

of the European Dry Grassland Group



You may have realized that no issue of our Bulletin reached your mailboxes during the summer. Due to a very busy field season, we decided to publish a double issue in September, instead of two separate issues. Therefore we invite you to read about all our activities at once! And as we have had numerous activities and events to write about, the issue is rather expansive. The crucial event was the annual European Dry Grassland Meeting, held in Zamość, Poland, organized by Katarzyna Barańska and her team from Klub Przyrodników. In 2014, the annual meeting will be organized by Russian grassland researchers in Tula; the first circular is included in this issue. We also report about the annual conferences of the International Association for Vegetation Science in Tartu, Estonia; and its working group, the European Vegetation Survey in Rome, Italy. In this issue, you can also find a report from the EDGG Research Expedition to Khakassia, Russia, with the first preliminary results of our diversity research there. The forum article is devoted to a concept of wildlife protection. We are happy to announce the establishment of a comprehensive pan-European vegetation-plot database, the European Grassland Archive. Hopefully you will appreciate also the updated information of our completed and forthcoming editing activities (Special Issues/Features) in international journals and various smaller items in the regular journal sections and we hope you will enjoy reading them.

Editors

Content

News from European Dry Grassland Group	3
News from our members	4
EDGG Special Issues/Special Features 2013	5
European Grassland Archive	9
EDGG Meeting in Russia (5-15 June 2014)	12
The 10th European Dry Grassland Meeting in Zamość, Poland (24-31 May 2013)	14
56th Symposium of International Association for Vegetation Science, Tartu (Estonia) 26-30 June 2013	21
22th Workshop of European Vegetation Survey, Rome (Italy) 8-11 April 2013	24
Absolute "zapovednost" – a concept of wildlife protection for the 21st century	25
Steppes of Southern Siberia	31
Forum	49
Recent publications of our members	50
Book reviews	51
Forthcoming events	53

Echium russicum and Salvia pratensis on steep loess slope in the Bug river valley near Czumów, Poland. Photo: Monika Janišová, 25 May 2013

September 2013

EDGG homepage: www.edgg.org

European Dry Grassland Group

The European Dry Grassland Group (EDGG) is a network of dry grassland researchers and conservationists in Europe. EDGG is a Working Group of the International Association for Vegetation Science (IAVS). EDGG is also supported by the Floristisch-soziologische Arbeitsgemeinschaft.

The basic aims of the EDGG are:

- ♠ To compile and to distribute information on research and conservation in dry grasslands beyond national borders;
- ♠ to stimulate active cooperation among dry grassland scientists (exchanging data, common data standards, joint projects).

To achieve its aims, EDGG provides seven media for the exchange of information between dry grassland researchers and conservationists:

- ♠ the **Bulletin of the EDGG** (published quarterly);
- ♠ the **EDGG homepage** (www.edgg.org);
- ♠ e-mails via our **mailing list** on urgent issues;

♠ the **European Dry Grassland Meetings** - organized annually at different locations throughout Europe;

♠ **EDGG research expeditions** to sample baseline data of underrepresented regions of Europe;

♠ **EDGG vegetation databases**;

♠ **Special Features** on dry grassland-related topics in various peer-reviewed journals.

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.

Anyone can join the EDGG without any fee or other obligation. To become a member of the European Dry Grassland Group or its subordinate units, please, send an e-mail to Jürgen Dengler, including your name and complete address, and specify any of the groups you wish to join. More detailed information can be found at: http://www.edgg.org/about_us.htm.

EDGG Subgroups

EDGG members are automatically assigned to the Regional Subgroup of the region in which they reside. If you additionally wish to join other Subgroups or the new Grassland Conservation and Restoration Subgroup, just send an e-mail to the Membership Administrator (dengler@botanik.uni-hamburg.de).

Arbeitsgruppe Trockenrasen (Germany): Thomas Becker (beckerth@uni-trier.de) and Ute Jandt (jandt@botanik.uni-halle.de): 213

Working Group on Dry Grasslands in the Nordic and Baltic Region (contact: Jürgen Dengler - dengler@botanik.uni-hamburg.de): 83 members

South-East European Dry Grasslands (SEEDGG) (contact: Iva Apostolova - iva@bio.bas.bg): 218 members

Mediterranean Dry Grasslands (Med-DG) (contact: Michael Vrahnakis - mvrahnak@teilar.gr): 281 members

Topical Subgroup Grassland Conservation and Restoration (contact: Péter Török - molinia@gmail.com): 52 members

EDGG Executive Committee and responsibilities of its members

Jürgen Dengler: Membership Administrator, Coordinator for Special Features, Coordinator for EDGG Expeditions, Book Review Editor, Deputy Contact Officer to other organisations.

Monika Janišová: Editor-in-Chief of the Bulletin of the EDGG, Representative to the IAVS, Deputy Meetings Coordinator.

Solvita Rūsiņa: Editor-in-Chief of the EDGG homepage (incl. other electronic media).

Péter Török: Contact Officer to other organisations, Deputy-Secretary-General, Deputy-Officer of the Special Policy Committee

Stephen Venn: Secretary-General, Deputy-Editor-in-Chief of the EDGG homepage (incl. other electronic media).

Michael Vrahnakis: Meetings Coordinator, Officer of the Special Policy Committee.

Conferences co-organised by EDGG

This autumn, EDGG is co-organising two international conferences:

- On 26–27 September, the Brandenburg Academy “Criewen Castle” is inviting to a trilingual (English, German, Polish) conference/workshop in the Nationalpark Lower Odra Valley, NE Germany, on “Concepts for modern management of xeric grasslands between nature conservation and agriculture”. More information is available here: <http://www.edgg.org/pdf/program%20dry%20grassland.pdf/>; registration is possible until 16 September with this form (<http://www.edgg.org/pdf/registration%20form%20dry%20grassland.doc>).
- The international conference Open Landscapes 2013 – Ecology, Management and Nature Conservation will take place in Hildesheim, NW Germany, from 29 September to 3 October 2013. It is organised by our member Prof. Jasmin Mantilla-Contreras and includes a broad topical variety, well-known keynote speakers from Europe and overseas and the option for some nice excursions. A nice

and informative conference homepage is available at: <http://www.open-landscapes2013.de/welcome/>. Registration is still possible (regular fee: 210 €, students: 170 €, EDGG members: 180 €, students who are EDGG members: 140 €).

Members of the EDGG Executive Committee will be present at both conferences, Mike Vrahnakis and Solvita Rusina in Criewen and Steve Venn and Jürgen Dengler in Hildesheim. Topically suitable contributions from both conferences can be published in the 2014 Special Issue of the international journal *Hacquetia* (see EDGG Special Issues/Special Features 2014 – Invitation to contribute).

Membership development

The European Dry Grassland Meeting in Poland gave our membership development another push. As of 10 September 2013, EDGG had 947 members from 58 countries and all continents except Antarctica. The five countries with the largest number of members were Germany (222), Greece (130), Poland (60), Ukraine (44) and Italy (42).

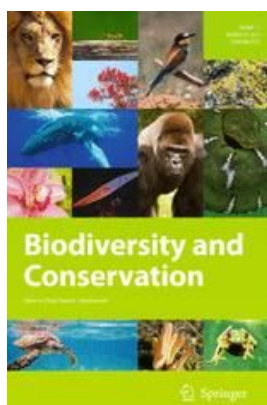


European Dry Grassland Meeting in Zamość, Poland. During the poster session each poster was presented for several minutes by its author. Photo: J. Dengler

EDGG Special Issues/Special Features 2013

In 2013, EDGG is producing five different Special Features/Special Issues in international journals. The first two have been published in September, the third is ongoing, and the last two will appear by end of this year. If you are interested in the published or in-press papers, you can use the given e-mail addresses to ask for a copy. EDGG thanks all editors, reviewers and authors who made the publication of these diverse and high-quality collections of articles possible.

(1) Special Issue of *Biodiversity and Conservation*



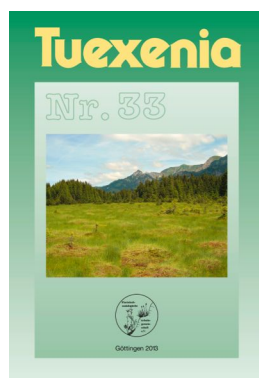
The 300-page Special Issue in Biodiversity and Conservation (impact factor = 2.264) on grassland diversity and guest-edited by EDGG members Jan Christian Habel (DE), Jürgen Dengler (DE), Monika Janišová (SK), Péter Török (HU), Camilla Wellstein (IT) & Michal Wiezik (SK) consists of 18 papers. We are happy to announce that this is the first EDGG Special Feature ever in which zoological and botanical contributions are balanced.

- Habel, J.C., Dengler, J., Janišová, M., Török, P., Wellstein, C., Wiezik, M. (2013): European grassland ecosystems: threatened hotspots of biodiversity. *Biodivers. Conserv.* 22: 2131–2138. [available from: janchristianhabel@gmx.de]
- Horváth, R., Magura, T., Szinetár, C., Eichardt, J., Tóthmérész, B. (2013): Large and least isolated fragments preserve habitat specialist spiders best in dry sandy grasslands in Hungary. *Biodivers. Conserv.* 22: 2139–2150. [available from: horvath.roland@science.unideb.hu]
- Moeslund, J.E., Arge, L., Bøcher, P.K., Dalgaard, T., Ejrnæs, R., Odgaard, M.V., Svenning, J.-C. (2013): Topographically controlled soil moisture drives plant diversity patterns within grasslands. *Biodivers. Conserv.* 22: 2151–2166. [available from: mjesper.moeslund@biology.au.dk]
- Weiss, N., Zucchi, H., Hochkirch, A. (2013): The effect of grassland management and aspect on Orthopteran diversity and abundance: site conditions are as important as management. *Biodivers. Conserv.* 22: 2167–2178. [available from: hochkirch@uni-trier.de]
- Zelnik, I., Čarni, A. (2013): Plant species diversity and composition of wet grasslands in relation to environmental factors. *Biodivers. Conserv.* 22: 2179–2192. [available from: igor.zelnik@bf.uni-lj.si]
- Morris, E.K., Buscot, F., Herbst, C., Meiners, T., Obermaier, E., Wäschke, N.W., Wubet, T., Rillig, M.C. (2013): Land use and host neighbour identity effects on arbuscular mycorrhizal fungal community composition in focal plant rhizosphere. *Biodivers. Conserv.* 22: 2193–2205. [morrisk10@xavier.edu]
- Pipenbahr, N., Kaligarič, M., Mason, N.W.H., Škornik, S. (2013): Dry calcareous grasslands from two neighbouring biogeographic regions: relationship between plant traits and rarity. *Biodivers. Conserv.* 22: 2207–2221. [available from: natasa.pipenbahr@uni-mb.si]
- Filz, K.J., Engler, J.O., Stoffels, J., Weitzel, M., Schmitt, T. (2013): Missing the target? A critical view of butterfly conservation efforts of calcareous grasslands in south-western Germany. *Biodivers. Conserv.* 22: 2223–2241. [available from: kfilz@yahoo.de]
- Albrecht, H., Haider, S. (2013): Species diversity and life history traits in calcareous grasslands vary along an urbanization gradient. *Biodivers. Conserv.* 22: 2243–2267. [available from: albrecht@wzw.tum.de]
- Bieringer, G., Zulka, K.P., Milaszowsky, N., Sauberer, N. (2013): Edge effect of a pine plantation reduces dry grassland invertebrate richness. *Biodivers. Conserv.* 22: 2269–2283. [available from: georg.bieringer@aon.at]
- Bonanomi, G., Incerti, G., Allegranza, M. (2013): Assessing the impact of land abandonment, nitrogen enrichment and fairy-ring fungi on plant diversity of Mediterranean grasslands. *Biodivers. Conserv.* 22: 2285–2304. [available from: giuliano.bonanomi@unina.it]
- Wiezik, M., Svitok, M., Wieziková, A., Dovčiak, M. (2013): Shrub encroachment alters composition and diversity of ant communities in abandoned grasslands of western Carpathians. *Biodivers. Conserv.* 22: 2305–2320. [available from: wiezik@post.sk]
- Rácz, I.A., Déri, E., Kisfali, M., Batiz, Z., Varga, K., Szabó, G., Lengyel, S. (2013): Early changes of orthopteran assemblages after grassland restoration: a comparison of space-for-time substitution versus repeated measures monitoring. *Biodivers. Conserv.* 22: 2321–2335. [available from: szabolcs.lengyel@yahoo.com]
- Lauterbach, D., Römermann, C., Jeltsch, F., Ristow, M. (2013): Factors driving plant rarity in dry grasslands on different spatial scales: a functional trait approach. *Biodivers. Conserv.* 22: 2337–2335. [available from: daniel.lauterbach@tu-berlin.de]
- Wellstein, C., Chelli, S., Campetella, G., Bartha, S., Galiè, M., Spada, F., Canullo, R. (2013): Intraspecific phenotypic variability of plant functional traits in contrasting mountain grassland habitats. *Biodivers. Conserv.* 22: 2535–2574. [available from: camilla.wellstein@uni-bayreuth.de]
- Pluess, A.R. (2013): Meta-analysis reveals microevolution in grassland plant species under contrasting management. *Biodivers. Conserv.* 22: 2375–2400. [available from: andrea.pluess@env.ethz.ch]

Habel, J.C., Rödder, D., Lens, L., Schmitt, T. (2013): The genetic signature of ecologically different grassland Lepidopterans. *Biodivers. Conserv.* 22: 2401–2411. [available from: janchristianhabel@gmx.de]

Habel, J.C., Gossner, M.M., Meyer, S., Eggermont, H., Lens, L., Dengler, J., Weisser, W.W. (2013): Mind the gaps when using science to address conservation concerns. *Biodivers. Conserv.* 22: 2413–2427. [available from: janchristianhabel@gmx.de]

(2) Dry Grassland Special Feature in *Tuexenia* 2013



The 8th Dry Grassland Special Feature in *Tuexenia*, guest-edited by Thomas Becker (DE), Triin Reitalu (EE), Eszter Ruprecht (RO) and Jürgen Dengler (DE) comprises 7 articles and approx. 170 pp. Soon all articles will become available open access on the *Tuexenia* and EDGG homepages.

Becker T., Reitalu T., Ruprecht E., Dengler J. (2013): Dry grassland of Europe: biodiversity, classification, conservation and management – Editorial to the 8th Dry Grassland Special Feature. *Tuexenia* 33: 285–291. [available from: beckerth@uni-trier.de]

Kasari, L., Gazol, A., Kalwij, J.M., Helm, A. (2013): Low shrub cover in alvar grasslands increases small-scale diversity by promoting the occurrence of generalist species. *Tuexenia* 33: 293–308. [available from: lkasari@ut.ee]

Pedashenko, H., Apostolova, I., Boch, S., Ganeva, A., Janišová, M., Sopotlieva, D., Todorova, S., Ůnal, A., Vassilev, K., Velev, N., Dengler, J. (2013): Dry grasslands of NW Bulgarian mountains: first insights into diversity, ecology and syntaxonomy. *Tuexenia* 33: 309–346. [available from: juergen.dengler@uni-bayreuth.de]

Rusina, S., Puspure, I., Gustina, L. (2013): Diversity patterns in transitional grassland areas in floodplain landscapes with different heterogeneity. *Tuexenia* 33: 347–369. [available from: rusina@lu.lv]

Janišová, M., Ujházy, K., Uhliarová, E. (2013): Phytosociology and ecology of *Avenula adsurgens* subsp. *adsurgens* in Carpathian grasslands. *Tuexenia* 33: 371–398. [available from: monika.janisova@gmail.com]

Willner, W., Sauberer, N., Staudinger, M., Schratte-Ehrendorfer, L. (2013): Syntaxonomical revision of the Pannonian grasslands of Austria - Part I: Introduction and general overview. *Tuexenia* 33: 399–420. [available from: wolfgang.willner@vinca.at]

Willner, W., Sauberer, N., Staudinger, M., Grass, V., Kraus, R., Moser, D., Rötzer, H., Wrška, T. (2013): Syntaxonomical revision of the Pannonian grasslands

of Austria - Part II: Vienna Woods (Wienerwald). *Tuexenia* 33: 421–458. [available from: wolfgang.willner@vinca.at]

(3) Virtual Special Feature of *Applied Vegetation Science*



The joint Virtual Special Feature (VSF) by EDGG and EVS in *Applied Vegetation Science* (impact factor = 2.263) on large-scale classification of grasslands s.l. started with two contributions in the July issue. In an editorial, guest editors Jürgen Dengler (DE), Erwin Bergmeier (DE), Wolfgang Willner (AT) and Milan Chytrý

explain the concept and importance of this article series whose publication will extend over the next 2–3 years. Meanwhile one further paper has been accepted and is in press.

