

Eurasian Dry Grassland Group

International Association for Vegetation Science



Daniel Sánchez-Mata, Didem Ambarli, Idoia Biurrun, Jürgen Dengler, Anna Kuzemko, Péter Török, Stephen Venn, Michael Vrahnakis

Madrid, December 11, 2017

The **Eurasian Dry Grassland Group (EDGG)** was founded in 2008 (then named European Dry Grassland Group) as **network of researchers and conservationists dealing with natural and semi-natural grasslands in the Palaearctic** (Europe, North Asia, North Africa).

The basic aims of the EDGG are:

- ▶ to compile and to distribute information on research and conservation in dry grasslands and steppes beyond national borders
- ▶ to stimulate active cooperation among grassland scientists (ex-changing data, common data standards, joint projects and databases).

The EDGG covers all aspects related to dry 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 - po**

In 2009, EDGG became an official **Working Group of the International Association for Vegetation Science (IAVS)**.



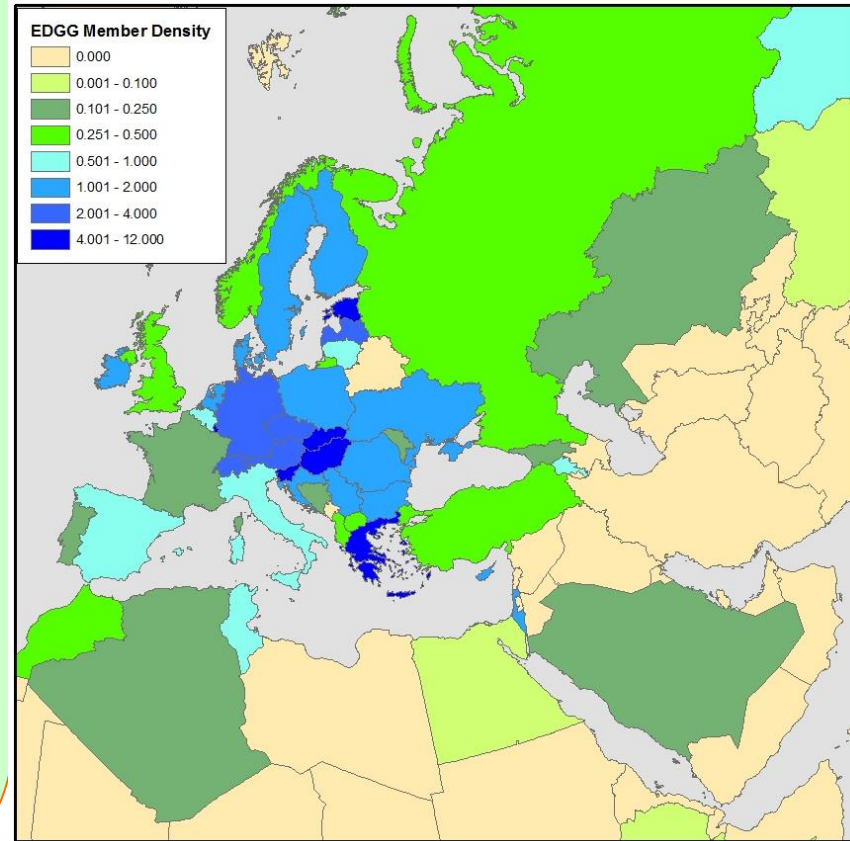
IAVS

Membership

Everybody interested in dry grasslands can join EDGG without any fee or other obligation. Presently, we have **1258** members from **67** countries (as of 30 November 2017).

We particularly seek new members from West and Central Asian steppe regions!

To become a member of the EDGG or its subordinate units just contact our membership administrator [Idoia Biurrun](mailto:idoia.biurrun@ehu.es) (idoia.biurrun@ehu.es).



Density of EDGG members per 1 million inhabitants (as of 13 July 2015).

EDGG Homepage

It provides comprehensive information on EDGG activities, on dry grasslands, on publications, on relevant conferences etc.



The screenshot shows the EDGG homepage with a yellow background. At the top left is the EDGG logo, and at the top right is a banner with the text "European Dry Grassland Group" in yellow on a green background. Below the banner, a paragraph describes the group as a network of researchers and conservationists. To the left of this paragraph is a vertical list of links: "About us", "News", "Events", "Dry Grasslands", "Publications", and "Useful links". Below the links is the IAVS logo and text stating that EDGG is a Working Group of the International Association for Vegetation Science (IAVS). Further down, it mentions support from the Floristisch-soziologische Arbeitsgemeinschaft e.V. To the right of the introductory paragraph, there is a link to the "Sign Smolenice Grassland Declaration" and an announcement for the "9th European Dry Grassland Meeting" in Greece. At the bottom, a grid of ten small images shows various elements of dry grassland ecosystems, including a blue butterfly, white flowers, a grassy field, a green insect, a yellow flower, a green lizard, a white egg, a herd of sheep, a close-up of insects, and a spider.

edgg

European Dry Grassland Group

The **European Dry Grassland Group (EDGG)** is a network of dry grassland researchers and conservationists in Europe. We live from the activities of our members. Everybody can join EDGG without any fee or other obligation.

[About us](#)
[News](#)
[Events](#)
[Dry Grasslands](#)
[Publications](#)
[Useful links](#)

IAVS
EDGG is a Working Group of the International Association for Vegetation Science (IAVS)

EDGG is supported by the Floristisch-soziologische Arbeitsgemeinschaft e.V.

[Sign Smolenice Grassland Declaration](#)

9th European Dry Grassland Meeting *Dry Grasslands of Europe: Grazing and Ecosystem Services will be held in Greece 19-23 May, Prespa*

The EDGG covers all aspects related to dry 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

www.edgg.org

Important: in January 2018 a new webpage is going to be launched!!!

EDGG Bulletin

The **Bulletin of the EDGG** (DOI 10.21570) is our official online journal. The quarterly issues comprise 20 to 40 full-colour pages each. They are sent to our members via e-mail and are made freely available to everybody on our homepage.



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Dear members of the Eurasian Dry Grassland Group,

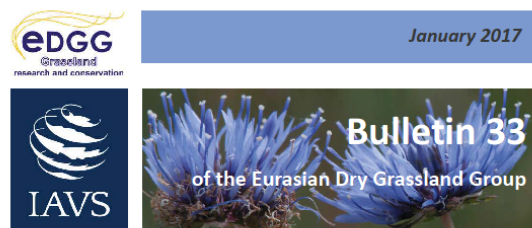
We are pleased to present the new issue of the EDGG Bulletin, which comprises a report of the 13th Eurasian Grassland Conference. The Executive Committee is deeply grateful to the local organizers for the well-organized event and a lot of pleasant moments. The issue also includes reports from IAVS grantees, as well as the first call for the 14th Eurasian Grassland Conference, to be held in Riga (Latvia) and Vilnius (Lithuania). This volume also includes a paper on the standardised EDGG sampling methodology, with its rationale and detailed illustrated description. The paper also provides the current versions of the guidelines, field forms and data entry spreadsheets as open-access Online Resources. Finally, the Forum section is devoted to the presentation of the paper of Burascano et al. 2016, entitled Current European policies are unlikely to jointly foster carbon sequestration and protect biodiversity, which highlights the important conflicts between grassland biodiversity conservation and European policies to mitigate climate change by increasing carbon sequestration, which often lead to afforestation and consequently loss of grassland biodiversity.

