its ranks so many eminent vegetation scientist from J. Braun-Blanquet, R. Tüxen, to R. Soó was established there (see also Braun-Blaquet 1964 or Dierschke 1994). Many other schools of vegetation science – some founded at the same time or even bit earlier – were established around the world, often with different concepts, viewpoints and methods (Hagen 2010), but all vegetation scientists agree that patterns and processes and the link between them are strongly influenced by the community in question (Watt 1947). This view is clearly one of the central concepts of this handbook by Leuschner and Ellenberg.

It is very hard or even impossible to review such a work in a few dozen sentences, as we are talking about a text of more than 1,500 pages, with an extensive literature of more than 5,500 references.

The present English edition is based on the 6th German edition of the classical textbook of Heinz Ellenberg, first published as "Vegetation Mitteleuropas mit den Alpen" in 1963. It is not a simple translation; instead for the English edition the literature was extended with about 400 new and relevant citations and the text reshaped with the inevitable contribution and help of Laura Sutcliffe, who acted not only as translator but also as the scientific and linguistic editor of the book. Given that the German-speaking literature of vegetation ecology, strongly influenced by the





Braun-Blanquet school, developed somewhat independently from Anglo-Saxon vegetation ecology, it was no small task to harmonise and unify the terminology and to shape the text accordingly as part of the task of translation.

The work is in two volumes: the first volume deals with forest vegetation, the second rather thicker volume with open habitats including urban areas. In the first section, consisting of the first two chapters of the first volume, the authors provide a physio-geographic delineation of the work, providing essential background information on the development of the natural environment, introducing the abiotic background of the vegetation and the life forms and growth types of Central European plants. In the second part they evaluate the role of the developing human population on vegetation development and history.

The third part of the book – its most voluminous – introduces the general ecology of forest habitats in Central Europe. These seven chapters provide a thoroughgoing exposition of the forest and shrub formations of Central Europe. The first volume closes with a syntaxonomic overview of forest and scrub formations.

The second volume continues with five chapters in the same vein, starting with natural and near-natural formations: first salt affected habitats, then open sand vegetation and mires, followed by freshwater habitats and the vegetation of the alpine and nival belts. Then come heathlands and most of the grassland formations, which are included in this second part of the volume since they are largely created and/or maintained by regular human influence in a form of livestock grazing or mowing in this region (Dengler et al. 2014). Because of very specific circumstances of their development, the vegetation of heavy-metal-rich soils is described in a separate chapter. The last habitats to be described are those of heavily disturbed ruderal and man-made urban vegetation. As with the first book, this volume also ends with a syntaxonomic overview, this time of non-forest vegetation types.

I have to mention that the regional coverage of the handbook is limited to the territory of Germany, Poland, the Netherlands, Belgium, Luxembourg, Switzerland, Austria, Czech Republic and Slovakia; large areas of the eastern part of Central Europe e.g. most of the Pannonian basin, are not considered in the book. I hope the editors could consider this in a future edition. The book would benefit from the inclusion of the substantial volume of recent published work from that region, especially so in the sections dealing with salt or sand vegetation, but also those on xeric oak forests and forest steppes (for the latter see for example the very recent review of Erdős et al. 2018).

To sum up, for me, these two volumes are not just a handbook on the ecology of Central European vegetation but a goldmine for vegetation ecological research, which helps to identify gaps in knowledge and ideas for further research. In spite of the book being rather expensive, it is necessary to have it, at least on the virtual bookshelf of a vegetation ecologist.

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Methodology, classification, databases

Dengler, J., Wagner, V., Dembicz, I., García-Mijangos, I., Naqinezhad, A., Boch, S., Chiarucci, A., Conradi, T., Filibeck, G., (…) & Biurrun, I. 2018. GrassPlot – a database of multi-scale plant diversity in Palaearctic grasslands. *Phytocoenologia* 48: 331–347.

Biodiversity

Dengler, J. & Tischew, S. 2018. Grasslands of Western and Northern Europe – between intensification and abandonment. In: Squires, V.R., Dengler, J., Feng, H. & Hua, L. (eds.) *Grasslands of the world: diversity, management and conservation*, pp. 27–63. CRC Press, Boca Raton, US.

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Forthcoming Events

9th Biennial Conference of the International Biogeography Society
8-12 January 2019 in Málaga, Spain
Abstract submission deadline: 26th September 2018, early registration deadline: 31st October 2018.
Conference website: https://www.biogeography.org/meetings/ibsmalaga2019/

32nd meeting of the GfÖ-Specialist Group Plant Population (PopBio)
23-25 May 2019 in Warsaw, Poland

XXI European Congress of Lepidopterology
3-7 June 2019 in University of Molise, Campobasso, Italy
Early registration deadline: March 15, 2019, abstract submission deadline: April 15, 2019.
Conference website: http://www.sel2019conference.com/

12th EDGG Field Workshop: Inneralpine dry valleys of Switzerland
11–19 May 2019, Switzerland
see details in this issue on pp. 10-11

16th Eurasian Grassland Conference (EGC)
29 May – 5 June 2019 in Graz, Austria and Maribor, Slovenia
see details in this issue on pp. 8-9