Dengler, J., Bergmeier, E., Willner, W., Chytrý, M. (2013): Towards a consistent classification of European grasslands. *Appl. Veg. Sci.* 16: 518–520. [open access from: <http://onlinelibrary.wiley.com/doi/10.1111/avsc.12041/pdf>]

Eliš, P. jr., Sopotlieva, D., Dítě, D., Hájková, P., Apostolova, I., Senko, D., Melečková, Z., Hájek, M. (2013): Vegetation diversity of salt-rich grasslands in Southeast Europe. *Appl. Veg. Sci.* 16: 521–537. [open access from: <http://onlinelibrary.wiley.com/doi/10.1111/avsc.12017/pdf>]

Jiménez-Alfaro, B., Hájek, M., Ejrnaes, R., Rodwell, J., Pawlikowski, P., Weeda, E.J., Laitinen, J., Moen, A., Bergamini, A., Aunina, L., Sekulová, L., Tahvaninen, T., Gillet, F., Jandt, U., Dítě, D., Hájková, P., Corriol, G., Kondelin, H., Díaz, T.E. (in press): Biogeographic patterns of base-rich fen vegetation across Europe. *Appl. Veg. Sci.* [available from: borja@sci.muni.cz]

(4) Special Issue of *Agriculture, Ecosystems and Environment*

The Special Issue of *Agriculture, Ecosystems and Environment* (impact factor = 2.859) on diversity in Palaearctic dry grasslands and steppes, guest edited by Jürgen Dengler (DE), Monika Janišová (SK), Péter Török (HU) and Camilla Wellstein (IT) is developing well. Eight papers have already been accepted and are mostly available online first, five more contributions are in the last stages of the review process, so that we can anticipate the publication of the print issue during the next couple of months:

Babai, D., Molnár, Z. (in press): Small-scale traditional management of highly species-rich grasslands in the Carpathians. *Agric. Ecosyst. Environ.* [available from: babai.daniel@gmail.com]

Janišová, M., Michalcová, D., Bacaro, G., Ghisla, A. (in press). Landscape effects on diversity of semi-natural

grasslands. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.05.022. [available from: monika.janisova@gmail.com]

Niu, K., Choler, P., de Bello, F., Mirotchnick, N., Du, G., Sun, S. (in press): Fertilization decreases species diversity but increases functional diversity: A three-year experiment in a Tibetan alpine meadow. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.07.015. [available from: kechangniu@nju.edu.cn]

Prach, K., Jongepierová, I., Řehouňková, K., Fajmon, K. (in press): Restoration of grasslands on ex-arable land using regional and commercial seed mixtures and spontaneous succession: Successional trajectories and changes in species richness. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.06.003. [available from: prach@prf.jcu.cz]

Rédei, T., Sztár, K., Czúcz, B., Barabás, S., Lellei-Kovács, E., Pándi, I., Somay, L., Csecserits, A. (in press): Weak evidence of long-term extinction debt in Pannonian dry sand grasslands. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.07.016. [available from: redei.tamas@okologia.mta.hu]

Reitalu, T., Helm, A., Pärtel, M., Bengtsson, K., Gerhold, P., Rosén, E., Takkis, K., Znamenskiy, S., Prentice, H.C. (in press): Determinants of fine-scale plant diversity in dry calcareous grasslands within the Baltic Sea region. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2012.11.005. [available from: triin.reitalu@mail.ee]

Wanner, A., Suchrow, S., Kiehl, K., Meyer, W., Pohlmann, N., Stock, M., Jensen, K. (in press): Scale matters: Impact of management regime on plant species richness and vegetation type diversity in Wadden Sea salt marshes. *Agric. Ecosyst. Environ.* [available from: antonia.wanner@botanik.uni-hamburg.de]

Valkó, O., Tóthmérész, B., Kelemen, A., Simon, E., Migléc, T., Lukács, B.A., Török, P. (in press): Environmental factors driving seed bank diversity in alkali grasslands. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.06.012. [available from: molinia@gmail.com]

Zeiter, M., Preuschkas, J., Stampfli, A. (in press): Seed availability in hay meadows: Land-use intensification promotes seed rain but not the persistent seed bank. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.03.009. [available from: michaela.zeiter@ips.unibe.ch]

(ES) and Ioannis Tsiripidis (GR). The first article has been accepted and is in press, approximate one dozen more are in the review and revision process.

Foggi, B., Lastrucci, L., Gennai, M., Viciani, D. (in press): The *Festuco-Brometea* grasslands on sandstone and marl-clay sandstone substrate in Tuscany (northern-central Italy). *Hacquetia*. [available from: bruno.foggi@unifi.it]

EDGG Special Issues/Special Features 2014 - Invitation to contribute

We are proud to announce that EDGG will continue its long-standing tradition of Special Issues/Features of international journals also in 2014. There will be one Special Feature in *Tuexenia* and a complete Special Issue in *Hacquetia*. All EDGG members are invited to contribute their research to these attractive publications. We were able to gain two very international and experienced teams of EDGG members as guest editors. In both cases, submissions of full papers are only possible after invitation following a prior evaluation of an abstract by the team of guest editors (but see the exception for *Tuexenia*). Details on both publication options are given below:

(1) Special Feature in *Tuexenia* 2014

Topic: Fundamental research on flora and vegetation of dry grasslands in Europe and adjacent regions. This includes vegetation classification, biodiversity patterns, population biology of plants, animal-plant interactions (note that in this year papers mainly focussing on conservation and management should be directed to the *Hacquetia* SI).

Guest editors: Thomas Becker (chair; Trier, Germany), Steffen Boch (Bern, Switzerland, <http://scholar.google.de/citations?user=QM2YrLUAAAAJ>), Monika Janišová (Banská Bystrica, Slovakia, <http://scholar.google.com/citations?user=bQ8o3uQAAAAJ>), Triin Reitalu (Tallinn, Estonia, http://scholar.google.de/citations?user=jVK_50AAAAAJ) & Eszter Ruprecht (Cluj-Napoca, Romania, <http://scholar.google.de/citations?user=qaTh9tYAAAAJ>).

About the journal: Covered by SCOPUS and Web of Science, will get its first Impact Factor for 2013; open access, full colour, longer articles and oversize vegetation tables free of charge, homepage: http://www.tuexenia.de/index.php?id=14&no_cache=1&L=0.

About the Special Feature: approx. 4–8 articles, will be published in June 2014.

Eligible contributions: Poster and oral contributions of the European Dry Grassland Meeting 2013 in Poland and any article authored by EDGG members.

Procedure: Please submit an abstract of your planned paper (for the pre-evaluation structured in Aims, Location, Methods, Results, Conclusions; including

(5) Special Issue of *Hacquetia*

End of 2013, the first EDGG-edited Special Issue will appear in our new partner journal *Hacquetia*. It focuses on dry grasslands in the Mediterranean and sub-Mediterranean regions of Europe and is guest-edited by Jürgen Dengler (DE), Iva Apostolova (BG), Romeo Di Pietro (IT), Rosario Gavillán



names and addresses of all co-authors) to the chair of guest editors (beckerth@uni-trier.de) by **30 September 2013** (deadline extended by 2 weeks!). These abstracts will be evaluated by the guest editors and those selected will be invited for full submission by approx. end of September. Papers first- or senior-authored by persons who had at least two papers in the Tuexenia Dry Grassland Special Features (editorials not counted) can be submitted at any time without prior evaluation of an abstract. However, also in this case we strongly recommend that you announce your planned paper as early as possible to beckerth@uni-trier.de. In order to ensure publication in the SF 2014, you should submit your full paper by November 2013; if it comes too late, it might be transferred to the SF 2015.

(2) Special Issue in Hacquetia 2014

Topic: Conservation value, management and restoration of Europe's semi-natural open habitats. This includes both zoological and botanical contributions and papers on dry grasslands as well as other open, semi-natural habitats, such as wet meadows, wooded pastures or heathlands (note that in this year papers focussing on fundamental vegetation ecological research should be directed to the Tuexenia SF).

Guest editors: Jürgen Dengler (chair; Bayreuth, Leipzig & Hamburg, Germany, <http://scholar.google.de/citations?hl=de&user=j-9uXQ8AAAAJ>), Marta Carboni (Rome, Italy, soon moving to France, <http://scholar.google.de/citations?user=StjmWrAAAAAJ>), Jasmin Mantilla-Contreras (Hildesheim, Germany, <http://scholar.google.de/citations?user=cVQmF1EAAAAJ>), Péter Török (Debrecen, Hungary), Stephen Venn (Helsinki, Finland, <http://scholar.google.hu/citations?user=7ho2aw8AAAAJ>) & Michal Zmihorski (Warsaw, Poland, <http://scholar.google.de/citations?user=1sF6YvQAAAAJ>).

About the journal: Covered by SCOPUS, has applied for inclusion in the Web of Science; open access and full colour free of charge; homepage: <http://www.degruyter.com/view/j/hacq>.

About the Special Issue: approx. 7–15 articles, will be published in December 2014.

Eligible contributions: Poster and oral contributions of the European Dry Grassland Meeting 2013 in Zamość, Poland, the Xeric grassland conference in Crieven, Germany and the Open Landscapes 2013 conference in Hildesheim, Germany as well as any article authored by EDGG members.

Procedure: Please submit an abstract of your planned paper (for the pre-evaluation structured in Aims, Location, Methods, Results, Conclusions; including names and addresses of all co-authors) to the chair of guest editors (juergen.dengler@uni-bayreuth.de) by **15 October 2013**. These abstracts will be evaluated by the guest editors and those selected will be invited for full submission by approx. end of October. Only papers that have been invited after evaluation of the abstract can be submitted and this should be done by April 2014.

We look forward to receiving many exciting papers for our two Special Features 2014!



Cetonia aurata. Photo: J. Dengler



Silene nutans. Photo: J. Dengler



Racomitrium canescens agg. Photo: J. Dengler



Tulostoma brumale. Photo: J. Dengler

European Grassland Archive

On 10 July 2013, EDGG, our sister organisation EVS (European Vegetation Survey; <http://euroveg.org/>) and the European research project SIGNAL (European gradients of resilience in the face of climate extremes; <http://www.bayceer.uni-bayreuth.de/signal/>) agreed to join forces in the establishment of a comprehensive pan-European vegetation-plot database, the **European Grassland Archive (EGA)**. EGA will cover **all types of grasslands**, not only dry grasslands and steppes, but also wet grasslands, saline grasslands, alpine grasslands, Mediterranean grasslands, and this for **all of Europe from the Atlantic to the Urals + Turkey, Cyprus, Georgia, Armenia and Azerbaijan**.

These efforts are happening in the context of the Braun-Blanquet project of the EVS on a database platform jointly used by Braun-Blanquet project and EGA. Establishing such a continent-wide database with hundreds of thousands of relevés opens a whole realm of analytical possibilities that were not accessible before. The three hosting organisations, each have their own core focus, mainly in three fields:

- development of continent-wide consistent vegetation classifications (EDGG);
- parameterisation of syntaxa (EVS);
- plot-based analysis of diversity patterns and neophyte distributions (SIGNAL).

However, the forthcoming publications will be prepared jointly. Additionally, many other exciting studies beyond these core topics are possible, e.g. on trait patterns and community assembly rules.

On the following pages, we have reproduced the Data Property and Governance Rules of EGA as they have been developed and signed by the representatives of the three founding organisations, Monika Janišová, Milan Chytrý and Jürgen Dengler. We believe that these Rules are fair and attractive as they offer to those who contribute regional or national databases or help with the

data integration at the European scale have the unique opportunity to co-author various high-ranked papers.

Obviously, there is quite something to do for many persons before EGA is established and allows exciting studies to be carried out at the European scale. While the two other founding organisations, EVS and SIGNAL have already devoted major work force to EGA, we would like to encourage you, the EDGG members, to support this project also very actively.

Activities with which you could contribute to EGA include:

- Make your own vegetation plot data available for the use in EGA, preferably through larger regional and national databases.
- Where there are already national databases existing, convince their managers to join the couple Braun-Blanquet project (for non grasslands) & EGA (for grasslands); where there are no national databases existing/functioning yet, push the holders of smaller databases to join up to create such national databases (e.g. Greece, Ukraine,...)
- Help the core team with joining and unifying the plot data from the various sources at a European scale (this involves standardising species nomenclature, standardising header data and geo-referencing plots)
- Digitise additional plots from the literature in regions with a poor coverage in the available databases (e.g. Fennoscandia, France, parts of southern Europe, Romania, Eastern Europe)

Of course those who contribute actively to the establishment of EGA will be rewarded by co-authorships and by the possibility to be the first to carry out novel analyses at the European scale. If you wish to contribute in one or another way or have any questions, do not hesitate to contact the EGA Coordinator, Jürgen Dengler (juergen.dengler@uni-bayreuth.de).

Data Property and Governance Rules

1. Status of EGA

(a) The EGA is jointly organised and hosted by the BiodivERsA project SIGNAL (further: SIGNAL), the Braun-Blanquet project of the European Vegetation Survey (further: EVS) and the European Dry Grassland Group (further: EDGG).

(b) While EVS is mainly responsible for technical set-up of the database, SIGNAL and EDGG will contribute by retrieving and entering additional datasets through their members, possibly digitise data from poorly documented regions and care for data integration and standardisation within the Braun-Blanquet project regarding grassland syntaxa.

(c) The original databases that contribute to the EGA will remain in place and continue their activities in data acquisition, editing and use for various purposes. It is expected that data updates and corrections will be mainly done in the original databases rather than the EGA, and data updates from the original databases will periodically be sent to the EGA to replace previous, outdated versions.

2. Purpose of EGA

(a) Within the framework of SIGNAL, EGA data will be used for analyses and papers describing the plot-scale richness of grasslands across Europe, as well as the fraction and identity of neophytes and legumes in European grasslands.

- (b) Within the framework of EVS, EGA data will be used to characterise and parameterise grassland vegetation types across Europe as planned in the Braun-Blanquet project.
- (c) Within the framework of EDGG, EGA data will be used for supranational classification of grassland syntaxa in Europe.
- (d) Upon request and in accordance with Articles 6 and 7 of these Rules, EGA data can also be made available for other analyses and publications at continental or at least multinational scale.

3. Data contribution

- (a) Data can be contributed to the EGA only upon invitation by the Steering Committee or by an authorized representative of the Steering Committee. Data owners can propose their data for inclusion in the EGA, but the Steering Committee is free to accept or decline such an offer.
- (b) Data are contributed to the EGA by custodians. A custodian is a person who owns the contributed data or an authorised representative of all contributors in the case of a collective data (i.e. a data set containing data contributed by more than one person). EGA will deal only with custodians. Collective databases nominate their custodians according to their own rules and are free to change them at any time.
- (c) In the case of collective data sets, it is their custodian's responsibility to solve intellectual property rights and authorship rules within the group of contributors before the data are contributed to the EGA. EGA will not take any responsibility for data mishandling on the part of the custodians.
- (d) All data contributed to the EGA database remain an intellectual property of data contributors and may be withdrawn at any time. This possibility does not affect data that have already been released for specific analyses according to Article 6.

4. EGA Consortium

- (a) The EGA Consortium consists of (1) the owners of vegetation-plot databases (represented by their custodians) who have provided their data to the EGA according to the specifications set by the EGA Steering Committee, (2) the SIGNAL Steering Committee members and (3) the national site representatives of SIGNAL. Additionally, (4) the Braun-Blanquet project of EVS and (5) EDGG and can nominate up to three EGA Consortium members each. Finally, (6) the EGA Steering Committee can appoint scientists as Consortium members who contributed significantly to the set-up and analysis of EGA.
- (b) Access to EGA data is restricted to EGA Consortium members.
- (c) The names and contact data of the EGA Consortium members can be published on the home pages of the hosting organizations.

5. EGA Steering Committee

- (a) The EGA Consortium has a Steering Committee, consisting of three members nominated by SIGNAL, EVS and EDGG, respectively. The Steering Committee is chaired by the person nominated by SIGNAL.
- (b) The Steering Committee is responsible for invitation of data contributors, dealing with data requests, supervision of technical development of the EGA platform, and decisions on any issue not dealt with in these Rules. Such decisions are made with majority vote.
- (c) The Steering Committee can change these Rules (except for Article 8b) by unanimous vote. Such changes of the Rules become active one month after they have been announced to the EGA Consortium.

6. Data request, release and use

- (a) Only members of the EGA Consortium can request data from the EGA for specific research projects and subsequent publications.
- (b) EGA provides data only for European, inter-continental or at least multinational analyses, not for regional or national studies. (c) Proposals of the research projects based on the EGA data are to be sent to the EGA Steering Committee. The proposal should contain (1) applicant's name and address, (2) names of all potential co-authors from outside (obligatory) and from inside (non-obligatory) the EGA Consortium, (3) project title, (4) brief description of aims and methods of the study, (5) estimated time of delivery of results, e.g. manuscript submission, (6) specification of the data needed, (7) envisaged publication(s), (8) explicit statement that the applicant agrees with these Rules.
- (d) Each proposal will be considered by the EGA Steering Committee, which will check (1) whether the applicant is eligible to obtain data according to these Rules and, if so, (2) whether there is a reasonable link between the aims, expected outputs and data requested, and (3) whether these Rules are respected. If these conditions are met, the Steering Committee will inform the respective data contributors, who then have two weeks to inform the Steering Committee about any objections for data release.
- (e) If there are no valid objections, the EGA Steering Committee will arrange the data release. Upon data release, the EGA Steering Committee will send the approved project proposal to the whole EGA Consortium and inform it which

amount of data of which contributors has been released.

(e) Under no circumstances can the released data be shared with third parties not listed in the project proposal or used for purposes not mentioned in the project proposal.

7. Authorship arrangements

(a) All data owners and custodians in the EGA Consortium who have contributed data at the time of paper preparation, as well as the responsible(s) of processing the common dataset, will become co-authors of the first planned paper describing and analysing plot-scale diversity in European grasslands unless they declare not to wish to be a co-author of this (opt-out paper).