We would like to take the opportunity again to emphasize that the Bulletin welcomes submissions of scientific articles (in the form of Research papers, Forum papers, Reviews or Reports). While we do not provide peer-review, we offer linguistic editing after acceptance, and your paper will achieve high visibility if published in the Bulletin because it is open access and sent to more than 1000 grassland specialists throughout the world. You can find the author guidelines on the EDGG homepage. Since July 2016, the Bulletin also has a profile in ResearchGate to which you can contribute by uploading your bulletin articles (https://www.researchgate.net/journal/1868-2456_Bulletin_of_the_Eurasian_Dry_Grassland_Group).

We would also like to remind you that our Bulletin is an excellent way to inform the group members about your recent grassland-related publications and forthcoming events relevant for EDGG members. We hope that reading the Bulletin will inspire you to new ideas and discoveries that, in turn, will find their place on the pages of future volumes.

Anna Kuzemko, Idoia Biurrun & the Editorial Board

At the top: Trifolium arvense at the steppe slope in National Nature Park "Karmelitskove Podillya" (Central Ukraine) (Photo: Anna Kuzemko)



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Dear members of the Eurasian Dry Grassland Group,

We are pleased to present the new issue of the EDGG Bulletin, which comprises the invitation for the next EDGG Field Workshop in the Central Apennine mountains, in Italy. EDGG Research Expeditions/Field Workshops have been conducted annually since 2009, and have contributed to the development of a large body of standardized data. This issue includes a call for data to be added to this dataset, which would be used for analyses of biodiversity patterns and their drivers across biogeographical gradients.

The Bulletin also includes the Minutes of the General Assembly of the EDGG, which took place during the EGC in Sighisoara in September 2016. One of the most important contributions in this issue is a paper about the impact of military conflicts on the steppe protected areas of Ukraine. This detailed analysis warns the international scientific community about the negative impacts on all steppe protected areas in Ukraine caused by military operations or exercises and other factors stemming from the unstable political situation in the country. But there is also room for hope, as we also include two short contributions looking on the bright side. The first one informs us about a new project to support the Steppe national nature parks of Ukraine, and the second about the success in the Ukrainian Court of the Appeal to stop the destruction of the Tarutyn'skyj steppe.

In this issue we want to relaunch the section devoted to the recent publications of our members. This section is open to all EDGG members, so once more we want to invite all of you to send us your grassland-related papers, so that they can be included in this section in the future issues. Finally, we would like to take the opportunity again to emphasize that the Bulletin welcomes submissions of scientific articles (in the form of Research papers, Forum papers, Reviews or Reports). While we do not provide peer-review, we do offer linguistic editing after acceptance, and your paper will achieve high visibility because the Bulletin is open access and distributed to more than 1000 grassland specialists throughout the world. You can find the author guidelines from the EDGG homepage.

We hope that reading the Bulletin will inspire you to new ideas and discoveries that, in turn, will find their place on the pages of future issues.

We wish you a Happy New Year.

Anna Kuzemko, Idoia Biurrun & the Editorial Board

At the top: Jasione montana, Germany. Photo: J. Dengler.



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Dear members of the Eurasian Dry Grassland Group,

We are pleased to present the new issue of the EDGG Bulletin, which comes with several important official announcements, such as the third call for the 14th Eurasian Grassland Conference, to be held in Latvia and Western Lithuania, with extended registration deadlines. We also include a report about the GrassPlot database, with an invitation to join its Consortium, as well as short reports and invitations to join other EDGG-affiliated vegetation-plot databases. Last but not least, this issue also contains a call for nominations for the elections to the EDGG Executive Committee 2017-2019, with deadline on 15 May 2017. We encourage all of you to participate actively in this election, and to consider nominating yourselves or others as candidates for the election.

This issue also includes a report on the 9th EDGG Field Workshop in Serbia, and two forum papers dealing with different conservation aspects of Ukrainian steppes.

We encourage all of you again to send us your grassland-related papers to be included in the section devoted to recent publications of our members. And finally, we would like to take the opportunity again to emphasize that the Bulletin welcomes submissions of scientific articles (in the form of Research papers, Forum papers, Reviews or Reports).

We hope that reading the Bulletin will inspire you to new ideas and discoveries that, in turn, will find their place on the pages of future issues.

Anna Kuzemko, Idoia Biurrun & the Editorial Board

At the top: Natural habitat of Hyacinthella palasiensis near Volnukhine village, Lutuhine district, Lugansk region, Ukraine. Photo: M. Peregrin.

www.edgg.org/publications.htm



Bulletin of the Eurasian Dry Grassland Group

Journal description

The "Bulletin of the Eurasian Dry Grassland Group" (ISSN 1868-2456; short: EDGG Bulletin) is the official journal of the Eurasian Dry Grassland Group (EDGG; www.edgg.org). With more than 1,100 members from more than 60 countries, the EDGG is the biggest Working Group of the International Association for Vegetation Science (IAVS; www.iavs.org). Membership is free of charge and can be obtained via e-mail to the Membership Administrator (idoia.biurrun@ehu.es). The EDGG deals with all aspects of natural and semi-natural grasslands in the Palaearctic biogeographic realm, i.e. Europe, North Africa, West, Central and North Asia, including fauna, flora, vegetation, biodiversity, ecology, conservation and management. The EDGG Bulletin was founded in 2008 under the name "Bulletin of the European Dry Grassland Group" and was led for the first 26 volumes by Editor-in-Chief Monika Janišová. With the change of the name of the Working Group to "Eurasian Dry Grassland Group" and the widening of its scope to the whole Palaearctic realm and all semi-natural and natural grasslands instead of only the dry grasslands, also the Bulletin adjusted its name. From volume 27 onwards, Anna Kuzemko is serving as Editor-in-Chief and Idoia Biurrun as Deputy Editor-in-Chief and Didem Ambarli, Jürgen Dengler, Monika Janišová, Péter Török, Laura Sutcliffe, Steve Venn as well as Michael Vrahnakis for the Editorial Board. The Bulletin currently appears in four open-access volumes per year, each consisting of about 30 full-colour pages. The first part of each Bulletin is devoted to official announcements and reports from the EDGG Executive Committee and its activities, like the Eurasian Grassland Conferences, the EDGG Field Workshops and the EDGG-

Scale-dependent species diversity in a semi-dry basiphilous grassland (*Bromion erecti*) of Upper Franconia (Germany)

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Abstract: We analysed a semi-dry basiphilous grassland near Bayreuth, Upper Franconia, Germany with nested-plot sampling on areas from 0.0001 to 100 m². The stand clearly belongs to the order *Brachypodietalia pinnati* of the class *Festuco-Brometea*. Within this order, the affinity to the subatlantic alliance *Bromion erecti* was higher than to the subcontinental *Cirsio-Brachypodion pinnati*, while the assignment to any of the current *Bromion erecti* associations remained unclear due to a lack of an up-to-date synonomic revision of the dry grasslands in Germany. The species richness for the different grain sizes was always above those for *Brachypodietalia pinnati* communities in NE Germany, but below the extremely rich stands in the White Carpathians or Transylvania. The species-area relationships also had a very low slope (e.g. $z = 0.18$ for all species combined), pointing to an unusually high homogeneity of the stand or rather a limited regional species pool. The richness values in Bayreuth at smallest grain sizes reached about 1/3 of the known maxima in European grasslands, but only about 1/3 for the areas

Scale-dependent species diversity in a sandy dry grassland (*Festucion vaginatae*) of Vojvodina (Serbia)

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Abstract: We analysed a stand of Pannonian subcontinental fescue sandy grassland in the Delibatska peščara, South-Eastern Banat, Vojvodina, Serbia) with nested-plot sampling on areas from 0.0001 to 100 m² (= "EDGG biodiversity plot"). The stand belongs to the class *Koelerio-Corynephoretea*, order *Sedo auri-Festucetalia* (syntax. syn.: *Festucetalia vaginatae*) and alliance *Festucion vaginatae*. Mean species richness values (e.g. 27.5 species on 10 m², with 25.0 vascular plants