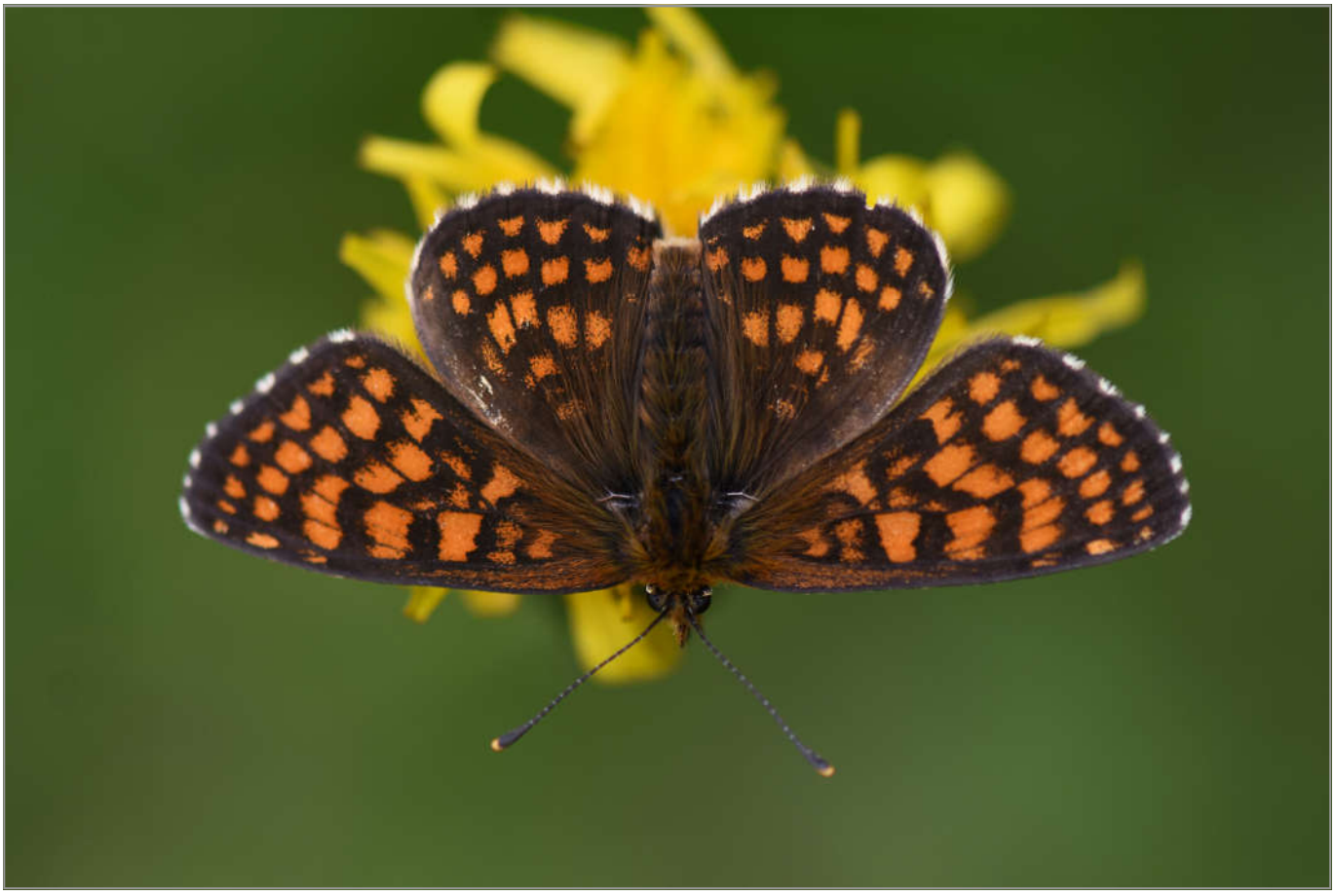
13th EDGG Field Workshop: Grasslands of Armenia along the elevational gradient
26 June –7 July 2019, Armenia
see details in this issue on pp. 10-11

62nd Symposium of International Association for Vegetation Science (IAVS)
14-19 July 2019 in Bremen, Germany

28th Workshop of European Vegetation Survey (EVS)
2-6 September 2019 in Madrid, Spain

20th European Congress of Herpetology
2-6 September 2019 in Milan, Italy
Conference website: http://seh-congress-2019.unipv.it/

8th World Conference on Ecological Restoration
22-27 September 2019 in Cape Town, South Africa



Melitaea athalia **in a mesic subalpine meadow, Grisons, Switzerland. Photo: J. Dengler.**

EDGG on the web:
http://www.edgg.org
EDGG in Facebook:
https://www.facebook.com/groups/938367279561202
EDGG on the ResearchGate
https://www.researchgate.net/project/EDGG-Eurasian-

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 5 October 2018, it had 1323 members from 67 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 subgroup of IAVS (http://www.iavs.org) but one can join our group without being an IAVS member. We live from the activities of our members. Everybody can join the EDGG without any fee or other obligation.
The EDGG covers all aspects related to grasslands, in particular: plants - animals - fungi - microbia - soils - taxonomy - phylogeography - ecophysiology - population biology - species' interactions - vegetation ecology - syntaxonomy - landscape ecology - biodiversity - land use history - agriculture - nature conservation - restoration - environmental legislation - environmental education.

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***Philaeus chrysops,* a typical spider of dry stony grasslands, here sitting on *Sedum album*; Ausserberg, Canton of Valais, Switzerland. Photo: P. Wiedemeier.**