(b) Any other paper planned from EGA data belongs to the category of opt-in papers. This means that members of the EGA Consortium can declare their willingness to join the paper project as active co-authors during a period of one month after the project proposal has been distributed. The lead author is obliged to accept such offers from the representatives of those databases whose data he/she is planning to use, but is free to decline offers of non-contributing EGA Consortium members.

(c) It is a responsibility of a project leader to enable all registered potential co-authors to give intellectual input to the studies that use their data. Each lead author must inform the author team of the concept of the paper and co-authorship plans early in the process. Data providers should also receive the results of the first analyses, the first paper draft and the final manuscript at least two weeks before submission.

(d) Custodians representing collective databases should handle any offer of co-authorship received via EGA according to the internal rules or established practices of their database, for instance, by proper allocation of the right of co-authorship to the person(s) who contributed to their database most of the data used for the particular project.

(e) In case of opt-in papers, significant intellectual input and/or significant data input (particularly of unpublished data) or a combination of both should lead to co-authorship. In case of uncertainty on the co-authorship arrangements, inclusive rather than exclusive principles should be applied. In case of dispute about co-authorship arrangements, each EGA Consortium member can appeal to the EGA Steering Committee to ensure a solution in accordance with the spirit of these Rules.

8. Potential future uses of data

(a) EGA intends to cooperate with other emerging large-scale vegetation-plot initiatives, like sPlot (Global Vegetation-Plot and Trait Database of sDiv) and EVA (European Vegetation Archive). If such databases are interested in EGA data, the EGA Steering Committee will aim at negotiating an attractive set of rules for EGA data contributors. If successful, the Steering Committee will propose to join this agreement to those EGA contributors whose data are requested by the other initiative. EGA Consortium members are free to accept or decline such an offer and only data of those EGA data contributors who have accepted will be transferred to the other initiative by EGA.

(b) Less restrictive access to EGA data than defined in the present Rules can only be adopted by a two-third vote of the EGA Consortium members in an electronic ballot extending over one month. If such a proposal finds the necessary majority, it becomes active two months later. During this period the contributors who do not agree with such a change of the Rules can inform the Steering Committee that they wish to withdraw their data.

9. Dissolution of EGA or of its hosting organizations

(a) If one of the three hosting organizations of EGA should cease to exist, it can either assign its previous rights (including the seat in the Steering Committee) to another organization/institution/individual person of its own choice or resign without replacement. This does not affect the data already included in EGA and their usage according to these Rules.

(b) EGA can be dissolved only by unanimous vote of the three hosting organizations. In such a case, the Steering Committee can propose to the EGA Consortium to transfer the EGA data to another supranational vegetation-plot database. Before such a decision becomes active, all EGA data contributors have to be informed and have the right to withdraw their data from EGA during a two-month period.

Approved by the representatives of SIGNAL, EVS and EDGG,

Bayreuth, Brno and Banská Bystrica, 10 July 2013

Dr. Jürgen Dengler (SIGNAL) Prof. Dr. Milan Chytrý (EVS) Dr. Monika Janišová (EDGG)

News from our members

With this section we offer to those EDGG members who recently finished a BSc., MSc., PhD or Habilitation thesis on a dry grassland-related topic the option to announce this fact together with short indication of (research) interests and, if you like, future plans. If you belong to this group, please send the information together with a photo to monika.janisova@gmail.com.



On Monday 16 August 2013 the promotion of **Dr Michael Vrahnakis** from Assistant Professor to Associate Professor was officially announced in the State's Gazette of Greece. Mike teaches the courses of Rangeland Ecology, Rangeland Management, and Assessment of Biodiversity in the Department of Forestry and Management of Natural Environment of Technological Educational Institute of Thessaly, Greece. Soon he will move to the Department of Agronomy, within the same Institute. Mike is an active member of the EDGG, he was the organizer of the 9th EDGM in Prespa (2012), and from 2010 he holds position in the Executive Committee of our Organization, responsible for EDGMs (Meetings Coordinator), and the policy sector of the EDGG (Officer of the Special Policy Committee).

Congratulations from the EDGG Executive Committee!

Stephen Venn defended his Ph.D. thesis entitled '**Managing forest and meadow habitats for the enhancement of urban biodiversity– messages from carabid beetles and vascular plants**' at the Faculty of Biological and Environmental Sciences of the University of Helsinki, on 9 August 2013. His opponent was Dr. Alvin Helden of Anglia Ruskin University, Cambridge, UK and the custos was Professor Otso Ovaskainen of the University of Helsinki.

Abstract: In this thesis I use carabid beetles (*Coleoptera*, *Carabidae*) and vascular plants to investigate the ecological effects of urbanization on forested and dry meadow habitats in the city of Helsinki, Finland. I also investigate factors that affect species diversity and the occurrence of rare and sensitive species in particular, in order to draft recommendations for habitat management for the enhancement of urban biodiversity. Urbanization gradient analyses are conducted using multivariate ordination analyses to elucidate assemblage level responses, ANOVA is applied to determine the assemblage level response of spruce forest carabid assemblages and GLMM is used to model individual species responses. The results suggest that, in contrast to Gray's suggestion, Preston's log-normal does not accurately describe the species distributions of carabid beetles in the studied habitats but rather they follow the predictions of Fisher's log series, which is in keeping with the predictions of Hubbell's unified neutral theory. I conclude that fragmentation, isolation and homogenization are the main problems regarding maintenance of urban biodiversity, and that biodiversity strategies should focus on the conservation of stenotopic species. In particular, habitats and ecologically important microhabitat conditions should be retained in as large and contiguous a form as possible. For instance, spruce forest habitats need to be managed to maintain shady, cool and moist conditions and dry meadows should be mown late in the season and the cut vegetation removed. Additionally, supplementation of habitat networks should be implemented, by habitat restoration and habitat creation, such as the construction of dry meadows on landfills and noise abatement banks.

Steve's thesis is accessible in pdf format via the eThesis service of the University of Helsinki using the following link: <http://urn.fi/URN:ISBN:978-952-10-9050-9>

Congratulations from the EDGG Executive Committee!



EDGG Meeting in Russia (5-15 June 2014)

A short introduction of conference area and excursion guide

The 11h European Dry Grassland Meeting is planned to be held in Russia under the auspices of the Museum-Reserve “The Kulikovo Field” (<http://www.kulpole.ru/en/>) and the support of the Central Black Earth State Reserve of Professor V.V. Alekhine (<http://zapoved-kursk.ru/>) and the State M. Sholokhov Museum-Reserve (<http://eng.sholokhov.ru>). The meeting will take place in the Kulikovo field scientific centre (south-east of the Tula region, 300 km to south from Moscow).

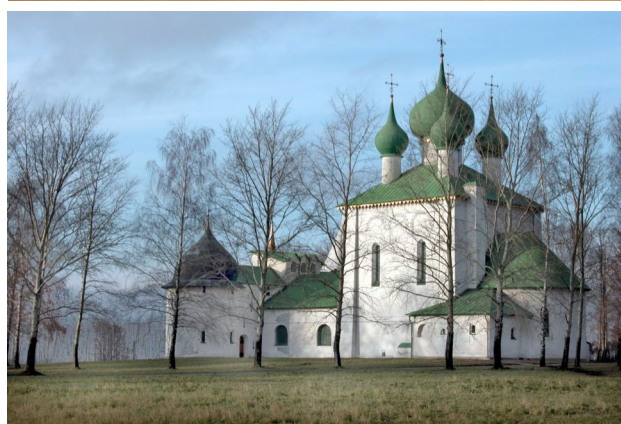
The title of the conference is “**European steppes and semi-natural dry grasslands: ecology, transformation and restoration**”.

The meeting will consist of two parts:

1. **Conference** (including presentations, discussions and 3 excursions to the protected steppe areas of Tula region and experimental fields of steppe vegetation restoration).
2. **Post-conference excursion.** The main goal is to visit the exceptional un-ploughed steppes of Central Black Earth State Reserve, Kursk region and the chalk and sand steppes of the State M. Sholokhov Museum-Reserve, Rostov region.

In the text below we provide a short introduction to all of the excursion areas for the 11h European Dry Grassland Meeting in Russia:

The **Tula region** covers an area of 26 km² and is situated between forest (mixed and broadleaf forests) and forest-steppe vegetation zones. The flora of the Tula region contains 1329 species. The forest-steppe vegetation is typical for south and south-east part of Russia. Most of the unic steppe communities are protected areas (by local government) and present within the territory of Museum-Reserve “The Kulikovo Field”. The Museum was established in 1996 as a museum of the Kulikovo battle of 1380. It is the most important event in the history of the Medieval Russia, which to a great extent defined the further destiny of Russian State. The science museum staff conducts unprecedented theoretical and practical scientific work to restore the forest and steppe vegetation of the 14th century at the battlefield. This work includes scientific research and experimental-technological studies, combined with handwork and machine methods of planting of broad-leaved oak-groves and *Stipa* steppe. The detail and depth of research make the Kulikovo field one of the key facilities in Russia to study the interaction between humans and the environment.



Kulikovo pole Field Centre and historical sites in its vicinity.



*Protected area Srednyi Dubik (Tula region, upper picture) and *Paeonia tenuifolia* (Kursk region, lower picture)*

The steppe vegetation is presented by ass. *Gentiano cruciatae–Stipetum pennatae*, ass. *Stachyo rectae–Echinopetum ruthenici* (class *Festuco–Brometea*); ass. *Astragalo danici–Koelerietum cristatae* and community *Galium verum* [*Koelerio cristatae–Thymenion marschalliani*] (class *Molinio–Arrhenatheretea*). A lot of rare species grow in such plant communities: *Artemisia armeniaca*, *A. latifolia*, *Aster amellus*, *Centaurea ruthenica*, *C. sumensis*, *Echinops ritro*, *Scorzonera stricta*, *Campanula altaica*, *Gypsophila altissima*, *Helianthemum nummularium*, *Astragalus onobrychis*, *Oxytropis pilosa*, *Iris aphylla*, *Dracocephalum ruyschiana*, *Prunella grandiflora*, *Allium flavescens*, *Anthericum ramosum*, *Linum flavum*, *Helictotrichon desertorum*, *H. schellianum*, *Stipa capillata*, *S. pennata*, *S. pulcherrima*, *S. tirsia*, *Polygonum alpinum*, *Polygala sibirica*, *Adonis vernalis*, *Delphinium cuneatum*, *Amygdalus nana*, *Cotoneaster alaunicus*, *Spiraea crenata*, *Asperula cynanchica*. These types of communities are formed on the limestone slopes of Kulikovo Field area.

In total, the diversity of the Kulikovo Field area contains more than 700 species of plants, 906 species of insects, 9 species of amphibians, 3 species of reptiles, 120 species of birds, and 30 species of mammals.

Kursk region, Central Black Earth State Reserve of Professor V. V. Alekhine

The reserve located in Kursk region is the oldest and most well-known in our country and abroad. The area has been a reserve since 1979, has formed part of the global



The chalk slopes near the Don River



Steppe dominated by *Stipa pennata*

network of UNESCO biosphere reserves since 1998, is the holder of a Diploma of the Council of Europe, and in 2012 entered in the Emerald Network in Europe.

We can visit Strelets Steppe (2046 ha) which has never been ploughed (virgin). They are an excellent example of the most typical meadow steppes. These steppes avoided ploughing because they were used by archers and Cossacks in the community in the XVII century and were used only for mowing and partly grazing. They survived the XX century because in 1935 they became part of the Central Chernozem Reserve, established through the efforts of Professor V. V. Alekhine, who made an enormous contribution to the study of the steppes of Central Black Soil and especially the Kursk region.

The Strelets Steppe is upland meadow steppe characterized by outstanding performance for non-tropical vegetation species richness (87 species per m²), high productivity, colorful and rich in flora. Meadow-steppe vegetation creates typical black soils, the humus horizon of which extends to 1.5 m with up to 13 % humus content.

The flora of the reserve contains 1,287 species of vascular plants, including adventive herbaceous plants and woody plant introductions. The Strelets Steppe has 908 species. A lot of rare species grow here: *Stipa pennata*, *S. pulcherrima*, *S. tirsia*, *S. dasyphylla*, *Festuca valesiaca*, *Helictotrichon desertorum*, *Carex humilis*, *Thymus calcareus*, *Onosma tanaitica*, *Paeonia tenuifolia*, *Iris aphylla*, *Centaurea sumensis*, *Galatella linosyris*, *Scorzonera purpurea*, *Adonis vernalis*, *Linum flavum*, *L. nervosum*, *L. perenne*, *Hyacinthella leucophaea*, *Anemone sylvestris*, *Fritillaria ruthenica*, *F. meleagris*, *Pulsatilla patens*.

The fauna of reserve is also rich: over 4 thousand species of insects, 191 species of spiders, 10 species of amphibians, 5 species of reptiles (nimble and viviparous lizards, veretenitsa, and ordinary and steppe viper), 226 species of birds and 50 species of mammals.

Rostov region

The State M. Sholokhov Museum-Reserve (homeland of Mikhail Sholokhov, a great Russian writer). The State M.A. Sholokhov Museum-Reserve is widely known in Russia and abroad as a unique memorial of the Russian culture, the Cossack history and the nature of the river Don. The Museum-Reserve is situated in the Rostov Region on the territory of steppe zone. The preserved landscape area is 38,236 ha. The flora of the area contains more than 1500 species.

The fauna of Rostov region contains 70 species of mammals, about 300 species of birds, 11 species of reptiles, 6 species of amphibians.

Steppe communities are located on the chalk and sand sites and characterized by specific flora (*Stipa lessingiana*, *Festuca valesiaca*, *Limonium sareptanum*, *Gagea bulbifera*, *Kochia prostrata*, *Lepidium meyeri*, *Scrophularia cretacea*, *Artemisia salsoloides*, *Helichrysum arenarium*, *Hyssopus cretaceus*, *Thymus pallasianus*, *Onosma polychroma*, *Centaurea taliewii*).

Elena Volkova, Tula, Russia, convallaria@mail.ru

The 10th European Dry Grassland Meeting in Zamosc, Poland (24-31 May 2013)



Participants of the meeting on the main square of the Zamość. Photo: P. Chmielewski

On 24-31 May, the 10th European Dry Grassland Meeting took place in Zamość, Poland. Previous meetings were organized in Germany (Lüneburg, Münster, Freising, Kiel, Halle), Slovak Republic (Smolenice), Ukraine (Uman') and Greece (Prespa). The conference was organized within the framework of EU LIFE project LIFE08NAT/PL/000513 “**Conservation and restoration of xerothermic grasslands in Poland – theory and practice**” project implemented by the Naturalists' Club and Regional Directorate for Environmental Protection in Lublin, financed by European Union funding instrument LIFE+ and National Fund for Environmental Protection and Water Management.

The venue for the 10th EDGM was the Mercure Hotel, located in the beautiful 17th century Great Market Square in the old town of Zamość (UNESCO world heritage site). The conference was preceded on 24-26 May by an excursion to some interesting sandy grassland localities

in eastern Poland, which was guided by Łukasz Kozub and Iwona Dembicz from the University of Warsaw. Eighty two (82) EDGG members from 16 European countries (Austria, Belgium, Croatia, Czech Republic, Germany, Greece, Hungary, Italy, Latvia, Netherlands, Norway, Poland, Russia, Slovakia, Spain, Ukraine) and Asia (Israel and South Korea) took part in the meeting.

The conference focused on theoretical and practical aspects of dry grassland protection. Conservation means are crucial, since the area of dry grasslands in Poland is decreasing rapidly due to the changes in land uses.

The participants were welcomed by Monika Janišová and Jürgen Dengler of the EDGG Executive Committee and Katarzyna Barańska of the Naturalists' Club on a rainy morning. In total, 21 talks and 56 posters were presented during the oral and poster sessions. There was also a short slideshow presented on 27 May. The poster and oral sessions were led by members of the EDGG Executive





Katarzyna Barańska, Piotr Chmielewski and Anna Cwener organizing the meeting to the tiniest details. Photo: J. Dengler



Plenary lecture of Simona Bacchereti. Photo: P. Chmielewski



Plenary lecture of Péter Török. Photo: J. Dengler



Jürgen Dengler during the discussion. Photo: P. Chmielewski



Elena Volkova during the discussion. Photo: J. Dengler



Elena Volkova presenting the planned meeting in Tula. J. Dengler



Michał Żmihorski and Katarzyna Barańska. Photo: J. Dengler

Committee (Jürgen Dengler, Péter Török, Michael Vrahnakis, Monika Janišová) and representatives of the Naturalists' Club (Anna Cwener and Michał Żmihorski). The contributions dealt with dry grassland management measures (grazing, burning, examples and best practices), dry grassland restoration (deliberate and spontaneous) and various theoretical issues. During the lunch and coffee breaks, the participants had an opportunity to enjoy the exhibition entitled "Natura 2000/Lubelskie/PL" provided by the Society for Man and Nature from Lublin.

The sessions ended on 28th of May with the award ceremony for the Young Investigator Prizes and the EDGG General Assembly. The Young Investigator Prizes were handed to the best oral and poster contributors (below 34 years in age). The prizes consisted of books, photo albums, book vouchers from Wiley-Blackwell and boxes of chocolates from a local manufacturer. The winners were as follows:

Best oral presentation contributors

I. Rocco Labadessa (Italy) for "*Orthoptera life forms as indicators of grassland quality*" – R. Labadessa, M. Benedita Campochiaro, G. Antolino, L. Forte, P. Mairota.