Scale-dependent plant diversity in Palaearctic grasslands: a comparative overview

Jürgen Dengler^{1,2}, Iulia Bărbulescu³, Iva Apostolova⁴, Esther Baumann⁵, Thomas Becker⁶, Ann Berastegui⁷, Steffen Böck⁸, Laura Cancellieri⁹, Ivona Demčič¹⁰, Yakov P. Didukh¹¹, Christian Dolák¹², Nikolai Ermakov¹³, Goffredo Filibeck¹⁴, Iztar García-Mijangos¹⁵, Gianpiero Giussio del Galdo¹⁶, Riccardo Guarino¹⁷, Monika Janilová¹⁸, Renaud Jannatze¹⁹, Kai Jensen²⁰, Michael Jeschke²¹, Zeynep Kaptan²², Anna A. Kuznetsova²³, Sándor Lelkes²⁴, Iritsa Pedashenko²⁵, Mariya Polyakova²⁶, Eszter Rápolyi²⁷, Anna Sabo²⁸, Kiril Vasilev²⁹, Nikolay Velez³⁰, Frank Weiser

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Author Guidelines for scientific articles in the Bulletin

Scope

The Bulletin of the EDGG publishes original papers (Research Articles, Reviews, Forum Articles, Reports) on all aspects related to natural and semi-natural grasslands of the Palaearctic realm, 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. The EDGG Bulletin is characterised by open access, full colour, no article processing charges, no peer-review, i.e. basically all articles that are within the scope and meet the formal requirements below will be published and it is the responsibility of the authors alone to ensure scientific quality.

Format of submission

Please submit the full manuscript as a single editable text file (MS Word or rtf). Figures and tables should be included together with their captions in the text.

Language

Manuscripts must be written in English language (either British or American throughout).

Manuscript structure

The manuscript should be organised in a single continuous document, with a title page, followed by the body of text and the figures and tables directly in the text. Always consult a recent issue of the *Bulletin of the EDGG* for details on format, sequence of headings, citation style and arrangement of the manuscript (<http://www.edgg.org/publications.htm>).

Body of text

Abstract: Up to 250 words, no references.

Keywords: There should be 6–12 singular keywords, including all relevant terms from the title, in alphabetical order and separated by semicolons, e.g.:

Agrostis; biodiversity; conservation; gradient analysis; grassland; transect

Nomenclature: Refer to one (or few) source(s) for unified nomenclature of plant species or vegetation units, unless there are only few names and their authors are given in the text, e.g.:

Miller (2001) for vascular plants, except Myers et al. (2003) for *Asteraceae*

Abbreviations: List and explain any abbreviations that are frequently used in the text, e.g.:

DCA = Detrended Correspondence Analysis; ICPN = International Code of Phytosociological Nomenclature (Weber et al. 2000)

Main text: Up to three levels of unnumbered section headings are possible. The standard sequence of main sections in *Bulletin of the EDGG* is Introduction – Methods – Results – Discussion, but variation of this structure is acceptable when appropriate.

Author contribution: Required for any paper with more than one author, e.g.:

A.B. planned the research, C.T.F. and Z.K. conducted the field sampling, B.C. performed the statistical analyses and led the writing, while all authors critically revised the manuscript.

- Announcements and reports of EDGG activities (EGC and FW)
- Original research papers
- Short communications, e.g., announcements of Research Groups, reporting novelties on grassland fauna and flora, etc.
- Forum section
- Book reviews, etc.

Eurasian Grassland Conference, EGC

The EDGG organizes annual conferences on dry grassland-related topics in changing locations throughout the Palaearctic.

First as “Meeting of the EDGG”, the EGC has successfully been held during 14 editions, mostly in central, southern and eastern European countries.

A future meeting is being planned in Central Spain. We hope to see all of you !!!!



Eurasian Grassland Conference, EGC

The **15th Eurasian Grassland Conference** will be held in **4-8 June 2018** in **Sulmona (Apennines, Italy)**. The main topic is “Cooperating for Grassland Conservation”, thus, the conservation of grasslands through transdisciplinary and transnational cooperation. The conference wants to create a firm basis for the establishment of a network of cooperation within the EDGG.



EDGG Field Workshops

Since 2009, EDGG organises Field Workshops (formerly: Research Expeditions) to **gather high-quality phytosociological and biodiversity data of semi-natural grasslands and steppes** in undersampled regions of Palaearctic. **Contact:** juergen.dengler@uni-bayreuth.de



Navarra, 2014



Poland, 2015



Serbia, 2016



Apennines, 2017

7th EDGG Field Workshop 2014 Navarra

- 
- A photograph of three researchers in a mountainous field. They are kneeling on a grassy slope with yellow wildflowers, using a yellow measuring tape. In the background, there are rocky hills and mountains under a blue sky with white clouds. A red backpack is on the ground to the right.
- Main organisers: Drs. Idoia Biurrun, Itziar García-Mijangos & Asun Berastegi
 - 16-24 June 2014
 - 16 participants from 10 countries
 - New:
 - First Field Workshop with oral presentations
 - Spiders sampled

8th EDGG Field Workshop 2015 S Poland

- Main organisers: Dr. Zygmunt Kacki & Iwona Dembicz
- 13-23 June 2015
- 16 participants from 6 countries
- New:
 - also mesic and wet grasslands
 - biomass sampling as proxy for productivity

9th EDGG Field Workshop 2016 E Serbia

- Main organisers: Prof. Zora Dajić Sevanović & Dr. Svetlana Acic
- 2-9 July 2016
- 22 participants from 11 countries
- 32 EDGG Biodiversity Plots and 77 normal plots
- New:
 - consistent biomass sampling
 - standardised vegetation height measurements
 - nutritional value of biomass

Photo: Corrado Marceno

10th EDGG Field Workshop 2017 Central Apennines

- Main organisers: Drs. Goffredo Filibeck, Laura Cancellieri & Marta G. Sperandii
- 3-11 June 2017
- 22 participants from 9 countries
- New:
 - Auchenorrhyncha (leafhoppers and planthoppers) sampled
 - assessment of observer-related error



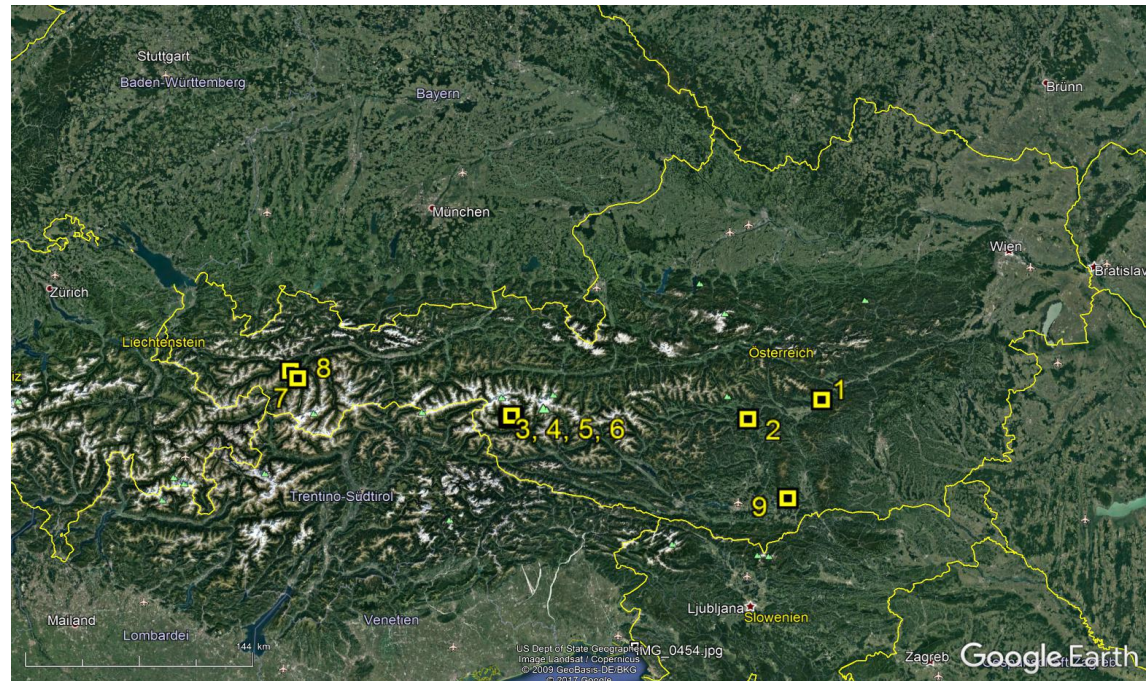
General data of previous Field Workshops