II. Philipp Sengl (Austria) for "*Investigations on the migration of target species from semi dry grassland (Cirsio-pannonici-Brometum) to former cultivated fields in Sankt Anna am Aigen (SE Austria)*" – P. Sengl, M. Magnes.

III. Verena Rösch (Germany) for "*Agricultural intensification and fragmentation interactively affect insect communities of calcareous grasslands*" – V. Rosch, T. Tschamtker, C. Scherber, P. Batary.

IV. Eleonora Giarrizzo (Italy) for "*Environmental and management drivers of vascular plant diversity in semi-natural dry grasslands in relation to vegetation dynamics*" – E. Giarrizzo, S. Burrascano, L. Zavattero, C. Blasi.

Best poster presentation contributors

I. Orsolya Valkó (Hungary) for "*Large scale grassland restoration by filling of drainage canals – Effects of the surroundings and environmental variables on alkali grassland recovery*" – O. Valkó, T. Migléc, B. Deák, G. Szabó, S. Szabó, A. Kelemen, I. Kapocsi, S. Gori, P. Török, B. Tóthmeresz.

II. Milan Zajac (Slovak Republic) for "*Classification of mesic grasslands in the northern Carpathians – preliminary results*" – M. Zajac, Z. Kački, J. Korzeniak, W. Wilner, M. Janišová.

After the ceremony, the General Assembly (GA) of the EDGG chaired by the five present EDGG Executive Committee members. Details are found later in this issue.

The GA was followed by the grassland party in the "Muzealna" restaurant, built in the second half of the 17th century and decorated with reliefs representing John the Baptist, Jesus, John the Evangelist and Thomas the Apostle (the patron saint of Zamość). The building, which was originally presented to the Armenian merchants by the founder of Zamość, Jan Zamoyski, is one of the most beautiful houses in the city.

On the following 3 days, to the relief of the participants – the weather took a turn for the better and the post-conference excursions could proceed undisturbed by rain.

On the first excursion day (29 May), the EDGG members had the opportunity to visit one of the largest Polish colonies of an endangered mammal, the spotted ground squirrel *Spermophilus suslicus*, located on a 50-ha pasture near the Popówka village, with some grassland plant species growing mostly on its verges. The second site visited on this day was a loessy grassland near the Czumów village located on a steep slope of the Bug river valley, on the Polish-Ukrainian border. Here, the participants could find many endangered plant species, like *Echium russicum*, *Gypsophila paniculata* and *Orchis militaris*. There were also some cocoons of a rare arachnid, *Atypus muralis*, to be found on the ground. In a shed located nearby, a small treat consisting of local dishes and drinks was prepared for the conference attendants. Next, the "Skarpa Dobużańska" nature reserve was visited. The reserve is located on limestone slopes of the Huczwa river valley and numerous *Orobancha lutea* individuals could be found there. Later on during the day this trip was followed by a guided tour of the Zamość Old Town.

On the second excursion day (30 May), the group travelled to the "Żmudź" nature reserve which protects a 6-ha limestone slope overgrown mostly with the *Juniperus communis* scrub with some rare and protected orchid species, like *Cypripedium calceolus*, *Orchis militaris*, *Platanthera chlorantha* and *Cephalanthera damasonium*. Next, the steep slope called "Horodysko" in the vicinity of the Hłowiec village was visited. Here, the EDGG members could encounter the largest patch of the *Prunetum fruticosae* scrub in this part of Poland. Finally, the group had the chance to see a population of a sub-endemic species, *Carlina onopordifolia*, in the "Machnowska Góra" reserve.

On the final excursion day (31 May), the group travelled 140 Km to the Vistula river valley to see the *Inuletum ensifoliae* vegetation on the limestone slopes of "Albrechtówka" hill near the Męcierz village. After the excursion, the participants were taken to the city of Lublin from where they could return to their homes.

The Local Organizing Committee would like to thank the participants for their presence and contributions, all the sponsors, the EDGG Executive Committee, and many others who made this conference happen.

Piotr Chmielewski
On behalf of the Local Organizing Committee



Winners of the Young Investigator Prizes: Rocco Labadessa (Italy, upper left picture), Philipp Sengl (Austria, upper right picture), Verena Rosch (Germany, middle left picture), Eleonora Giarizzo (Italy, middle right picture), Orsolya Valko (lower left picture) and Milan Zajac (lower right picture). Photos: J. Dengler



Minutes of the EDGG General Assembly 2013

The General Assembly (GA) of the EDGG was held on 28 May 2013 at the conference hall of Hotel Mercure, Zamość, in conjunction with the 10th European Dry Grassland Meeting. The General Assembly was chaired by Jürgen Dengler and the minutes were recorded by Péter Török. The GA was attended by 59 scientists from 16 countries, which satisfies the requirements of a qualified majority (i.e. at least 40 EDGG members representing at least 10 different countries) as stated in the Bylaws of the EDGG.

Jürgen Dengler opened the GA at 18:00 and presented the agenda proposed by the Executive Committee (EC). As there were no wishes for modifications, the GA proceeded as proposed.

Reports of the EDGG activities since the last GA were given by the responsible members of the EDGG Executive Committee (EC). Jürgen Dengler summarised the relatively low activities of the five subgroups, and Mike Vrahnakis presented the work of the Special Policy Committee (SPC). Solvita Rūsiņa introduced the EDGG homepage and called for further ideas for improvement. Monika Janišová reported about the EDGG Bulletin and made a call for high quality photos, publications and further contributions to the forthcoming issues. Jürgen Dengler reported from former EDGG Research Expeditions and made a call for suggestions for future expeditions. Hereafter, Jürgen Dengler introduced the Special Features edited by the members and Chairs of EDGG during recent years and announced a forthcoming special feature. He also introduced the EDGG research fellowships and their recent recipients. Jürgen Dengler announced also that the EDGG has become an official working group of the IAVS, which means also regular

financial support from the mother organisation. Mike Vrahnakis announced that the Book of Proceedings from the previous EDGM in Prespa, Greece, is now in print and paperback bound copies will be distributed in about a month.

A preliminary report was given of the EDGG Elections and it was announced that, on the basis of these, all five chairs will continue to serve for the next two year period.

Elena Volkova presented the formal proposal and preliminary program and schedule of next EDGM 2014 in Tula, Russia. Jürgen Dengler (in the name of Ute and Thomas Becker) presented some information about the proposed EDGM 2015 in Mainz. After their presentation, the General Assembly accepted the proposal that the EDGM in 2015 will be held in Mainz, Germany. A call was announced for the EDGM in 2016, and Péter Török made a preliminary suggestion that the meeting could be organised in Hungary. This was applauded by the audience, though the formal decision was postponed until the next General Assembly.

Jürgen Dengler introduced the forthcoming special features in 2014 (Tuexenia, Hacquetia) and announced that the EDGG members can participate at discount prices in the forthcoming Open Landscapes Conference in Hildesheim (further details in this Bulletin).

Then the awards ceremony for the best young poster and oral presentations took place (see report above). Finally, the chairperson, Jürgen Dengler closed the General Assembly at 19:50.

*Péter Török, Deputy Secretary-General
Jürgen Dengler, Chairman of the General Assembly*

EDGG election 2013

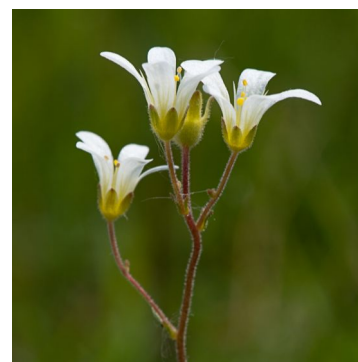
Despite our call for the nomination of additional candidates to stand for election to the Executive Committee published in Bulletin 18, none were forthcoming, so the candidates for the 2013 election were the six serving chairs, Jürgen Dengler, Monika Janišová, Solvita Rūsiņa, Péter Török, Stephen Venn and Michael Vrahnakis. The election was conducted electronically, as previously, and the election period ran from 2nd-30th May. Voters were allowed to cast up to seven votes. A total of 87 votes were cast in the election, which is a slight increase from the 71 votes cast in the 2011 election.

The distribution of the votes was as follows:

Candidate	Votes	Proportion of votes
Jürgen Dengler	74	85%
Monika Janišová	77	89%
Solvita Rūsiņa	64	74%
Péter Török	69	79%
Stephen Venn	69	79%
Michael Vrahnakis	74	85%

This means that all six candidates received in excess of 50% of the votes cast, and are thereby elected, in accordance with bylaw 2e. Their term of duty commenced immediately after the election and will continue until the 2015 General Assembly in Mainz. At the beginning of this term the newly elected Executive Committee reviewed its allocation of tasks. The only modification to these is that Monika Janišová is now the official representative of the EDGG to the IAVS.

Stephen Venn, Secretary General



Presymposium excursion: Iwona Dembicz and Łukasz Kozub (the organizers) and participants during the wet and cold spring days. Flowers on the right side (from up to down: *Armeria maritima* subsp. *elongata*, *Astragalus arenarius*, *Saxifraga granulata*, *Chamaecytisus ruthenicus*, *Verbascum phoeniceum*, *Tragopogon dubius*. Photos: J. Dengler



Participants of excursion to Popówka site. Photo: P. Chmielewski



Excursion to Popówka. Photo: J. Dengler



Dobuzek site excursion. Photo: P. Chmielewski



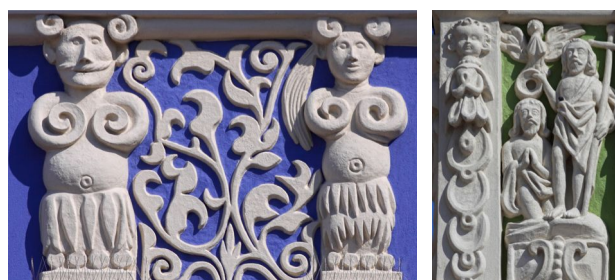
Cow grazing in Dobuzek site. Photo: M. Janišová



Refreshment in the vicinity of village Czumów. Photo: J. Dengler



Team of cooks and eaters. Photo: D. Krystonošić



*Guided tour through Zamość Old Town (left) and the decoration of Armenian merchant houses (above).
Photos: M. Janišová and P. Chmielewski*

56th Symposium of International Association for Vegetation Science, Tartu (Estonia) 26-30 June 2013



*"Investiga
(Cirsiopan
Austria)"*

Participants of the IAVS Symposium in Tartu near the bridge over the river Emajõgi (Mother river)

The annual IAVS Symposium in 2013 took place in Tartu, the second largest city of Estonia. Tartu has been an intellectual centre of both Estonia and Baltic countries for several centuries. It is the seat of University of Tartu, founded in 1632. The quiet city atmosphere, many young people in the streets and parks and long June evenings typical in areas of high latitudes, made this city a pleasant venue for an international conference. The topic of the 56th Symposium was *"Vegetation patterns & their underlying processes"*. With 451 participants from 41 countries, this Symposium became the most highly attended during the history of the IAVS.

The pre-symposium excursion to western Estonia and the islands of Saaremaa and Muhu, guided by Avelina Helm, focused mainly on species-rich wooded meadows and wooded pastures, distinctive dry calcareous alvar grasslands and flooded and coastal meadows. But it also showed fantastic wetlands like a calcareous fen on Saaremaa with the occurrence of the country's only endemic vascular plant, *Rhinanthus osiliensis*, and an impressive untouched raised bog located in the flood plain of the Somaa National Park. The post-symposium excursion, guided by Jaan Liira, led to a diverse variety of the habitats of Northern, Eastern and Southern Estonia.

The scientific program was extremely rich, including 182 oral and 192 poster presentations. The lectures were presented simultaneously in four sections and it was difficult to choose which session to participate in, as most of the lectures were of very high quality and focused on relevant ecological issues. Several section topics focused on processes and mechanisms in plant communities, explaining the existing vegetation composition, structure dynamics and diversity patterns. It was inspiring that many presented studies dealt also with the processes occurring belowground, bringing new insights within this still poorly known field. On the other hand, the topical themes of the applied research, including climate change effects, spread of invasive species and ecosystem restoration, were also reported by plenty of speakers.

Especially impressive were the eight plenary lectures:

Ray Callaway, United States of America: *"Positive interactions and interdependence in the organization of plant communities"*;

Ove Eriksson, Sweden: *"Species pools in cultural landscapes: Niche construction, ecological opportunity and niche shifts"*;

David Tilman, United States of America: *Biodiversity:*



Participants of pre-symposium excursion to western Estonia (upper picture). Below from the left: *Silene viscaria*, *Dracocephalum ruyschiana*, *Gymnadenia conopsea*, *Neotinea ustulata*. Photos: J. Dengler

From evolutionary origins to ecosystem functioning”;

Martin Zobel, Estonia: “Mycorrhiza and plant communities – is there a link?”;

Scott Wilson, Canada: “Competition and clonal connections”;

Meelis Pärtel, Estonia: “Community ecology of absent species”;

Hans De Kroon, Netherlands: “Vegetation dynamics and species coexistence: inspiration from below”;

Petr Pyšek, Czech Republic: “Plant invasions: the role of recipient habitats”; and

Angela Moles, Australia: “Means, extremes or in-betweens: Which climate variables are the strongest predictors of plant traits?”

The honorary membership lecture of Bastow Wilson,

New Zealand, “The four theories in vegetation science” was a *piece de résistance* of the rich scientific programme. Not only did Bastow mention three theories of vegetation science, he also showed how far contemporary vegetation science is from a full understanding of vegetation processes.

In short, the participants received so much valuable scientific information during each conference day, that nobody could have continued listening to further presentations without an effective break in the evenings. For this purpose, the conference café was reserved in the city centre. Fortunately, the organizers considered all details while preparing for the conference and the participants had no possibility of getting confused or bored.

Thanks to the encouraging pricing policy of the Estonian organisers (reduced registration fee for students and IAVS members) and the scholarships made available by



Plenary lecture of Angela Moles, Australia. Photo: M. Janišová



Plenary lecture of Scott Wilson, Canada. Photo: M. Janišová

the IAVS Global Sponsorship Committee to more than 20 PhD students, plenty of young people attended this year's Symposium. Moreover, each year the IAVS acknowledges the young scientists who have made the most outstanding oral or poster presentation at the annual meeting of the association. The winners are awarded 1,000 € to be used to attend one of the subsequent two annual meeting of the Association. You should also know, that persons from low-income countries and generally persons with financial restrictions can apply for free IAVS membership and free subscription to the two journals of the association, *Journal of Vegetation Science* and *Applied Vegetation Science*, in an easy way, and these benefits are granted by the Global Sponsorship Committee if the formal requirements are met. For details, see <http://www.iavs.org/AwardsFinancial.aspx>.

During the last day of the Symposium, the General Assembly of the IAVS took place. Besides disseminating important information on the functioning of the Association, we learned the venues of forthcoming IAVS annual symposia. The next IAVS symposium will be held in Perth, Australia, on 1–5 September 2014. The Symposium website will be launched in October 2013. The pre and post-symposium excursions are planned for the following areas: Shark Bay (north of Perth), Stirling/Warren area (south of Perth), tropical rainforest (NW Australia) and New South Wales (SE Australia). The symposium is organized by a local team chaired by Prof. Ladislav Mucina, from the University of Western Australia in Perth; email: Laco.Mucina@uwa.edu.au. The Symposium in 2015 will take place in Brno, Czech Republic, and be organized by a team chaired by Prof. Milan Chytrý.

Although the annual Symposia of the IAVS are not cheap, they are undoubtedly worth attending. Do not lose this perfect opportunity to meet vegetation scientists from all continents and get familiar with the vegetation of remote countries in a very organized and pleasant way!

Monika Janišová and Jürgen Dengler



Dinner on the Town Hall Square. Photo: M. Janišová



Mid-symposium excursion to Alam-Pedja Nature Reserve lead by Jaak-Albert Metsoja focussed on alluvial forests and flooded meadows. Photo: M. Janišová



Right: Estonia's answer to the Leaning Tower of Pisa is the so-called 'Leaning House' at the northeast corner of Town Hall Square. In the picture together with the leaning Symposium participants. Photo: M. Janišová

22th Workshop of European Vegetation Survey

Rome (Italy) 8-11 April 2013

The workshop of the IAVS working group European Vegetation Survey (EVS) took place during the second April week in Rome, Italy, and was organized by the Italian Society for Vegetation Science, University of Rome La Sapienza and University of Perugia. 178 participants from 16 countries took part in scientific program focussing two main topics: "Coastal and Inland Saline Vegetation" and "Red List Evaluation of Plant Communities" one-day excursion to the Circeo National Park at the sea coast south of Rome. We would like to thank the local organizing committee led by Roberto Venanzoni for all their work and the pleasant atmosphere during the meeting.

The next EVS annual meeting will be hold in Ljubljana Slovenia, on 8–12 May 2014, hosted by the Slovenian Academy of Sciences and Arts. The main topic will be "*Biogeographical Patterns and Processes in Plant Communities*" and a special session will be devoted to Balkan vegetation.

Monika Janišová



During the excursion, workshop participants could enjoy a sunny day with beautiful flowering plants while in more northern parts of Europe the harsh winter weather was ruling the land. Cyclamen repandum in the Mount Circeo promontory. Photo: J. Dengler



Palazzo Corsini and Orto Botanico were the venues of the EVS workshop in Rome. Photo: J. Medvecká (left), R. Hrivnák (right)



During the excursion to Circeo National Park we visited several habitat including coastal dunes and lowland forests. Photo: M. Janišová (left) and J. Dengler (right)

Absolute “zapovednost” – a concept of wildlife protection for the 21st century

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Abstract: *The article describes the idea and principles of absolute wilderness conservancy as a method of wildlife protection. It also analyzes the main criticisms of this concept.*

Keywords: zapovednost', zapovednik, sanctuary, wilderness conservancy, zapovednik regime.

Introduction

In the last 20 years, a tendency has developed for different social ideas and standards to transfer from Western Europe to Eastern Europe. Sometimes, this situation does not permit alternative viewpoints on global problems to be studied and their solutions to be found. The largest of these problems is the current ecological crisis.

We would like to bring to your attention the idea of absolute zapovednost', i.e. absolute wildlife conservancy as a mechanism of wildlife protection. The term “Zapovednost'” is a Russian word describing a special juridical status or process for creating a nature reserve where any human activity is forbidden. The reserve which has this inviolable protective status is called “zapovednik”. Zapovednost' is usually translated in English as reservation, however, the idea of absolute zapovednost' has another meaning. It is not simply landscape or species conservation. It is conservation of wild natural processes and the course of wild evolution, i.e. conservation of wilderness as a whole. It is more correctly translated as an absolute wilderness conservancy. Consequently, translation of the word “zapovednik” as a “reserve” is also not quite correct. The closest term for definition of zapovednik is “nature sanctuary” or “wildlife sanctuary”, because “sanctuary” means a sacred inviolable place and reflects the concept much better.

The idea of absolute zapovednost' was popular in the 20th century amongst the scientists of Ukraine and Russia, and was to some extent implemented there. Today, there are attempts to discredit this idea, as it contradicts the total commercialization and global human egoism (anthropocentrism). That is why it is very important to save and develop this concept as a certain counterbalance for effective wildlife protection.

Substance of the matter

The world practice of wildlife protection has produced several complementary concepts of protected areas with different purposes (Kozhevnikov, 1999. Boreiko, 2008). However, only one idea has been elaborated directly on behalf of wildlife and its protection against arrogant and omnipresent human intervention, namely absolute zapovednost'.

It was formulated independently by scientists, eco-philosophers and wildlife conservationists of Eurasia and North America. For example, a powerful eco-philosophical foundation of absolute wilderness conservancy (i.e. zapovednost') was elaborated by some American eco-philosophers and ecologists in their writings. They stressed the importance of such a value of wilderness as a freedom, and noted that successful evolutionary development of ecosystems and wildlife is impossible without this value. As early as the mid-19th century, the great American eco-philosopher Henry Thoreau wrote about the necessity of protection of wildlife freedom. In the opinion of the radical ecologist Dave Foreman, it is necessary to enable nature to go its own way, and not to make use of it (Roleston, 1991, 1992b; Boreiko, 2004, 2008).

Holmes Rolstone III in his article “Biology and Philosophy in Yellowstone” wrote about necessity to distinguish between natural and artificial (factitious) interference of men in the wildlife of national parks. For example, he states that regeneration of wolves as predators is more natural than extermination of elks by shooting. The eco-philosopher suggests passing a “declaration of freedom for remaining wildlife” (similar to A. Lincoln’s “Declaring the Objectives of the War Including Emancipation of Slaves in Rebellious States on January 1, 1863”). In his opinion, freedom and autonomy must be guaranteed for wilderness, especially in sanctuary areas (Rolston, 1992a).

The eco-philosopher Jack Turner criticizes the administrations of those national parks where the main principles are control, management and arrangement of tourist recreation, but not the protection of wildlife freedom. In his opinion, such a controlled reserved wildlife is a profanity. He says that people cannot conserve wilderness like they do strawberries – picked, cooked and preserved in jars. To conserve wildlife is to conserve its autonomy and freedom (Turner, 2003).

Russian scientists almost simultaneously with their American colleagues also came to wildlife protection through idea of zapovednost' or absolute wilderness conservancy. Ecologists G.A. Kozhevnikov, N.F. Ramers, A.M. Krasnitskiy, F.R. Schtilmark, S.A. Dyrenkov further formulated the idea, making it suitable for practical use.

In 1908-1909, G.A. Kozhevnikov proposed an ideal regime of entire inviolability (sanctity) and a special type of nature protected area where such a regime should be provided – zapovednik. This regime should be provided by means of:

1. Relatively large area of wildlife.
2. Presence of a special buffer zone around zapovednik.
3. Strict safeguard, prohibition of people passing and transport traffic
4. Prohibition of any practical use of wildlife: hunting, fishing, forest felling, mining operations, sowing, planting, berrying and mushroom picking.
5. Prohibition of any direct or indirect interference in the course of natural processes and phenomena: “Any actions disturbing natural conditions of struggle for existence are inadmissible (...). People need to remove nothing, to add nothing, to improve nothing. It is necessary to grant independence for nature and to observe results for us”.
6. This inviolable regime is established forever. (Kozhevnikov, 1999)

Modern classics of absolute zapovednost’ have proposed some additions to the conception:

1. Indirect human influence on zapovedniks (global pollution, heat effect on atmosphere) should not be considered in maintenance of inviolable status. This also concerns:

- penetration of alien species on the zapovednik territory.
- transformation of conserved ecosystems because of absence of some ecological elements, for example, forest

invasions on meadows in the absence of hoofed animals.

2. Absolute zapovednost’ extends not only to poorly studied areas of wildlife but also to plots of zapovedniks which had considerable anthropogenic influence in the past. In the opinion of F.R. Schtilmark and N.F. Ramers, “absolute zapovednost’ can be performed as an act of renewal, like a reanimation” of natural ecosystems.

3. The idea of absolute zapovednost’ is an ideal. It is necessary to aspire to it in the process of management of any zapovednik. (Ramers, Schtilmark 1978, Schtilmark, 2005, Boreiko, 2010) Nowadays, lots of pseudo-environmental ideas overflow the world, which justify the penetration of business interests into the last areas of wildlife. In this case, wide propagation and application of absolute zapovednost’ are the main way for a real defense of wildlife. Sometimes, the opinion is expressed that the idea of zapovedniks is not modern, that it is anachronism of the Soviet system, and nobody has come to such a form of wildlife protection. However, we believe that this statement is wrong. Today the idea of absolute zapovednost’ is as relevant as ever for countries where large territories of wildlife have remained. Zapovedniks should be established there, but not national parks, because they disagree with the idea of independent existence of wildlife. Neither notorious rational nature management nor ecosystem services but the idea of absolute zapovednost’ should find a widespread application. It is suitable not only for Eurasia and North America but also for other continents which have vast areas of wildlife, such as Antarctica, South America, Africa, Australia and ocean areas.

The last wildlife territories of these continents must be transformed primarily into zapovedniks. It is not



surprising that more and more ecologists from different countries criticize system of national parks, and begin to see the necessity of the formation of territories free from human interference. This particular approach (although in incomplete form) is accepted as a basis for European wildlife protection network “Natura 2000” (http://ec.europa.eu/environment/nature/natura2000/index_en.htm) or National Wildlife Refuge System of USA (<http://www.fws.gov/refuges/>).

Moreover, Antarctic Specially Protected Areas (ASPA) are established on the basis of this ideology, and admittance to them is strictly forbidden even for scientists (http://www.ats.aq/ep_protected.htm, http://www.antarctica.ac.uk/about_antarctica/environment/special_areas/index.php).

Discussion and criticism

It is clear that population density and shortage of wild areas prevent the widespread application of zapovednost’ in European Union. However, it may be applied in territories where human activity is limited, for example, in mountains or ocean areas. Countries can unite their efforts and found zapovedniks in their border territories together to conserve as large areas as possible. Today, interest in the idea of zapovednost’ is growing amongst Polish ecologists who are tired of rational nature management and recreational chaos. At the same time, some Ukrainian environmentalists offer to abolish zapovedniks and transform them to national parks (or into their full analogue so called biosphere reserves) (Dovganych Y.1993, <http://www.nr2.ru/crimea/173962.html>)

Often, the opinion is expressed in Ukraine and some other post-Soviet countries that an inviolable zapovednik regime is inadequate for the protection of endangered plant and animal species. They offer to support certain fixed conditions by means of artificial regulatory measures in nature protected areas. Such a way is also proposed after transformation of zapovedniks into national parks and biosphere reserves. (Dovganych Y. 1993, <http://www.nr2.ru/crimea/173962.html>)

Adherents of absolute zapovednost’ object to this approach because conservation of natural course process and preservation of separate species are not one and the same.

Last century, A.M. Krasnitskiy and S.A. Dyrenkov formulated the principle of purpose differentiation for specially protected natural areas. According to this, there must be not any regulatory or protectorship measures for certain species in zapovedniks. Thus, absolute zapovednost’ aims not only to conserve landscapes and species but first of all the process of wildlife evolution in whole. That is why any human interference in this process is unacceptable. At the same time, regulatory measures can be applied in other types of nature protected areas (national parks, scientific reserves and etc.) (Krasnitskiy, Dyrenkov 1978). Arguments of theorists who support “correction of disturbance through other disturbance” (as S. Dyrenkov called regulatory measures) are completely demolished by hard reality. So far as almost 100 % of recent regulatory actions is evident resource use of wildlife territory under

theoretical protection (like whale hunting of Japan for so called “scientific purposes”). Often resource use prevails over purposes of wildlife protection or directly violates it. For example, mowing is performed with heavy equipment within optimal period of time for high quality of hay, ignoring ecological requirements; commercial harvesting of fine wood is made under pretence of forest health etc.

Opponents of zapovedniks also make the second widespread argument: the inviolable regime of zapovedniks in Ukraine in reality is often not fully adhered to. Is there any sense to maintain such territories? They consider that it had better to legalize a more flexible regime of wildlife protection which takes place, for example, in national parks (<http://www.nr2.ru/crimea/173962.html>). Usually such arguments are made by people sincerely mistaken or by motivated persons who lobby business interests. Each true Ukrainian ecologist knows very well that zapovedniks have the strictest regime of wildlife protection. They are not zoned and this fact excludes the possibility of their re-zoning by somebody who intends to deprive certain lands of a special protected status for their appropriation. The lands of zapovedniks in Ukraine are defined by official borders. All of them have a strict legal regime that makes their protection the most successful but only if their administrations and non-governmental ecological organizations are ready to struggle. In general, it should be used a principle of striving for maximal wilderness and outer defense of wildlife.

One more argument against absolute zapovednost’ is that zapovedniks in Ukraine (as well as in Belarus and European Part of Russia) are small for development of nature in accordance with its laws. However, the examples usually make reference to the smallest plots of remaining grasslands in Donetsk and Luhansk regions (Bondarenko V. and others, 2001) In this case it is important to make the following notes.

- Firstly, Ukraine has not only mentioned small zapovedniks but also large ones, for example, Poleskiy zapovednik includes 20,000 ha (Table 1).
- Secondly, there are no facts which could be show that renewal processes are absent in small areas.
- Thirdly, it is necessary to remember about the strictest regime of wildlife protection in zapovedniks in comparison with other types of nature protected areas.

The opinion is also expressed that people must be not forbidden to visit wildlife areas and their availability should be advertized widely (Butorina N.,and others 2007). However, defenders of wildlife have formulated a thesis long ago that the needs of humans and nature are incompatible. Therefore, the existence of wildlife areas inaccessible for man is necessary, and which are not advertised. If closed territories exists for the needs of the army or VIPs, then closed territories must be also established for the truest VIP – NATURE.

One of the main arguments against absolute zapovednost’ is that zapovedniks require expenditures and do not contribute to economical development (Bondarenko V. and others, 2001). Don’t hurry to agree with this statement, because adherents of such arguments

Table 1. List of Ukrainian zapovedniks, their area and location

<i>Name</i>	<i>Date of establishment</i>	<i>Area (ha)</i>	<i>Region of Ukraine</i>
Nature zapovednik “Gorgany”	1996	5 344	Ivano-Frankivsk region
Dniprovsko-Orilskiy nature zapovednik	1990	3 766	Dnipropetrovsk region
Drevlianskiy nature zapovednik	2009	30 873	Zhytomyr region
Nature zapovednik “Elanetskiy steppe”	1996	1 676	Mykolayiv region
Kazantipskiy nature zapovednik	1998	450	Autonomous Republic of Crimea
Kanivskiy nature zapovednik	1923	2 027	Cherkasy region
Karadagskiy nature zapovednik	1979	2 872	Autonomous Republic of Crimea
Crimskiy nature zapovednik, and its branch “Lebedinnye ostrova”	1923	44 175	Autonomous Republic of Crimea
Luhanskiy nature zapovednik, its branches: Stanychno-Luhanskiy zapovednik, “Provalskiy steppe”, “Striltsivskiy steppe”	1968	2 122	Luhansk region
Nature zapovednik “Medobory”	1990	10 521	Ternopil region
Nature zapovednik “Mys Martian”	1973	240	Autonomous Republic of Crimea
Nature zapovednik “Mykhaylivska Tsilyna”	2009	883	Sumy region
Opukskiy nature zapovednik	1998	1 593	Autonomous Republic of Crimea
Poliskiy nature zapovednik	1968	20 104	Zhytomyr region
Nature zapovednik “Roztochchia”	1984	2 085	Lviv region
Rivnenskiy nature zapovednik	1999	42 289	Rivno region
Cheremskiy nature zapovednik	2001	2 976	Volyn region
Ukrainian steppe nature zapovednik, branches “Khomutovskiy steppe”, “Kamiani mogily” and “Creydova flora”	1961	3 336	Donetsk, Zaporizhzhya and Sumy regions
Yaltynskiy mountain-forest nature zapovednik	1973	14 523	Autonomous Republic of Crimea

also should ask questions about existence of real budget spongers: official governmental residencies, VIP state hunting farms and etc.

Zapovedniks are one of the main components of environmental security and national prestige. Moreover, zapovedniks have a considerable scientific importance. In fact scientific research is the only one type of human activity that is admissible in zapovedniks. However, research is mainly conducted in the form of observations (chronicles of nature) to limit human influence on nature. This monitoring has a particular scientific importance because of its provision of long term data. Thus, it is clear that they must be financed by authorities like public health service, rescue service, science, army and etc.

Absolute zapovednost' and grasslands

Steppe ecosystems are very fragmented and subjected to anthropogenic influence much more than other types of ecosystems, for example forests. Absolute zapovednost' requires freedom for nature evolution without interference of human activity. However, the situation in grasslands is very difficult and confused. Neglecting of alien species and absence of hoofed animals mentioned as principles of zapovednost' in recent steppes leads not to natural evolution but rather to evolution of human mistakes and interference consequences. Today, alien tree species (*Robinia pseudoacacia*, *Elaeagnus commutata* and others) are one of the main dangers for the existence of the last steppe areas, as well as the absence of hoofed animals enable them to cover new zapovednik territories.

It is also difficult to call the spread of alien tree species an indirect human influence because they are used intentionally in large-scale afforestation. The same can be said about absence of wild hoofed animals which were exterminated by direct human activity.

It seems the best way for zapovednost' in grasslands is modeling of wildlife conditions. That is why it seems relevant using of hoofed animals for support of natural grassland ecosystems, even they are domestic animals. However, it is not all that simple. Firstly, any artificial actions cause temptation to make new ones. If any zapovednik administration allows grazing today, it can allow hay harvesting tomorrow and something else more disturbing zapovednik regime day after today. Such an activity needs very severe control from the side of special environmental state bodies and ecological NGOs.

Secondly, not only human factors but also ecological factors have considerable importance for modeling of wildlife in grassland zapovedniks, especially which have small area. Natural processes are too difficult for simple imitation. As an example can be described attempt to introduce horses in grassland zapovednik "Khomutovskiy steppe". The horses grazed only near drinking place, fed on certain grass species only and reproduced uncontrollably. As a result vegetation cover near drinking place was destroyed. Zapovednik administration also decided to earn money using horses for riding tours. Moreover, horses needed food in winter and administration began to make hay harvesting by using of tractors.

Thus, wild ecosystems as well as grassland ecosystems are very intricate to be modeled with such primitive methods. It is necessary complex of factors: different herbivorous species, different predators and etc. It is very difficult to fulfill this, especially in small grassland areas. Described example concerns only alien species and hoofed animals but it is clear that situation includes lots of many other factors.

We have to acknowledge that absolute zapovednost' for grasslands remains one of the most contested questions. It



Is any chance for future generations to see wild grasslands?

has no general opinion and requires further studying and discussion. Possibly, the most obvious way out is a return of large anthropogenic areas (mainly eroded arable lands) into natural state i.e. land conservation (abandonment). It can give an opportunity for re-introduction of many animal species including the hoofed. Moreover, some time or other, land abandonment in many steppe regions of Europe has no any alternative because of the desertification process which has already begun.

However, nowadays the area of grassland is so small that zapovedniks have exclusive importance for conservation not only certain species but for conservation of their full interaction for renewal of steppes in future and better times.

Conclusion

Accounting all the described above, we argue against:

1. Offences against zapovedniks.
2. Transformation of zapovedniks into national parks or so called biosphere reserves.
3. Regulatory measures in zapovedniks, because they are a key to many abuses for use of resources in nature protected areas.
4. Demands on administrations of zapovedniks to provide protection of certain species through regulatory measures and interference in course of natural processes, and demands to “reconstruct” natural ecosystems by the same artificial measures.
5. Development of any tourism, recreation and large-scale student field programs (practices) on the territories of zapovedniks.
6. Demands on administrations of zapovedniks to make money.
7. Territorial changes of zapovedniks when any their part can be removed from their area, even if it is compensated by other one. Their area must increase only.
8. Appointment of persons who have no biological education to a post of director of zapovedniks.
9. Ignoring of establishment of new zapovedniks in Ukraine and other countries.
10. Application of terminology “zapovednost” and “zapovednik territory” for other types of nature protected areas where regime of zapovednost’ is not appointed: biosphere reserves, natural monuments etc.