No.	Period	Research area	Elevation (m a.s.l.)	Participants	Countries	Biodiver- sity plots	10-m ² plots (total)
1	14-26 July 2009	Romania	321-670	6	3	20	63
2	10-25 July 2010	Ukraine	73-251	18	8	21	226
3	14-24 August 2011	Bulgaria	633-1460	9	5	15	98
4	29 March-5 April 2012	Sicily	4-1200	14	5	21	67
5	15-23 May 2012	Greece	1-1465	16	6	14	31
6	22 July-1 August 2013	Siberia	300-700	14	7	39	133
7	15-24 June 2014	Spain	295-1970	16	10	35	119
8	13-23 June 2015	Poland	108-465	16	6	31	86
9	2-9 July 2016	Serbia	92-1555	22	10	32	141
10	3-11 June 2016	Italy	****	22	9	20	94

Next FW: 11th EDGG Field Workshop

Austria, Eastern Alps, 6-13 July 2018

Organizers: Martin Magnes, Philipp Kirschner, Helmut Mayrhofer



Contact: Martin Magnes, martin.magnes.uni-graz.at; Jürgen Dengler, juergen.Dengler@uni-bayreuth.de; Idoia Biurrun, idoia.biurrun@ehu.es

The Future FW

11th FW: Austria, inner alpine valleys of the Eastern Alps, 2018

12th FW: Armenia, 2019. Organizer: Alla Aleksanyan

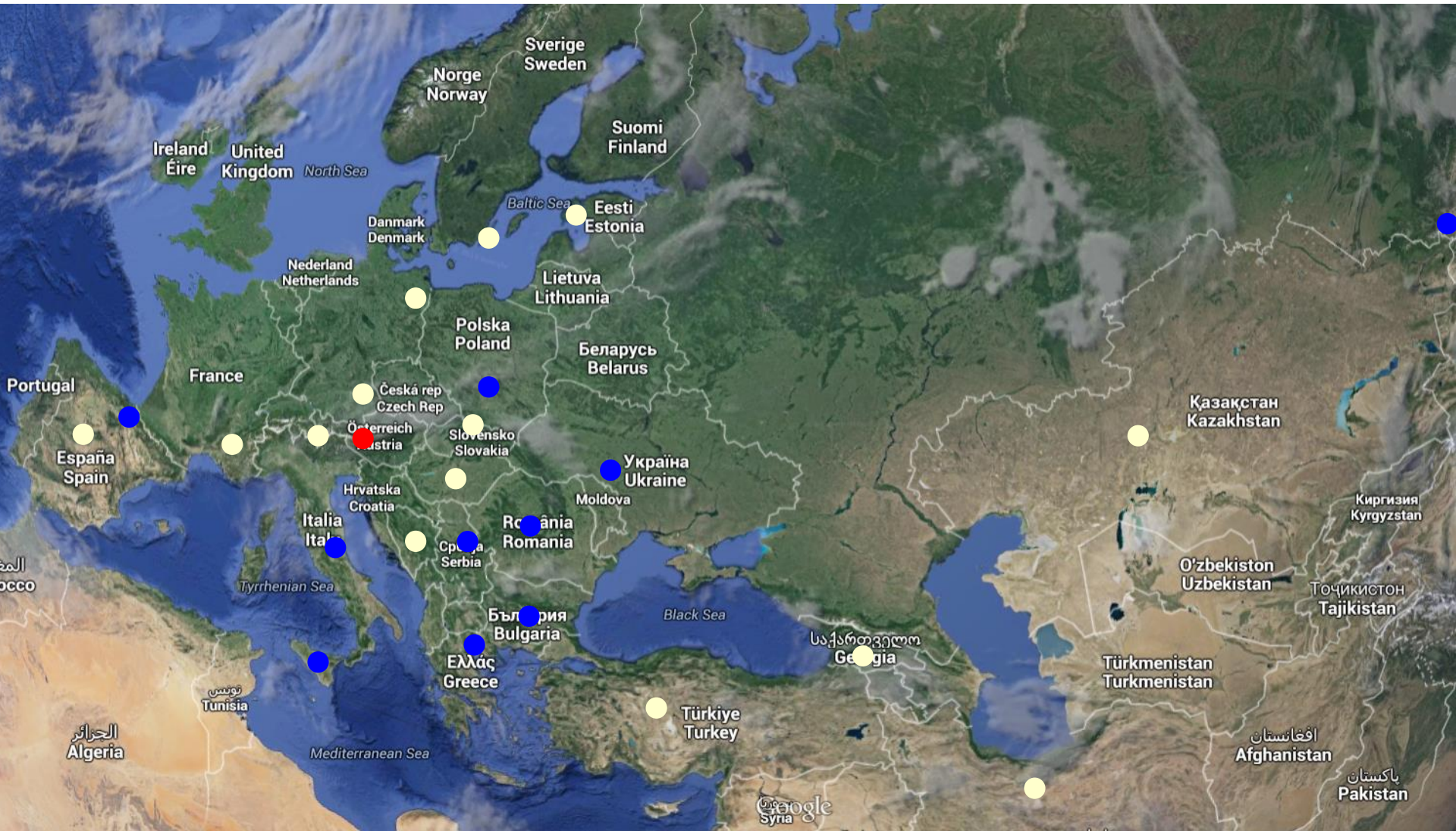
Nexts:

- Central System, Spain. Organizers: Pilar Rodríguez-Rojo, Daniel Sánchez-Mata
- Northern Poland. Organizers: Iwona Dembicz, Lukasz Kozub, Zygmund Kacki
- Bosnia and Hercegovina. Organizer: Senka Barudanovic
- Northern Italy. Organizer: Riccardo Guarino

- Some other possibilities, not fixed yet:

- Kazakshstan. Organizer: Tatyana Bragina
- Hungary. Organizers: Péter Török, Orsolya Valko, Aniko Csecserits
- Iran. Organizers: Jalil Noroozi, Alireza Naqinezhad et al.
- Turkey. Organizer: Didem Ambarli

Field Workshops



● 2008-2017

● 2018- Eastern Alps, Austria

● 2019: Armenia, and future field works

Overarching publications from EDGG “field pulses”

First overview of min, mean and max richness values

- **EDGG Bulletin** No. 31 (2016)
- Dengler et al., 31 authors, 12 countries
- Database of richness statistics is open access

Detailed description of the methodology

- **EDGG Bulletin** No. 32 (2016)
- Dengler et al., 13 authors, 9 countries
- With seven online resources