If you have questions concerning the idea of absolute zapovednost’ you may ask us by the following e-mail: kekz-office@ukr.net

Information about our Zapovednik school, and rules of participation in it you may find on the web-site of Kyiv ecological-cultural center (in Russian language): <http://ecoethics.ru/shkola-boreiko-voytsehovskogo/>

Nowadays, Ukrainian NGO “Kyiv ecological-cultural center” and Polish NGO “Workroom for profit of all the creatures” make all efforts for propaganda and dissemination of the idea of absolute zapovednost’. They have initiated an international campaign for support and diffusion of this key conception. Every year for this purpose the International Zapovednik School of Boreiko-Voytsekhovskiy is held in Kyiv. The main task of the

school is the development of ideological and eco-philosophical basis for modern wildlife defenders, dissemination of the idea of absolute zapovednost’ and necessity of protection of the last wildlife areas.

References

- Boreiko, V. E. (2010): Zapovedniks, zapovednost’ and life-creating chaos. K. Logos, 48 p.
- Ramers, N. F., Schtilmark, F. R. (1978): Specially protected nature areas. M. “Mysl”, 295 p.
- Krasnitskiy, A. M. & Dyrenkov, S. A. (1978): About necessity of division of two functions for zapovednik areas. Theses of reports of VI Delegate congress of VBO, L “Nauka”, 295 p.
- Schtilmark, F. R. (2005): Idea of absolute zapovednost’. KM: KEC-CODOP, 116 p.
- Kozhevnikov, G. A. (1999): Wildlife protection in various countries in connection with establishment of this affair in Russia//Ec-esthetic approach in wildlife protection and zapovednost’. Compiled by V. Boreiko, 2nd enlarged edition. K. KECC, pp. 243–245.
- Turner, J. (2003): Wilderness and wild nature. K. KECC, 72 p.
- Boreiko, V. E. (2004): Philosophers of wilderness and wildlife protection, 2nd enlarged edition. K. KECC, 72 p.
- Rolston, H. (1991): The wilderness idea reaffirmed. In: The environmental professional, v. 13, pp. 370–377.
- Rolston, H. (1992a): Biology and philosophy in Yellowstone. In: Environmental ethics: divergence and convergence, S. Comp, Boston-London, pp. 370–377.
- Rolston, H. (1992b): Philosophy gone wild. Buffalo, New York, Prometheus books, 269 p.
- Boreiko, V. E. (2008): History of wildlife protection in USA. K. KECC, 80 p.
- Dovganych, Y. (1993): Zoning of area – way to activation of standard functions of state zapovedniks. Ecological bases for optimization of protective regime and use of natural reserve fund: Matters of International research-practice conference. Rakhiv, pp. 22–24.
- Butorina, N., Morgachev, S., Orestov, Y. & Chizhova, V. (2007): Path in harmony with nature. Collected book of Russian and foreign experience for formation of ecological paths. R.Valent, 176 p.
- Bondarenko, V., Krynitsky, G., Deineka, A., Kokhanets, M. & Muzyka, M. (2001): Revisited project description of territorial and protective arrangement of natural sites in zapovedniks and national natural parks. Scientific bulletin of Lviv national forest-technological university, pp 36–49.
- http://www.ats.aq/e/ep_protected.htm
- http://www.antarctica.ac.uk/about_antarctica/environment/special_areas/index.php
- <http://www.fws.gov/refuges/>
- <http://www.nr2.ru/crimea/173962.html>

Steppes of Southern Siberia

Experiences from the 6th EDGG Research Expedition to Khakassia, Russia (22 July – 1 August 2013)

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Abstract: *The 6th EDGG Research Expedition took place in summer 2013 in the Kuznetsky Alatau Mountains, part of the Altai-Sayanian mountain region (Republic of Khakassia, Russia). A group of 14 scientists from seven countries studied the variety of steppe vegetation in two regions of the "Khakassky" Reserve – Lake Itkul (Shira region) and Podzaploty (Ordzenikidzevsky region). Standardised sampling procedures including nested-plot series and phytosociological relevés of 10-m² plots were used to sample steppes of European-Siberian (*Festuco-Brometea*) and Central Asian (*Cleistogenetea squarrosae*) types. All terricolous plants present in the plots were sampled, including perennial and annual vascular plants, bryophytes, and lichens. The data will be used for analyses of scale-dependent diversity patterns and species-area relationships, as well as for studying vegetation-environment relationships and performing phytosociological classification.*

Keywords: biodiversity; bryophyte; *Cleistogenetea squarrosae*; *Festuco-Brometea*; lichen; nested plot; vascular plant; vegetation classification; vegetation-plot database, steppe.

Introduction

Palearctic dry grasslands and steppes are among the plant communities that host the highest small-scale vascular plant diversity worldwide (Wilson et al. 2012). This ecologically outstanding position of dry grasslands together with their high endangerment and their beauty has stimulated many biologists to choose them as their study objects. Such motivations were also the main drivers for the establishment of the European Dry

Grassland Group (EDGG) in 2008 (Vrahnakis et al. 2013). Despite the extensive literature about dry grasslands in Europe, the documentation of biodiversity patterns is still fragmented since the many local studies hardly ever used consistent methodology, such as identical plot sizes. Accordingly, the explanation of why certain European dry grassland types are so extremely species rich is so far merely based on circumstantial evidence as large-scale analyses are missing (e.g. Merunková et al. 2012). Species-area relationships

(SARs) at plot scale might be an important tool to understand the scale dependence of diversity-environment relationships and to allow standardisation of diversity values recorded on different plot sizes (Dengler 2009a). While large-scale SARs have been well explored with state-of-the-art methods in recent years (Drakare et al. 2006, Guilhaumon et al. 2008, Triantis et al. 2012), similar analyses at plot scale are generally rare (Crawley & Harral 2001, Dolnik 2003, Dengler 2009a), and even rarer for grasslands (Chiarucci et al. 2006, 2012, Dengler & Boch 2008). Further, the knowledge about bryophyte and lichen diversity in dry grasslands is particularly incomplete albeit the comparison of diversity patterns of vascular plants, bryophytes and lichens with their contrasting ecology is particularly promising (Löbel et al. 2006).

All these points together prompted the EDGG already during the first year of its existence to conduct its first, then still very small research expedition to Transylvania (Dengler et al. 2009). This first expedition resulted in an initial publication in a Web of Science journal last year (Dengler et al. 2012a), with two more on the way, and contributed two world records in the maximum richness paper of Wilson et al. (2012). In the following years, the EDGG Research Expeditions became a core part of the working group identity, attended by an increasingly international group of participants, which stimulated – beyond the scientific value of the gathered data – discussions about methodological approaches, ecological theories and syntaxonomic concepts. The second to fifth expedition went to Central Podolia (Ukraine; Dengler et al. 2010), NW Bulgaria (Apostolova et al. 2011, Pedashenko et al. 2013), Sicily (Italy; Guarino et al. 2012) and NW Greece (Dengler & Demina 2012). Most recently, the 6th EDGG Research Expedition, from which we report here, was conducted for the first time in a location outside Europe. Our destination was the natural steppe of Southern Siberia, in order to allow comparison of their compositional and diversity patterns with those of the mostly man-made, semi-natural dry grasslands of Europe (Vrahnakis et al. 2013).

In total, 14 scientists from seven countries (Germany, France, Italy, Japan, Poland, Russia and Slovakia) participated in the one and a half weeks of field work. Several others unfortunately had to cancel their participation at short notice because for the first time we were not able to secure any financial support. The group combined experienced senior scientists, young postdocs and PhD students as well as both participants of previous expeditions (8) and newcomers (6). As usual, standardised sampling methods were used also during this EDGG expedition to allow many different analyses, which now – after accumulation of data from six expeditions (plus very similar datasets from Öland [Löbel 2002], Saaremaa [Dengler & Boch 2008] and NE Germany [Dengler et al. 2004]) – can be used for interesting large-scale comparisons and meta-analyses. The core part of the sampling are the so-called “biodiversity plots”, which follow ideas of Dengler (2009b). Basically, they consist of nested sampled areas from 0.0001, 0.001, 0.01, 0.1, 1, 10 and 100 m², with the smaller ones always replicated twice within the big 100-m² plot. On each plot size, all vascular plants, bryophytes

and lichens that are superficially present (shoot presence or any-part system: Williamson 2003, Dengler 2008) are recorded. Additionally for the 10-m² plots, percentage cover per species and structural data of the vegetation are estimated and a set of environmental parameters related to topography and soil determined. In each individual study region, the biodiversity plots are placed in homogenous stands of different types with the aim to cover the full gradient of locally present grassland types. To complement this time-consuming sampling, we additionally survey “normal” plots, which have exactly the same parameters as the 10-m² corners of the biodiversity plots and can thus easily be combined with these for joint analyses.

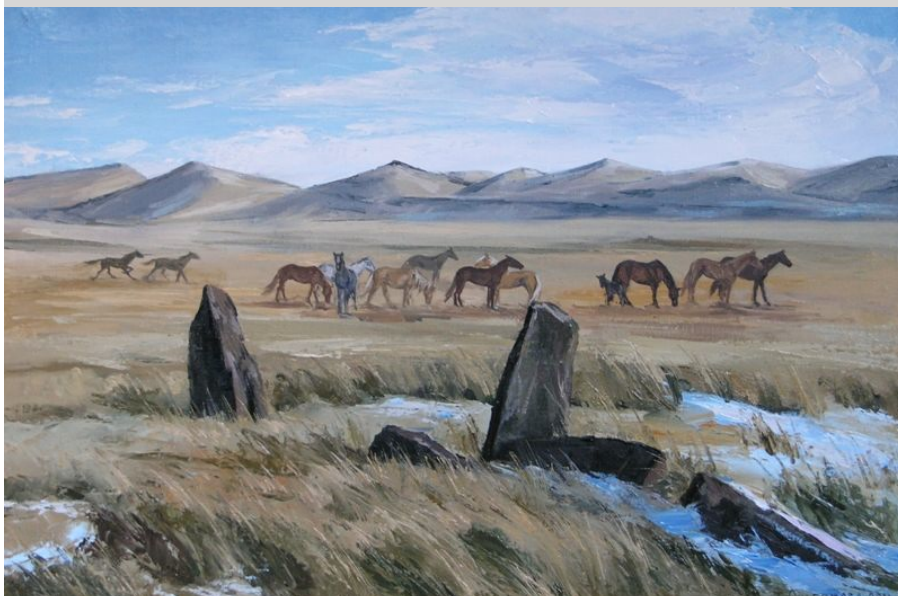
This contribution starts with an introduction to the study area, followed by some preliminary results, conclusions and an outlook. After the reference section, an appendix with an illustrated diary follows.



Relief map of Khakassia with red circles showing the location of the two study areas. Source: <http://commons.wikimedia.org/>. Modified by the authors.

Study area

Our study area was the northern part of the Republic of Khakassia, which is one of 83 federal subjects of the Russian Federation. It is located in southern Siberia between 51° N and 55° N and 88° E and 91° E, near Mongolia (in 450 km distance), China (600 km) and Kazakhstan (550 km). The republic covers 61,900 km² and is inhabited by slightly more than half a million of inhabitants, resulting in a low population density of only 9 persons per km². In rural regions, the population is



Tatiana Oshepkova: Steppes of Khakassia. Source of the paintings: http://www.oshepkova.ru/kupit_kartini_pdrodaja_peyzaji_khakassia_oshepkova_galereya_all.html (with kind approval from the author)

even less dense because 165,000 people are concentrated in the capital Abakan, which can be reached by daily plane connections from Moscow (approx. 3,300 km).

The climate of Khakassia is ultracontinental with cold winters and hot summers, determined by its geographical position and specific conditions of a relief (Nikolskaya 1968). In the steppe zone, the average temperature in January varies from -19°C to -21°C , in July it is about $+20^{\circ}\text{C}$. Mean annual precipitation is only 250–350 mm, of which 80% falls during summer. In winter, the snow cover is unevenly distributed, reaching a maximal depth of 10–20 cm. Due to the activity of wind, snow can be removed from open areas and hilltops leading to exposed soil surface and thus contributing to its deep freezing. During summer, the wind causes rapid evaporation of moisture from the unsheltered surfaces leading to extreme desiccation.

Khakassia is located in the zone of the Altai-Sayan folded Paleozoic structures, distinguished by a complex geological structure and variety of relief. Two main types of tectonic structures can be distinguished in Khakassia, Minusinskaya Basin and the adjacent systems of the Western Sayan and Kuznetsky Alatau (Nikolskaya 1968).

Most of our studies were carried out in two of the ten discontinuous segments of the State Natural Reserve “Khakassky zapovednik”, which is a strict reserve (the highest category in the Russian system), namely segment Ozero Itkul (55.47 km^2) and segment Podzaploty (51.81

km^2) and their surroundings. These segments are located at approx. 54° N latitude, 90° E longitude and range from 400 to 700 m a.s.l. Both areas are placed on Devonian bedrock; Ozero (Lake) Itkul mainly on limestone and Podzaploty on sandstone. Rock layers are gently tiled in monoclines, and their variable resistance to erosion led to creation of cuestas. Around Lake Itkul, the steep rocky slopes are facing to south-west while in Podzaploty to north-east. Valley bottoms and lower parts of the slopes are covered with diluvial deposits, often sandy. In Podzaploty, the sedimentary rocks of the valley bottom are cut by dikes of Triassic and Upper Paleozoic basalts forming cone-shaped hills.

Steppes of the Minusinskaya Basin

Steppe is a zonal type of vegetation in Khakassia (Kuminova et al. 1976). Steppic landscapes are located on different landforms and bedrocks. A complex combination of ecological factors (different amounts of insolation and moisture, different degree of soil development) is a reason for the high variety of steppe types present in the same landscape, from dry steppes on the flat shallow-soil places and south-facing slopes to meadow steppes on flat deep-soil places and north-facing slopes.

In the Enesei basin eastern of the Kuzneky Alatau, a group of “islands” with steppe vegetation is located at



Tatiana Oshepkova: Lake in the steppe. Source of the paintings: http://www.oshepkova.ru/kupit_kartini_pdrodaja_peyzaji_khakassia_oshepkova_galereya_all.html (with kind approval from the author)

altitudes from 250 to 450 m a.s.l. In these so-called island steppes, the occurrence of *Stipa* species is significantly reduced and the role of Siberian-Mongolian plants is emphasized. For the southern Enesei steppes of the Minusinsk and Abakan regions, the so called “four-grass-steppe” is typical dominated by *Stipa krylovii*, *Cleistogenes squarrosa*, *Festuca* spec. div. and *Koeleria* spec. div. (Kholboeva & Namzalov 2011). The steppes in the montaneous regions differ from lowland steppes. They are frequently called the orographic steppes as their floristic composition strongly reflects the effects of slope aspect (Karamysheva 1993).

The petrophytic steppes with alpine species are an unique element of the steppe vegetation in Khakassia. They occur on the top parts of hills and slopes of southern and southeastern exposition. In Khakassia, these species survive at lower altitudes (300–500 m a.s.l.) and occur on dry stony slopes with little snow in winter. In summer, these habitats are dry due to high insolation and well-drained soils. One peculiarity of these communities is a group of species otherwise occurring in the alpine zone (*Androsace dasyphylla*, *Dryas oxyodonta*, *Kobresia filifolia*, *Minuartia verna*, *Patrinia sibirica*, *Poa attenuata*, *Potentilla nivea*, *Sagina saginoides*).

Nature conservation

The different types of steppe communities are also habitats of rare plants, listed in the Red Books of various levels – *Adenophora rupestris*, *Astragalus ionae*, *Carex humilis*, *Lilium pumilum*, *Oxytropis includens*, *O. chakassiensis*, *Phlox sibirica*, *Stipa pennata*, *S. zaleski*. Three of these are endemic – *Adenophora rupestris*, *Oxytropis includens* and *O. chakassiensis*.

Steppes in Khakassia have been intensively used for agriculture; most frequently they were transformed to crop fields. Steppe areas unsuitable for crop cultivation were often exposed to significant grazing pressure. Several patches of natural steppes are preserved in nature reserves and remote areas.

Plant determination during the expedition

In addition to the good floristic knowledge of the Siberian participants based on the Flora of Siberia (1987–2003), we mainly relied on the *Opredelitel rastenij Krasnojarskogo kraja* (Krasnoborov 1979, in Russian) for vascular plant determination. Luckily for those team members who did not understand Russian, we could use a nice photo-flora of Mongolia (Hauck & Solongo 2010), the neighbouring country, with numerous common taxa in good photos and short English text, as well as the English translation of the Mongolian plant determination key (Grubov 2001). Moreover, there is also a relatively recent checklist for vascular plant flora of the former Soviet Union (Cherepanov 1995), whose nomenclature we use in this contribution.