July 2016

Bulletin of the Eurasian Dry Grassland Group 32

Scale-dependent plant diversity in grasslands: a comparison of two methods

Argon Dengler^{1,2}, Idola Buisson³, Ana Aguilera⁴, Esther Ben-Lauri⁵, Laura Cancellieri⁶, Ivona Dombić⁷, Yohji P. Dohda⁸, Christina García-Montero⁹, Georgina Gómez del Galdo¹⁰, Riccardo Guzzoni¹¹, Michael Isenhardt¹², Raymond Kado¹³, Lubor Krcal¹⁴, Anna Marja Pöyhönen¹⁵, Ercan Ruyter¹⁶, Anne Saha¹⁷

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- 17) Institute of Botany, University of Vienna, 1090 Vienna, Austria; argon.dengler@univie.ac.at

October 2016

Bulletin of the Eurasian Dry Grassland Group 32

13

Research paper

Assessing plant diversity and composition in grasslands across spatial scales: the standardised EDGG sampling methodology

Argon Dengler^{1,2}, Idola Buisson³, Alessandro Chiarucci⁴, Ivona Dombić⁵, Riccardo Guzzoni⁶, Benjamin Henneberg⁷, Monika Janišová⁸, Corrado Marcelli⁹, Alireza Naqinejad¹⁰, Nina Y. Polchinnova¹¹, Kiril Vassilev¹² & Idola Buisson¹³

- 1) Plant Ecology, Research Centre of Ecology and Environment Research (BCEER), University of Bern, University of Bern, 3000 Bern, Switzerland; argon.dengler@berne.unizh.ch
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* Corresponding author

Bulletin of the Eurasian Dry Grassland Group 32 (2016) 13-30

Abstract: This paper presents the details of the EDGG sampling methodology and its underlying rationale. The methodology has been applied during EDGG Research Expeditions and EDGG Field Workshops since 2009, and has been subsequently adopted by various other researchers. The core of the sampling are the EDGG Biodiversity Plots, which are 10-m² square sampling, in two replicates, nested plot series of 0.0001, 0.001, 0.01, 0.1, 1, 10 and 100 m² square plots, in which all herbaceous vascular plants, bryophytes and lichens are recorded using the shoot presence method. In the 10-m² plots, species cover is also estimated as a percentage and various environmental and structural parameters are recorded. Usually the EDGG Biodiversity Plots are complemented by the sampling of additional 10 m² normal plots with the same parameters as the 10-m² plots of the first, allowing emergence of a greater environmental diversity and the achievement of higher statistical power in the subsequent analyses for this important grass site. The EDGG sampling methodology has been refined over the years, with its core has turned out to generate high-quality, standardized data in an effective manner, which facilitates a multitude of analyses. In this paper we provide the current version of our guidelines. Field forms and data entry spreadsheets, as open-access Online Resources to facilitate the easy implementation of this methodology by other researchers. We also discuss potential future additions and modifications to the approach, among which the most promising are the use of stratified random methods to a priori include the plots and sites to sample intermediate size in the same plots and grass sites, such as grasshoppers (Orthoptera) and vegetation-dwelling spiders (Araneae). As with any other method, the EDGG sampling methodology is not ideal for every single purpose, but with its continued improvements and its flexibility, it is a good multi-purpose approach. A particularly advantageous element, lacking in most other sampling schemes, including classical phytosociological sampling, is the multi-scale and multi-level approach, which provides data also for deeper understanding of the generative and dispersive processes of biodiversity patterns and their underlying drivers across scales and taxa.

Keywords: biodiversity; bryophytes; EDGG Biodiversity Plot; invertebrates; lichens; methodology; multi-scale study; nested; scale-dependence; species richness; vegetation-environment relationship; vegetation sampling.

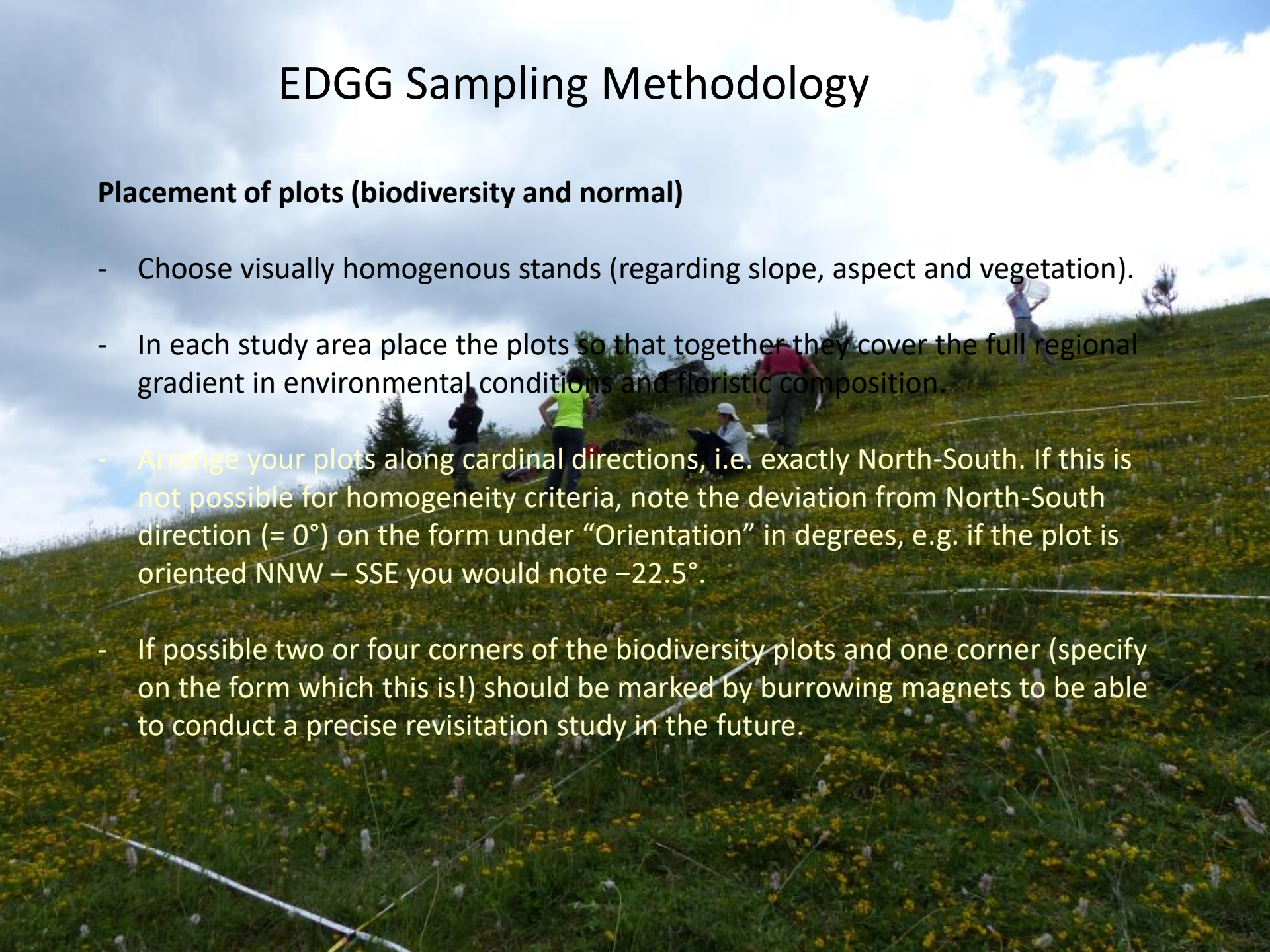
Abbreviations: EDGG = Eurasian Dry Grassland Group; GIS = geographic information system; QA = quality assessment; SAM = species-area relationship.