First results

We surveyed 39 biodiversity plots and 55 additional



Tatiana Oshepkova: Summer. Source of the paintings: http://www.oshepkova.ru/kupit_kartini_pdrodaja_peyzaji_khakassia_oshepkova_galereya_all.html (with kind approval from the author)

normal plots, resulting in a total of 133 full relevés with soil samples (in comparison, 226 relevés were sampled during the expedition to Ukraine and 98 relevés during the expedition to Bulgaria). Based on the 22 biodiversity plots that have so far been entered into an electronic spreadsheet, we can present the preliminary data on diversity of the studied steppes. The mean richness values on the various spatial scales (Table 1) were clearly lower than in Transylvanian (Dengler et al. 2012), but higher than in Bulgarian *Festuco-Brometea* communities (Pedashenko et al. 2013).

Among the vascular plants, the most frequent graminoids were, in decreasing order, *Carex humilis*, *Festuca pseudovina*, *Carex pediformis*, *Stipa krylovii*, *Elytrigia lolioides* and *Koeleria cristata*. The most common forbs were *Thalictrum foetidum*, *Thymus serpyllum*, *Schizonepeta multifida*, *Iris ruthenica*, *Aster alpinus*, *Bupleurum scorzonerifolium*, *Leontopodium ochroleucum*, *Galium verum* and *Hedysarum gmelinii*. Surprisingly, among the matrix species there were not only Central Asian and arctic-alpine floristic elements, but also some species common in European grasslands.

Area [m ²]	Mean	Min	Max
0.0001	2.4	0	5
0.001	4.7	1	9
0.01	9.6	3	16
0.1	19.1	10	31
1	33.0	18	54
10	49.2	33	75
100	70.9	48	99

Table 1: Mean plant species richness (shoot presence of vascular plants, bryophytes, lichens and “macroalgae”) in 22 biodiversity plots in the Khakassian steppes ($n = 44$ for plots 0.0001–10 m²; $n = 22$ for 100-m² plots; preliminary data).

Bryophytes and lichens played an unusually minor role compared to common European dry grassland types (e.g. Dengler 2005, Boch & Dengler 2006, Löbel & Dengler 2008), both in terms of cover and richness. On average, there were four cryptogam species per 10 m². While pleurocarpous mosses and larger fruticose lichens were almost absent, the most frequent cryptogam synusia was the so-called coloured lichen community with species

from the genera *Toninia*, *Psora* and *Fulgensia*, which occurred mainly in the open, petrophytic types.

Comparison of the Khakassian and Mongolian steppes

Khakassian steppes have similarities in physiognomy and species composition both with European-Siberian and Mongolian (Central Asian) steppes. A recent overview of all syntaxa of Russia, including the Khakassian steppes, has been compiled by our local organiser (Ermakov 2012).

According to one of the participants, Kohei Suzuki, who has been studying the steppes of Mongolia for several years, the Khakassian steppes have similar species composition and physiognomy to Mongolian steppes. As a matter of fact, most of the Mongolian steppes are also classified to *Cleistogenetea squarrosae* Mirkin et al. ex Korotkov et al. 1991. First, the petrophytic vegetation in Khakassia (upper picture right) represented by *Eritrichio pectinati-Selaginellion sanguinolentae* Ermakov et al. 2006 is a vicarious alliance to *Thymion gobici* (Mirkin et al.) Mirkin in Kašapov et al. ex Hilbig (Hilbig 2000) in Mongolia (picture right). The occurrence of *Alyssum obovatum*, *Orostachys spinosa*, *Arctogeron gramineum*, *Arenaria capillaris*, *Ephedra monosperma* is common in both countries. Second, meadow steppe vegetation of the *Festuco valesiacae-Caricion pediformis* Ermakov et al. 2012 occurring on well-developed soil in Khakassia (picture right) resembles the vegetation of *Helictotrichion schelliani* Hilbig 2000 (Hilbig 2000) in Mongolia (lower picture right). Species such as *Aster alpinus*, *Dianthus versicolor*, *Galium verum*, *Gentiana decumbens*, *Leontopodium ochroleucum* and *Schizonepeta multifida* are typical for these communities. From the phytosociological point of view it is very interesting how species composition changes in similar vegetation types from Mongolia to Khakassia, and what is the main driving force for these changes.

Conclusions and outlook

Our plan is to have the data ready for analysis in the next few months. This is the first EDGG Research Expedition where we determined all sampled vascular plants already during the expedition. Moreover, a significant proportion of the field data are already digitised. So the remaining tasks before the analyses can start are determination of the sampled bryophytes and lichens, analysis of soil samples (these tasks are taken care of by the Russian colleagues) and the completion of the data entry into the database (will be done by some of the foreign participants). We are therefore optimistic that we could start our analyses already in winter 2013/14 and then would be able to submit a first paper in the following spring. Presently, we are searching possibilities for funding for an internship of the young Russian postdoc Mariya Polyakova in the lab of one of the senior European expedition participants in order to continue the experience exchange beyond the fieldtrip into the analytical and paper-writing stage. It will be interesting to compare the biodiversity patterns and species-area relationships with those of the previous EDGG Expeditions (Dengler et al. 2012a, Pedashenko et al. 2013, and unpublished data) and similar datasets. From the phytosociological point of view it is a challenging



Petrophilous steppe of Eritrichio pectinati-Selaginellion sanguinolentae in Khakassia. Photo: G. Filibeck



Petrophilous steppe of Thymion gobici in Mongolia. Photo: K. Suzuki



Steppe vegetation of Festuco valesiacae-Caricion pediformis on well-developed soil in Khakassia. Photo: G. Filibeck



Vegetation of Helictotrichion schelliani in Mongolia. Photo: K. Suzuki



*Petrophilous steppe dominated by *Carex humilis* and *Leontopodium ochroleucum* near Itkyl Lake. Photo: D. Frank.*



Colorful rocky grasslands on the mountain ridge above our camp in Podzaploty. Photo: D. Frank.



Plant determination and entering the data during the evenings and nights. Photo: D. Frank and R. Jaunatre

question where to separate the Eurasian class of *Festuco-Brometea* Br.-Bl. et Tüxen ex Soó 1947 and of *Cleistogenetea squarrosae* Mirkin et al. ex Korotkov et al. 1991 (Korotkov et al. 1991, Hilbig 1995, Ermakov et al. 2006, Ermakov 2012), or whether these two classes are sensible at all, given the same ecology and physiognomy and the high overlap in dominant species (see above).

As in the case of the previous EDGG Research Expeditions, the sampled data will finally become part of the Database Species-Area Relationships in Palaeartic Grasslands (Dengler et al. 2012b; GIVD ID EU-00-003) and additionally of the Vegetation Database of North Asia (GIVD ID AS-00-002), both registered in the Global Index of Vegetation-Plot Databases (GIVD; <http://www.givd.info>; see Dengler et al. 2011). After our initial publication, these data can also be used by other researchers. Moreover, we plan to contribute the data to the emerging global vegetation-plot database sPlot (see <http://www.idiv-biodiversity.de/sdiv/workshops/past-workshops/splot>).

After five EDGG Research Expeditions in Eastern and Southern Europe, this was the first one to be conducted in Central Asia, and in fact the very first EDGG event outside Europe. While there have been a few non-European participants during previous EDGG Expeditions and European Dry Grassland Meetings, this was the one event with the highest fraction of North Asian colleagues. It is fantastic to see how the EDGG is coming, step by step, to represent the dry grassland and steppe researchers in the whole Palaeartic as stated in our Bylaws. Similarly, we recently had the first Central Asian paper in one of the EDGG Special Issues (Niu et al. in press).

Inspired by six successful research expeditions, the EDGG will certainly continue its expedition programme. For summer 2014 (likely end of June), we have already fixed the venue: it will be a transect in Northern Spain, from the semiarid Mediterranean plains to the alpine grasslands of the Pyrenees. This EDGG event in the western part of Europe will hopefully broaden our viewpoints and enrich our personal collaborations (details will be announced in the next Bulletin or via the EDGG mailing list). For the years from 2015 onwards no venues have been decided upon, but several options are in the discussion, among them Southern Norway, Gotland (Sweden), Poland, France, dry valleys of the Inner Alps, the Italian Alps around Lago di Garda, Albania/Montenegro/Macedonia, Crimea (Ukraine), Caucasus (Russian part), Anatolia (Turkey), Northern Iran, Kazakhstan or Mongolia. Criteria for selection include the geographic balance of the venues as whole, the lack of good phytosociological and biodiversity data from the study region, the interest of potential participants and, most importantly, one or several reliable local organisers who preferably should have participated in at least one previous expedition. Persons interested in organising future EDGG Expeditions are encouraged to contact the EDGG Expeditions Coordinator (J.D.).

References

- Apostolova, I., Dengler, J., Janišová, M., Todorova, S., Vasilev, K. (2011): Bulgarian dry grasslands – Report from the 3rd EDGG Research Expedition 14–24 August 2011. Bull. Eur. Dry Grassl. Group 12: 10–14.
- Boch, S., Dengler, J. (2006): Floristische und ökologische Charakterisierung sowie Phytodiversität der Trockenrasen auf der Insel Saaremaa (Estland). – In: Bültmann, H., Fartmann, T., Hasse, T. [Eds.]: Trockenrasen auf unterschiedlichen Betrachtungsebenen – Berichte einer Tagung vom 26.–28. August in Münster. Arb. Inst. Landschaftsökol. Münster 15: 55–71, Münster.
- Chiarucci, A., Viciani, D., Winter, C., Diekmann, M. (2006): Effects of productivity on species-area curves in herbaceous vegetation: evidence from experimental and observational data. Oikos 115: 475–483.
- Chiarucci, A., Bacaro, G., Filibeck, G., Landi, S., Maccherini, S., Scoppola, A. (2012): Scale dependence of plant species richness in a network of protected areas. Biodivers. Conserv. 21: 503–516.
- Crawley, M.J., Harral, J.E. (2001): Scale dependence in plant biodiversity. Science 291: 864–868.
- Cherepanov, S.K. (1995): Vascular plants of Russia and adjacent states (the former USSR). X + 516 pp., Cambridge University Press, Cambridge, UK.
- Dengler, J. (2005): Zwischen Estland und Portugal – Gemeinsamkeiten und Unterschiede der Phytodiversitätsmuster europäischer Trockenrasen. Tuexenia 25: 387–405.



Zygaena sp. on *Phlojodicarpus sibiricus*. Photo: M. Janišová



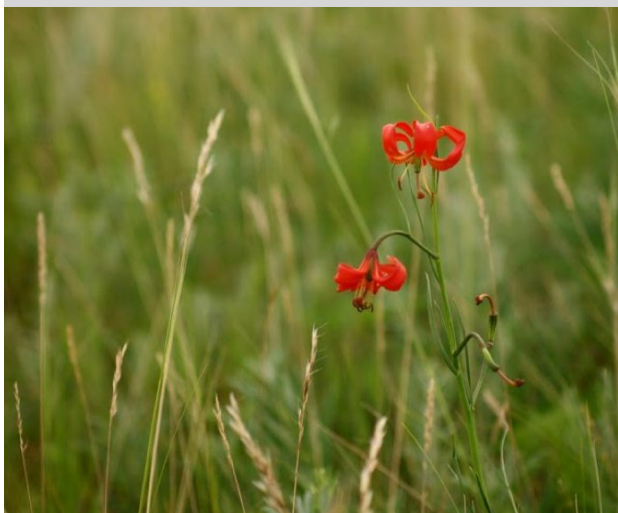
Serratula centauroides near lake Itkul is one of the species newly recorded for this part of "Khaikassky" Reserve. Photo: O. Demina



Gentiana squarrosa, *Leontopodium ochroleucum*, *Oxytropis bracteata*, *Rubus saxatilis*, *Orostachys spinosa*, *Dianthus versicolor* and *Allium strictum*. Photo: O. Demina, D. Frank, M. Janišová and L. Kozub.



- Dengler, J. (2008): Pitfalls in small-scale species-area sampling and analysis. *Folia Geobot.* 43: 269–287.
- Dengler, J. (2009a): Which function describes the species-area relationship best? – A review and empirical evaluation. *J. Biogeogr.* 36: 728–744.
- Dengler, J. (2009b): A flexible multi-scale approach for standardised recording of plant species richness patterns. *Ecol. Indic.* 9: 1169–1178.
- Dengler, J., Boch, S. (2008): Sampling-design effects on properties of species-area curves – A case study from Estonian dry grassland communities. *Folia Geobot.* 43: 289–304.
- Dengler, J., Demina, O. (2012): 5th EDGG Research Expedition to Northern Greece, May 2012. *Bull. Eur. Dry Grassl. Group* 16: 18–20.
- Dengler, J., Bedall, P., Bruchmann, I., Hoefft, I., Lang, A. (2004): Artenzahl-Areal-Beziehungen in uckermärkischen Trockenrasen unter Berücksichtigung von Kleinstflächen – eine neue Methode und erste Ergebnisse. *Kiel. Not. Pflanzenkd. Schlesw.-Holst. Hamb.* 32: 20–25.
- Dengler, J., Ruprecht, E., Szabó, A., Turtureanu, D., Beldean, M., Uğurlu, E., Pedashenko, H., Dolnik, C., Jones, A. (2009): EDGG cooperation on syntaxonomy and biodiversity of *Festuco-Brometea* communities in Transylvania (Romania): report and preliminary results. *Bull. Eur. Dry Grassl. Group* 4: 13–19.
- Dengler, J., Kuzemko, A., Yavorska, O. (2010): Impressions from the EDGG Research Expedition 2010 to Central Podilia (Ukraine). *Bull. Eur. Dry Grassl. Group* 8: 15–16.
- Dengler, J., Jansen, F., Glöckler, F., Peet, R.K., De Cáceres, M., Chytrý, M., Ewald, J., Oldeland, J., Lopez-Gonzalez, G., Finckh, M., Mucina, L., Rodwell, J.S., Schaminée, J.H.J., Spencer, N. (2011): The Global Index of Vegetation-Plot Databases (GIVD): a new resource for vegetation science. *J. Veg. Sci.* 22: 582–597.
- Dengler, J., Becker, T., Ruprecht, E., Szabó, A., Becker, U., Beldean, M., Bita-Nicolae, C., Dolnik, C., Goia, I., Peyrat, J., Sutcliffe, L.M.E., Turtureanu, P.D., Uğurlu, E. (2012a): *Festuco-Brometea* communities of the Transylvanian Plateau (Romania) – a preliminary overview on syntaxonomy, ecology, and biodiversity. *Tuexenia* 32: 319–359 + 2 tables.
- Dengler, J., Todorova, S., Becker, T., Boch, S., Chytrý, M., Diekmann, M., Dolnik, C., Dupré, C., Giusso del Galdo, G.P., Guarino, R., Jeschke, M., Kiehl, K., Kuzemko, A., Löbel, S., Otýpková, Z., Pedashenko, H., Peet, R.K., Ruprecht, E., Szabó, A., Tsiripidis, I., Vassilev, K. (2012b): Database Species-Area Relationships in Palaeartic Grasslands. – In: Dengler, J., Oldeland, J., Jansen, F., Chytrý, M., Ewald, J., Finckh, M., Glöckler, F., Lopez-Gonzalez, G., Peet, R.K., Schaminée, J.H.J. [Eds.]: *Vegetation databases for the 21st century*. Biodivers. Ecol. 4: 321–322. Biocentre Klein Flottbek and Botanical Garden, Hamburg.
- Dengler, J., Bergmeier, E., Willner, W., Chytrý, M. (2013): Towards a consistent classification of European grasslands. *Appl. Veg. Sci.* 16: 518–520.
- Dolnik, C. (2003): Artenzahl-Areal-Beziehungen von Wald- und Offenlandgesellschaften – Ein Beitrag zur Erfassung der botanischen Artenvielfalt unter besonderer Berücksichtigung der Flechten und Moose am Beispiel des Nationalparks Kurische Nehrung (Russland). *Mitt. Arbeitsgem. Geobot. Schleswig-Holstein Hamb.* 62: 183 pp., Kiel.
- Drakare, S., Lennon, J.J., Hillebrand, H. (2006): The imprint of the geographical, evolutionary and ecological context on species-area relationships. *Ecol. Lett.* 9: 215–227.
- Ermakov, N. (2012): *Prodromus vysshikh edinits rastitelnosti Rossii* [in Russian]. In: Mirkin, B.M., Naumova, L.G. [Eds.]: *Sovremennoe sostoyanie osnovnykh kontseptsii nauki o rastitelnosti*: pp. 377–483, Gilem, Ufa.
- Ermakov, N., Chytrý, M., Valachovič, M. (2006): Vegetation of the rock outcrops and screes in the forest-steppe and steppe belts of the Altai and Western Sayan Mts., southern Siberia. *Phytocoenologia* 36: 509–545.
- Grubov, V.I. (2001): Key to the vascular plants of Mongolia. Science Publ., Enfield, NH.
- Guarino, R., Becker, T., Dembicz, I., Dolnik, C., Kacki, Z., Kozub, Ł., Rejžek, M., Dengler, J. (2012): Impressions from the 4th EDGG Research Expedition to Sicily: community composition and diversity of Mediterranean grasslands. *Bull. Eur. Dry Grassl. Group* 15: 12–22.
- Guilhaumon, F., Gimenez, O., Gaston, K.J., Mouillot, D. (2008): Taxonomic and regional uncertainty in species-area relationships and the identification of richness hotspots. *Proc. Natl. Acad. Sci. USA* 105: 15458–15463.
- Hauck, M.H., Solongo, Z.-A.B. (2010): *Flowers of Mongolia*. 325 pp., Verlag Rüdiger Biermann, Telgte.
- Hilbig, W. (1995): *The Vegetation of Mongolia*. 258 pp., SPB Academic Publishing, Amsterdam.
- Hilbig, W. (2000): Kommentierte Übersicht über die Pflanzengesellschaften und ihre höheren Syntaxa in der Mongolei. *Feddes Repertorium* 111: 75–120.
- Karamysheva, Z. B. (1993): *Botanicheskaya geografiya stepei Eurazii: problemy sohraneniya i vostanovleniya*. SPb.-M., pp. 6–29.
- Kholboeva, S. A. & Namzalov, B. B. (2011): *Osnovy stepevedeniya*. Ulan-Ude, Publishing house of Bratskyi Gosudarstvennyi Universitet, 158 pp.
- Kolektiv (2010): *Annotirovannyi spisok vysshikh sosudistyykh rastenii uchastka "Ozero Itkul" zapovednika „Khakasskii“*. Khakasskoe knizhnoe izdatel'stvo, Abakan, 418 pp.
- Korotkov, K., Morozova, O., Belonovskaya, E. (1991): *The USSR Vegetation Syntaxa Prodromus*. Dr Gregory E. Vilchek, Moscow.