This article contains Online Resources, which are available from the EDGG homepage (<http://www.edgg.eu>) as well as from the ResearchGate account of the first author (<https://www.researchgate.net/profile/Argon-Dengler>).

EDGG Sampling Methodology

Placement of plots (biodiversity and normal)

- Choose visually homogenous stands (regarding slope, aspect and vegetation).
- In each study area place the plots so that together they cover the full regional gradient in environmental conditions and floristic composition.
- Arrange your plots along cardinal directions, i.e. exactly North-South. If this is not possible for homogeneity criteria, note the deviation from North-South direction ($= 0^\circ$) on the form under "Orientation" in degrees, e.g. if the plot is oriented NNW – SSE you would note -22.5° .
- If possible two or four corners of the biodiversity plots and one corner (specify on the form which this is!) should be marked by burrowing magnets to be able to conduct a precise revisitation study in the future.

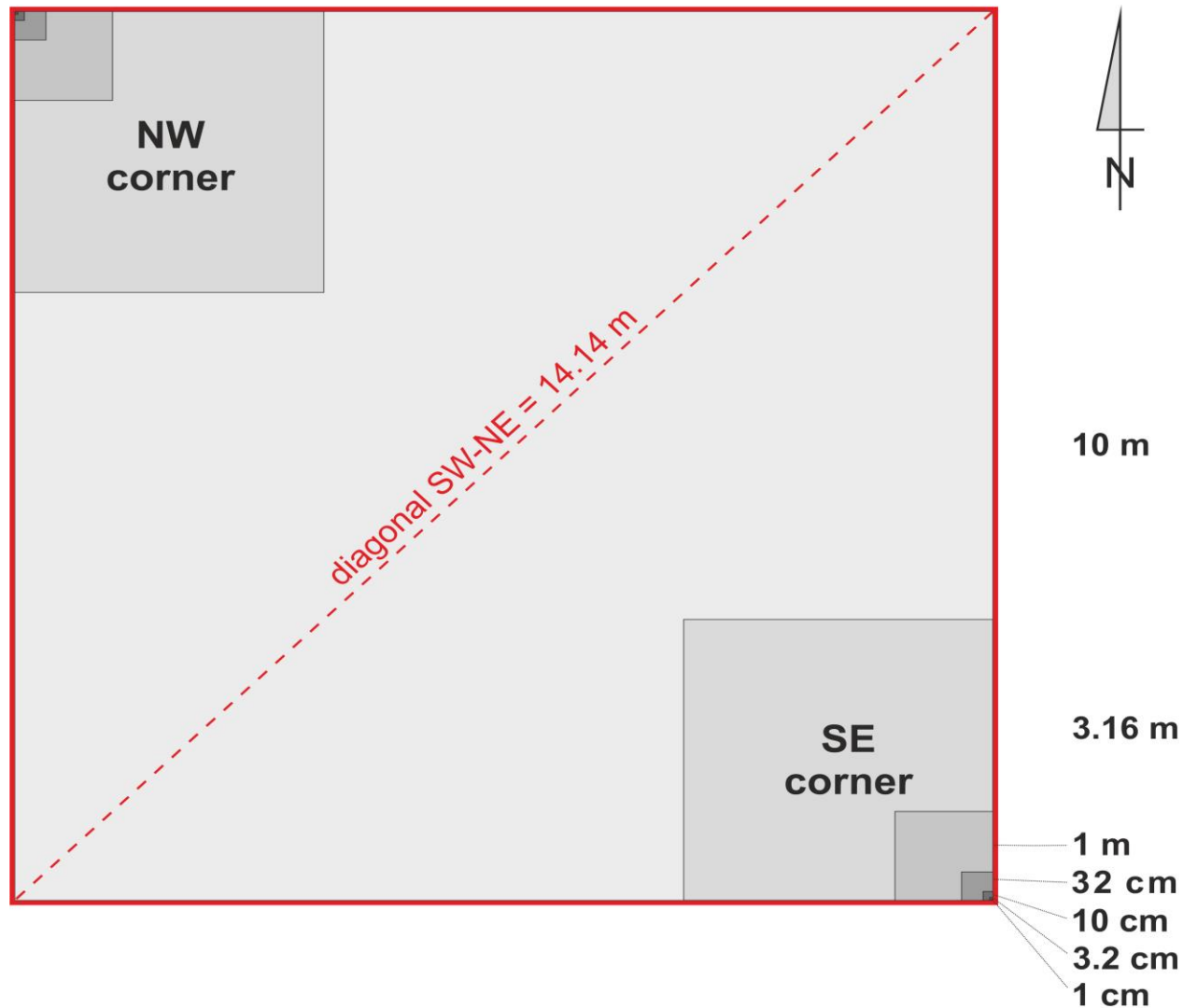


EDGG Sampling Methodology

Particularities of biodiversity plots

- To achieve a perfect square with an edge length of 10 m, first establish the diagonal with 14.14 m (in NW-SE direction).
- Place two series of nested plots in two opposite corners (NW and SE), with edge lengths of 1 cm, 3.2 cm, 10 cm, 32 cm, 100 cm and 316 cm. Occasionally NE and SW might be used instead.





General arrangement of a 100-m² EDGG Biodiversity Plot and the two series of nested subplots in its NW and SE corners. To establish the 100 m² as a precise square, first the diagonal NE-SW with 14.14 m is delimited

EDGG Sampling Methodology

Coordinates

- Set your GPS to
 - Coordinate system **decimal degrees** (hhd.ddddd°)
 - Geoid **WGS 84** and
 - Unit of measurement **metres** (m)
- If available, use the averaging function of your GPS to achieve higher precision of measurement. Note the precision of the measurement in m (if provided by the GPS) or alternatively “averaged” or “non-averaged”.
- In addition to writing down the coordinates, store them also in the GPS (this gives some redundancy and might enable to get the geographic coordinates with less effort).
- Indicate at which of the corners (SW, NW, SE, NE, centre) you placed the GPS for measurement.

EDGG Sampling Methodology

Plant recording

- We record with the shoot presence (= any part) system, i.e. each plant species who are either rooting inside the plot or the vertical projections of whose shoots fall within the plot is recorded as present.
- For the biodiversity plots (particularly at the smaller grain sizes) take care that the spatial arrangement of plant parts is not disturbed by placing the tapes and pins or by searching for low-growing plants (i.e. before disturbing the higher layer you should establish which species had shoot presence there).
- Cover value is recorded for all living superficial parts of plants; dead individual of spring ephemerals (annuals, geophytes) from the same year are counted as living. Herbaceous plants are always recorded in the herb layer irrespective of their height; woody plants are assigned to layers depending on their size (< 0.5 m vs. > 0.5 m).
- Please always double-check that the cumulative cover values of all species of a group are at least as high as the cover value of that group (usually they are 1.5–2x as high).

EDGG Sampling Methodology

Collection of undetermined plants

- If plants cannot be determined in the field for sure, sample them in paper bags separately for vascular plants, bryophytes and lichens (label the later bags with a big “B” and “L” respectively). Note on the record form which plants have been collected by circling the number.
- In the case of biodiversity plots, ensure that plants are sampled in separate bags for each plot size and for each corner.
- Ensure that the plant bags carry full plot number and date, plus in the case of biodiversity plots the subplot size and the corner.

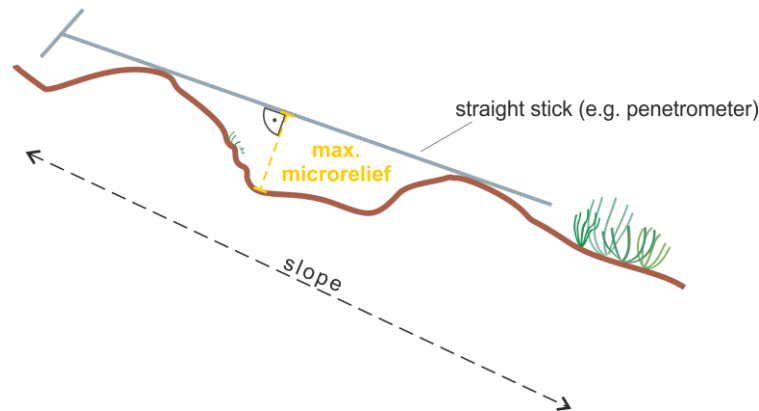
EDGG Sampling Methodology

Vegetation structure and biomass

- Vegetation height is measured with the pierced discs by letting them fall down the “penetrometer” at five random places within each 10-m² plot (note the height at the hole using the scale on the penetrometer). This should be done before looking for plants on the 10-m² plot because measurements otherwise will be biased by trampling!
- Biomass is sampled and pooled from two random locations within each 10-m² plot. For that, in each selected location, a square of 20 cm x 20 cm size is delimited by pushing an iron sampling frame (or a square formed by the folding rule) down to the ground. All biomass rooting inside the frame (note that here rooting presence, not shoot presence is used, unlike species records.) As a standard standing vascular plant biomass, non-vascular plant biomass and litter are pooled to one sample from both subplots. But in cases resources allow separate analysis, they might alternatively be collected as three separate subsamples.

Abiotic factors

- Slope (in °) is best measured by placing the inclinometer on the penetrometer put on the soil along the main gradient.
- Microrelief (in cm) is the maximum deviation from the penetrometer placed on the elevated parts of the surface to the actual soil surface, measured perpendicular to the penetrometer (not perpendicular to the earth).



- Cover of litter and dead wood should be assessed after virtually removing all living plants, i.e. not only the litter that is seen in vegetation gaps.

Abiotic factors

- Surface cover of the three fractions of the mineral soil should be assessed after virtually removing all living plants, litter and dead wood. Thus stones/rocks, gravel and fine soil should sum up to 100%.
- Soil depth is measured at five random places in the plot (note “0 cm” when hitting a superficial stone and something like “> 85 cm” when the soil depth exceeds the length of the penetrometer). Please note all five measurements separately (no averaging!).
- Land use information is of high importance for analyses. Therefore not any information on present and past land use (mowing, grazing, abandonment, burning, ploughing) you can retrieve in the field as precise as possible. Further details can be provided in line “Comments”.

Abiotic factors

- Slope (in °) is best measured by placing the inclinometer on the penetrometer put on the soil along the main gradient.
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EDGG Sampling Methodology

Soil samples

- Take a mixed soil sample of the uppermost 10 cm of soil (removing litter, but not gravel and stones) from five random points in the plot. You should thoroughly mix the sample and then reduce it to approx. 100–200 g.
- Label the bags well readable with full plot number and date.
- In the evenings open the soil samples for drying and check their correct numbering and completeness.

EDGG Sampling Methodology

Recording forms

- Please ensure that plot numbers are neither duplicated nor missing by using pre-numbered sheets and returning unused numbered sheets every evening to the expedition leader.
- Specify the person who wrote the protocol (might be contacted when something is unreadable).
- When relevé continues on a second page ensure that full plot number and page are repeated (the pages will be scanned individually, so each page must have a unique identifier).
- Before finishing a relevé, please ensure that all header data are filled in!
- Don't write too near to the margins; otherwise information might get lost when the forms are scanned and hole-punched.
- Every evening all record forms will be collected and cross-checked for numbering.

Layer	Cover (%)	Max. height (m)	Herb layer	Cover (%)	Other surfaces	Cover (%)
Vegetation total		-	H-Phanerophytes		Litter	
T: Tree layer (>5 m)			H-Chamaephytes		Dead wood	
S: Shrub layer (>0.5–5 m)			H-Graminoids		Stones and rocks (> 63 mm)	
H: Herb layer			H-Legume forbs		Gravel (2–63 mm)	
C: Cryptogam layer		-	H-Other forbs		Fine soil (< 2 mm)	
						$\Sigma = 100\%$

Edge length (in m)

[illegible]











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GrassPlot - Database of Scale-Dependent Phytodiversity Patterns in Palaeartic Grasslands (EU-00-003)

Member of

Baycee



The database started as a repository for the data collected at the Research Expeditions/Field Workshops of the [Eurasian Dry Grassland Group \(EDGG\)](#) and similar multi-scale sampling schemes. It formerly was named "Database Species-Area Relationships in Palaeartic Grasslands".

Meanwhile we are looking for all **high-quality phytodiversity data** sampled on **plots of the following standard areas**: 0.0001 m², 0.001 or 0.0009 m², 0.01 m², 0.1 or 0.09 m², 1 m², 10 or 9 m², 100 m², and 1000 or 900 m². We preferentially include nested-plot multi-scale data, but we also take data for single grain sizes, provided they are carefully sampled with the aim of complete species lists, i.e. we request that **plots have been precisely delimited in the field**, usually with metal pins in the corners and a measuring tape on the perimeter, which typically is not the case for conventional vegetation surveys. **Nested-plot data with at least four different plot sizes** are also accepted when plot sizes deviate from our standards. Any type of **grassland s.l.** from the whole **Palaeartic biogeographic realm** (Europe, North Africa, West- & Central Asia, and Northern Australia) and/or terricolous non-vascular plants (bryophytes, lichens and macroalgae) can be provided. While you can provide in the easy-most case just richness counts per plot (together with metadata, such as plot coordinates, grassland type, and soil properties) and data with species composition and potentially cover + selected environmental data. For more details on our requirements, see [here...](#)

GrassPlot, the EDGG database of high biodiversity data of Palaeartic grasslands, EDGG Field Workshops and similar talks by Monika Janisova et al.

GrassPlot as a highly selective database for specific purposes complements the existing "all-purpose" supranational databases

EDGG-edited publications (2016-2017)

***Tuexenia* 2016 and 2017**

- Topic: xxx
- Editors: Thomas Becker, Laura Sutcliffe, Monika Janisova, Steffen Boch & Estzer Ruprecht
- 5 articles + editorial
- Publication: xxx

***Hacquetia* 2016**

Topic: *Ecology and conservation of open habitats in Europe*

- Editors: Stephen Venn, Orsolya Valko,
- xx articles + editorial
- Publication: xxx

Recent Special Issues

Biodiversity and Conservation 2016

- Topic: *Palaeartic steppes: ecology, biodiversity and conservation*
- Editors: Jürgen Dengler, Didem Ambarlı, Johannes Kamp, Péter Török & Karsten Wesche
- 19 papers + editorial



Biodivers Conserv (2016) 25:2197–2231
DOI 10.1007/s10531-016-1214-7



ORIGINAL PAPER

The Palaeartic steppe biome: a new synthesis

Karsten Wesche^{1,6}  • Didem Ambarlı³ • Johannes Kamp⁴ •
Peter Török⁵  • Jan Treiber¹ • Jürgen Dengler^{2,6} 

Received: 13 July 2016 / Revised: 2 September 2016 / Accepted: 2 September 2016 /
Published online: 7 October 2016
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Current Special Issues

Phytocoenologia 2016

- Topic: *Classification of Palaearctic grasslands*
- Editors: Monika Janisova, Jürgen Dengler & Wolfgang Willner
- Status: 13 papers invited, but far less submitted
- Publication in December 2016
- **5 papers, 98 pp.**



Current Special Issues

Applied Vegetation Science – Virtual Special Feature (VSF) 2013-2017

- Topic: *Towards a consistent classification of European grasslands*
- Jointly with the European Vegetation Survey
- Editors: Jürgen Dengler, Erwin Bergmeier, Wolfgang Willner & Milan Chytrý
- Status:
 - started in 2013
 - 8 papers published by now
 - several more papers in the pipeline
 - VSF will likely be concluded 2017 with a synthesis paper by the editors
- **VSF papers are particularly well cited:**
 - 2013: VSF papers ranked 1st and 5th among all 68 AVS papers
 - 2014: VSF papers ranked 2nd and 12th among all 74 AVS papers

New Special Features

Hacquetia – Special Issue January 2018

- **Topic:**
Dry grasslands and steppes of the Palaearctic: biodiversity (animals, plants and fungi), ecology and conservation
- **Editors:**
Orsolya Valko, Stephen Venn, Iva Apostolova, Idoia Biurrun, Rocco Labadessa, Solvita Rusina, Michael Vrahnakis & Michal Zmihorski
- **Why to publish in Hacquetia?**
 - Open access, full colour, no publication charges
 - Indexed in Scopus, applied for inclusion into Web of Science



The Bulletin is published quarterly from the Bioentre Klein Flottbek, University of Hamburg, c/o Jürgen Dengler, Ohlenhorststr. 18, 22609 Hamburg, Germany. It is sent to all members of the group (1184 members from 67 countries as of 30th April 2017) and together with all previous issues, it is also freely available at <http://www.edgg.org/publications.htm>. Bulletin 34 (2017) of the EDGG was published on 30 April 2017.

Editors-in-Chief: Anna Kuzemko (Uman', Ukraine, annameadow.uk@gmail.com), Idola Blumun (Bilbao, Spain, idola.blumun@ehu.es)

Members of the Editorial Board: Didem Ambark (Düzce, Turkey), Jürgen Dengler (Bayreuth, Germany), Monika Janíková (Banská Bystrica, Slovak Republic), Laura Sutcliffe (Göttingen, Germany), Péter Török (Debrecen, Hungary), Stephen Venn (Helsinki, Finland), Michael Vrahnakis (Karditsa, Greece)

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Important dates: The deadline for Bulletin 35 is 15 July 2017

Bulletin 35 to appear: Summer 2017

EDGG on the web: <http://www.edgg.org>

EDGG in Facebook: <https://www.facebook.com/groups/938367279561202>

EDGG Facebook Group

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 EDGG - Eurasian Dry Grassland Group 

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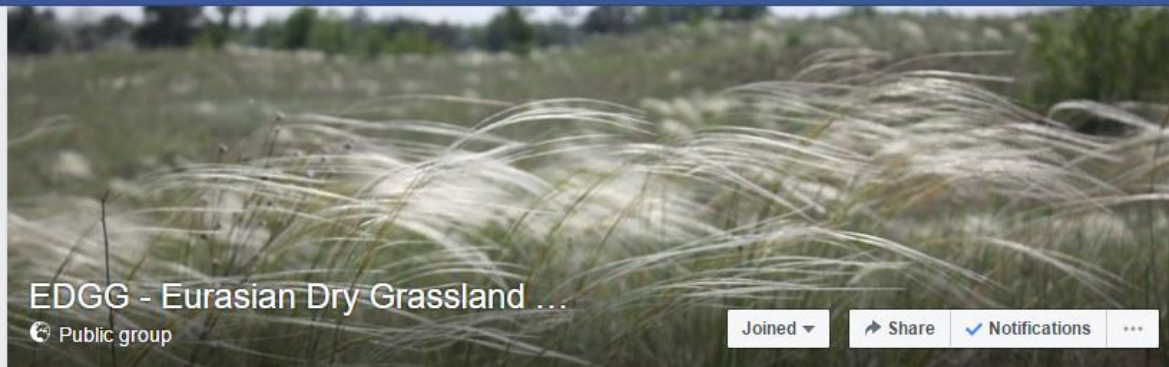
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RECENT ACTIVITY



Anna Kuzemko

7 mins

Dear colleagues,

we are happy to invite you and announce that the 10th Annual Meeting of the Specialist Group on Macroecology of the Ecological Society of Germany, Austria and Switzerland (GfÖ) will take place in Vienna (Austria) between the 19-21 April 2017. The meeting will be held under the slogan "Macroecology in Space and Time".

This conference will cover a wide range of topics at the crossroads of conservation biology, biogeography, macroecology, evolution and global ch... [See more](#)

Macroecology in Space and Time -
2017 Conference in Vienna

CVL.UNIVIE.AC.AT

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110 members (1 new)



DESCRIPTION

Edit

The Eurasian Dry Grassland Group (EDGG) is a network of dry gras... [See more](#)

TAGS

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Groups make it easier than ever to share with friends, family and teammates.

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RECENT GROUP PHOTOS

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EDGG - Eurasian Dry Grassland Group

1 share

Write a comment...

Stephen Venn added 8 photos to the album: 17. kesäkuuta 2017.
June 17 at 11:49pm

EC election



Shortcuts

- НЕЦУ Умань 20+
- "Софіївка" Національн... 20+
- Політика Умані 20+
- Флора України / Фло... 19
- Ukrainian Botanical... 20+

EDGG - Eurasian Dry Grassland Group

Write a comment...

Anna Kuzemko with Anna Kovtoniuk and 9 others.
July 6 at 10:06am - Riga

The 14th Eurasian Grasslands Conference just starts



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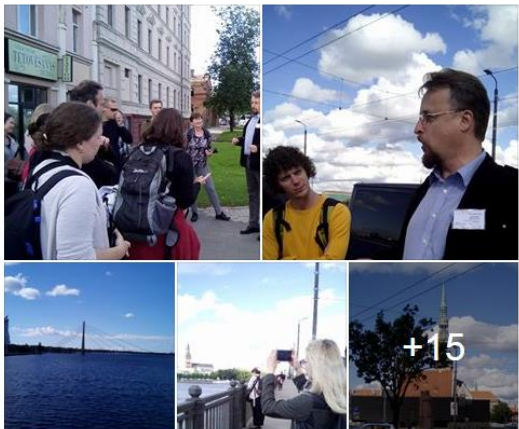
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- НЕЦУ Умань 20+
- "Софіївка" Національн... 20+
- Політика Умані 20+
- Флора України / Фло... 19
- Ukrainian Botanical... 20+

EDGG - Eurasian Dry Grassland Group

Anna Kuzemko
9 hrs - Riga

Excursion in old Riga with Valdis Rusins



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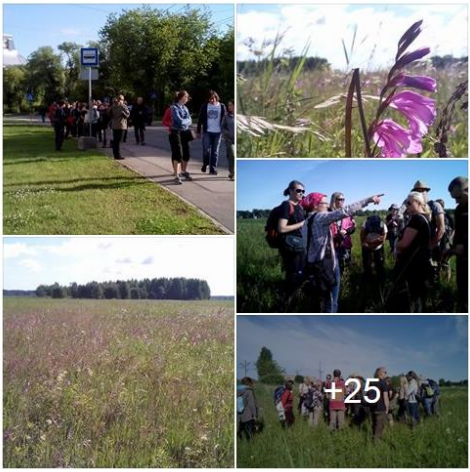
Shortcuts

- НЕЦУ Умань 20+
- "Софіївка" Національн... 20+
- Політика Умані 20+

EDGG - Eurasian Dry Grassland Group

Anna Kuzemko
9 hrs - Riga

Mid-conference excursion & Grassland party



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- "Софіївка" Національн... 20+
- Політика Умані 20+
- Флора України / Фло... 19
- Ukrainian Botanical... 20+