Lilium pumilum. Photo: R. Jaunatre



Ephedra monosperma. Photo: M. Janišová



Veronica incana and *Veratrum nigrum*. Photo: R. Jaunatre



Gentiana decumbens and *Phlox sibirica*. Photo: M. Janišová and R. Jaunatre



- Krasnoborov, I.M. (1979): *Opredelitel' rastenij Krasnojarskogo kraja*. 669 pp., Izd. Nauka, Novosibirsk.
- Kuminova, A. V., Zvereva, G. A., Maskae, Yu M., Lamanova, T. G. (1976): *Vegetation Cover of the Khakassia* [in Russian]. Novosibirsk: Nauka Press. 423 pp.
- Löbel, S. (2002): *Trockenrasen auf Öland: Syntaxonomie – Ökologie – Biodiversität*. 178 + XIV pp. + 4 tables, Diplom thesis, Institute of Ecology and Environmental Chemistry, University of Lüneburg. URL: http://www.biodiversity-plants.de/downloads/press_theses/thesis.diplom.007.pdf.
- Löbel, S., Dengler, J. (2008) ["2007"]: Dry grassland communities on southern Öland: phytosociology, ecology, and diversity. In: van der Maarel, E. [Ed.]: *Structure and dynamics of alvar vegetation on Öland and some related dry grasslands – Dedicated to Ejvind Rosén on his 65th birthday*. Acta Phytogeogr. Suec. 88: 13–31, Svenska Västgeografiska Sällskapet, Uppsala.
- Löbel, S., Dengler, J., Hobohm, C. (2006): Species richness of vascular plants, bryophytes and lichens in dry grasslands: The effects of environment, landscape structure and competition. *Folia Geobot.* 41: 377–393.
- Merunková, K., Preislerova, Z., Chytrý, M. (2012): White Carpathian grasslands: can local ecological factors explain their extraordinary species richness? *Preslia* 84: 311–325.
- Nikolskaya, L.A. (1968): *Khakassia*. Krasnoyarsk: 243 pp.
- Niu, K., Choler, P., de Bello, F., Mirotnick, N., Du, G., Sun, S. (in press): Fertilization decreases species diversity but increases functional diversity: A three-year experiment in a Tibetan alpine meadow. *Agric. Ecosyst. Environ.* DOI: 10.1016/j.agee.2013.07.015.
- Pedashenko, H., Apostolova, I., Boch, S., Ganeva, A., Janišová, M., Sopotlieva, D., Todorova, S., Ünal, A., Vassilev, K., Vele, N., Dengler, J. (2013): Dry grasslands of NW Bulgarian mountains: first insights into diversity, ecology and syntaxonomy. *Tuexenia* 33: 309–346.
- Vrahnakis, M.S., Janišová, M., Rüşa, S., Török, P., Venn, S., Dengler, J. (2013): The European Dry Grassland Group (EDGG): stewarding Europe's most diverse habitat type. In: Baumbach, H., Pfützenreuter, S. [Eds.]: *Steppenlebensräume Europas – Gefährdung, Erhaltungsmaßnahmen und Schutz*. Thüringer Ministerium für Landwirtschaft, Forsten, Umwelt und Naturschutz, Erfurt (in press).
- Triantis, K. A., Guilhaumon, F., Whittaker, R.J. (2012): The island species-area relationship: biology and statistics. *J. Biogeogr.* 39: 215–239.
- Troyakov, P. (2007): *Mify i legendy Khakasov*. Abakan.
- Williamson, M. (2003): Species-area relationships at small scales in continuum vegetation. *J. Ecol.* 91: 904–907.
- Wilson, J.B., Peet, R.K., Dengler, J., Pärtel, M. (2012): Plant species richness: the world records. *J. Veg. Sci.* 23: 796–802.



Source of the drawings: Myths and legends of the Kikass (Troyakov 2007)

Arseny Tarkovsky

Steppe

Earth swallows herself
And, knocking her head against the sky,
Patches the gaps in her memory
With humankind and grass.

Grass hides under the horse-shoes,
Soul in an ivory box;
Only word beneath the moon
Looms in the steppe

Which sleeps like a corpse.
Boulders on burial mounds -
Tsars playing at watchmen -
Drunk stupid on moonlight.

Word is the last to die.
When the drill of water pushes up
Through the subsoil's tough integument,
Sky will stir

And burdock's eyelash sigh,
Grasshopper's saddle flash,
Bird of the steppe comb,
Sleepy, its rainbow wing.

Then up to his shoulders in blue-grey milk
See Adam enter the steppe from paradise,
Restoring both to bird and stone
The gift of intelligent speech;

He recreated while they slept
Their palpitating names,
And now he breathes delirium of consciousness,
Loving, like soul, into grass.

1961

Арсений Александрович Тарковский

СТЕПЬ

Земля сама себя глотает
И, тычась в небо головой,
Провалы памяти латает
То человеком, то травой.

Трава - под конскою подковой,
Душа - в коробке костяной,
И только слово, только слово
В степи маячит под луной.

Почует степь, как неживая,
И на курганах валуны
Лежат - цари сторожевые,
Опившись оловом луны.

Последним умирает слово.
Но небо движется, пока
Сверло воды проходит снова
Сквозь жесткий щит материка.

Дохнет репейника ресница,
Сверкнет кузнечика седло,
Как радугу, степная птица
Расчешет сонное крыло,

И в сизом молоке по плечи
Из рая выйдет в степь Адам
И дар прямой разумной речи
Вернет и птицам и камням.

Любовный бред самосознания
Вдохнет, как душу, в корни трав,
Трепещущие их названия
Еще во сне пересоздав.

1961



22 July 2013

After arrival of the last expedition participants by flight from Moscow we gathered in the administration office of the Khakassia Reserve in Abakan. The press conference was organized for the Khakassian TV to inform the local public on the aims and participants of our EDGG research expedition. After refreshment, Nikolai Ermakov presented the expedition destinations. Due to the strong precipitation during the last months we could not visit higher altitudes of the Western Sayan Ridge (as originally planned). Instead, we travelled further north to the region Podzaploty. On the other hand, thanks to the rains, the steppes remained green and colourful up to and during our expedition. A small bus took us 160 km towards northeast to our first destination – Lake Itkul. We were accommodated in the nature reserve's visitor centre.



In the afternoon, we approached the first meadow steppes in the close vicinity of the visitor centre. Nikolai and Mariya trained us in the plant identification. Only some plants were familiar to those Europeans among us who visited Southern Siberia for the first time (e.g. *Aster alpinus*, *Calamagrostis epigeios*, *Campanula glomerata*, *Carex humilis*, *Geranium pratense* and *Sanguisorba officinalis*). Plenty of new plant names filled up our memo pads and brains. It started to be exciting!



EDGG Expedition 2013 in the Altai Mts.: Species-area sampling in dry grasslands

Plot No.: RU23 Subplot: None Date: 27.07.2013 Page 1 of 2

Protocol: None Other author(s): Robert Nilsson

Location: Khakassia, Altai G. RU Precision: 100 m Corner: NW

Geographic system: WGS 84 Longitude: 90°03'39.6" Latitude: 54°29'44.5" Altitude: 6649 m a.s.l.

Aspect: 180° Inclination: 35° Microrelief: A cm Soil depth (Exp): 11.5-12.0 cm

Relief position: ridge slope Land-use: (None)

Vegetation type: HERBACEOUS PRUNELLA-CRANFLING-RUBUS (S)

Comments: TERRESTRIAL COMMUNITY ON TREE-LESS MOUNTAIN

Layer	Cover (%)	10 m x 10 m	1 m x 1 m	10 cm x 10 cm	1 m x 1 m	10 cm x 10 cm	1 m x 1 m	10 cm x 10 cm	1 m x 1 m	10 cm x 10 cm
1	100									
2	100									
3	100									
4	100									
5	100									
6	100									
7	100									
8	100									
9	100									
10	100									
11	100									
12	100									
13	100									
14	100									
15	100									
16	100									
17	100									
18	100									
19	100									
20	100									
21	100									
22	100									
23	100									
24	100									
25	100									
26	100									
27	100									
28	100									
29	100									
30	100									
31	100									
32	100									
33	100									
34	100									
35	100									



23 July 2013

Lake Itkul is considered to be the cleanest of all Khakassian lakes. Its water is not salty like in the Lake Shira in the close vicinity. The fresh water provided us with the opportunity to swim and relax during our breaks at midday or in the evenings. On the lakeshores ancient burial mounds (kurgans) of different ages (mostly from the Bronze and Early Iron Age) are dispersed. The steppe was all around – and we wanted to study it in detail. The Khakassian steppe occurs in a gently undulating landscape – probably very similar to that of Central Europe in the late-glacial period – with endless grasslands and sparse patches of forests with *Betula pendula* and *Larix sibirica*, typically found on the northern slopes of the hills, where the snow cover lasts long enough to free the trees from the stress of having warm branches and frozen roots.

The first biodiversity plot we sampled together – imagine 14 botanists sampling a single plot! But the high quality of our relevés is not ensured only by a high density of botanist per square meter but much more by our sampling approach. In the nested-plot series we sample plots at several spatial scales. Along with the floristic composition of vascular plants and cryptogams, we recorded environmental data and collected the soil samples. After sampling several biodiversity plots our work was interrupted by a lunch break. We returned to the camp and enjoyed warm meal prepared by our Khakassian cook – the Russian cabbage soup called *Shchi*, a main course with a lot of meat and biscuits with candies at the end. In the afternoon we came back to the field to sample 10-m² standard plots on differing microlocalities but due to a storm we had to return.





25 July 2013

By a small bus we travelled 30 km towards southeast to the region with higher precipitation and subsequently more mesophilous species and trees.

The steppe itself is a patchwork of different habitats. In brief, the three most common types in the surveyed areas were i) the flat and gently sloping alluvial soils, dominated either by *Stipa capillata* or *S. krylovii*; ii) the steeper slopes, dominated by *Hedysarum gmelinii*, *Helictotrichon schellianum* and *H. desertorum* and iii) the windy ridges and upper parts of the south-facing slopes, where the wind and the sun sweep away the snow cover very quickly, exposing the plants to tremendous daily and seasonal temperature ranges. The cryo-petrophilous vegetation of these stony places is reminiscent of the *Kalmia procumbens* stands of the Alps, but here chamaephytes are almost absent, replaced by plants as beautiful as *Orostachys spinosa*, *Dendranthema zawadskii*, *Phlox sibirica*, *Androsace dasyphylla*, *Arotogeron gramineum*, *Youngia tenuicaulis*, *Elytrigia lolioides*, *Kobresia filifolia* or *Kitagawia baicalensis*. Interestingly, some abundant species of these habitats are also dominant or quite common in European high-mountain dry grasslands (e.g. *Carex humilis*, *Aster alpinus* and *Seseli libanotis* in the grasslands above the timberline in the Central Apennines), providing exciting insights in the historical development of these communities. The northern slopes in our study region were sometimes covered by loose *Betula pendula* forest with rich understorey vegetation. In this region, meadow steppes of European-Siberian type (*Festuco-Brometea* class) prevailed. They were extremely colourful thanks to flowering *Hemerocallis minor*, *Castilleja pallida*, *Bupleurum multinerve*, *Vicia amoena*, *Veratrum nigrum* or *Gymnadenia conopsea*. We sampled in two groups. The lunch was served in the field and tasted great.

In the evening we worked in the big hall of the visitor centre – we determined the plants, studied the literature, edited the recorded relevés and discussed while drinking the local beer “Abakanskoe”.



26 July 2013

Our destination was the valley of Katjushkino near the village Son. Several decades ago, the local cooperative used this region quite intensively for agriculture and cattle grazing. Today, except for a small cattle herd and a couple of fields, the valley is almost unused. Again, we divided into two groups with one local expert supervising each of them. The plant names gradually became familiar to us. It was striking, how the same set of species was repeatedly recorded during the whole day! Fortunately, we also found some new species here: *Phlojodicarpus sibiricus* and *Plantago urvillei*, and dozens of rosettes for the evening determination session.



27 July 2013

We continued sampling the surroundings of the Lake Itkul during the hot morning and returned back to the visitor centre for lunch. In the afternoon, after another storm, we inspected the lakeshores and improved our Russian conversation skills. The most active members of our team continued in sampling meadow steppes in the neighbourhood. In the evening, as usual, the "bania" was prepared for us: a wooden house with three rooms, the first heated to 100° C for the sauna, the second with a tub of cold water and a tap with hot water for washing, and the third as a changing room.





28 July 2013

After the Sunday breakfast we were ready to travel to the second place of our fieldwork, located about 100 km towards northwest. Mariya returned to Abakan so the number of local experts in our team was reduced to one person. Fortunately, Svetlana with Masha and Lera accompanied us and took care of the food during the following days. From the simple food supplies they produced a real artistic work.

Nikolay told us that in Russia there are not roads just directions. Our journey to Podzaploty was a partial proof of this statement. The sudden change in local climate and biota immediately became clear after leaving the cars – we were attacked by thousands of hungry mosquitoes, midges and other invertebrates. Fortunately, our organizers were aware of this danger and provided us with repellents in advance.

Very soon after our arrival to a new destination, huge colourful flowers appeared in the steppe – our tents. Our bathroom was the near spring of fresh water and for the toilet we could choose any romantic place in the camp surroundings. Fortunately or unfortunately, most romantic places were full of both, strawberries (*Fragaria viridis* with many big and ripe fruits) and mosquitoes. We enjoyed one of the most advanced instruments in the wilderness – “rukomojku” – a container of water for washing hands. Some of us got used to it quite well.





29 July 2013

It was a day of climbing. One group of participants climbed to the highest peak near our camp. On the way they recorded relevés on steep and rocky slopes. Apart from that, on the edges close to the top they discovered a stand of *Stipa orientalis* – nice, rather a small species of this genus. Recording in this plot was almost a climbing exercise.

At the same time, the rest of participants worked at lower altitudes, but also in petrophytic vegetation. They climbed on a “volcano” – the cone-shape porphyric hill, distinctive from the surrounding landscape. It was a locality of another interesting plant, *Atraphaxis lanceolata*, a shrubby species of the Polygonaceae family. From here, one could observe an amazing forest-steppe landscape with patches of *Betula*/*Larch* woods within the huge grassland extension: an astonishing “time-machine”, as it can be viewed as a modern analogue of the landscape inferred from pollen records for the Last Glacial Maximum in many parts of Central and South Europe.





29 July 2013

This was the rainiest day during our expedition but sampling in wet conditions was not a problem for the skilled researchers. At least we could use all waterproof equipment we brought with us. Two groups worked around the lakes and near the porphyric hill. In the afternoon, we climbed the mountain over the camp again to sample the last relevés of this year's expedition. Beautiful views in all directions reminded us how huge and how empty the steppes surrounding us are. The most spectacular thing, however, was experiencing the immense, void steppe swaying in the wind; the gentle undulations of the Asiatic continental shield, where the mountains are now reduced to gently sloping hills, with sparse rocky outcrops. For tens of kilometres, the only human tracks were a few, scattered, proto-historic stones, the kurgans: monoliths erected to mark the burial of brave men and horses. A landscape unchanged for centuries, in which you expect to see appearing at any moment the Golden horde of Tartars, galloping navigators in a sea of grass; with no roads, just directions determined by the sun, the stars and the distant hills.

We enjoyed the feeling of being far away from everything, the majestic flights of the many birds of prey (e.g. *Aquila heliaca*, *Buteo rufinus*, *Milvus migrans*), the scurrying "sus-likes" (*Spermophilus undulatus*). During our trip, we saw small and black countryside villages; each house surrounded by a lopsided fence, probably built to define a human space in that superhuman, infinite land. The roads leading to those villages were long, straight, sleepy, no traffic, but sometimes crossed by crooked and surprisingly strong vehicles. We saw lakes without tributaries; their waters were clear as the rain that, in summer, makes the steppe flower ...

Pancakes awaited us in the camp!





Photos for the diary were provided by Renaud Jaunatre,
Dieter Frank and Monika Janišová



31 July 2013

In the morning we packed the tents and bags. Then, at ten, we had our last field breakfast. On the way to Abakan we said farewell to Nikolai (he went to Novosibirsk). After our arrival to Abakan we met Mariya, who prepared dinner for us. In the evening, Mariya organized a "sightseeing tour" through Abakan for us. We enjoyed the calm city atmosphere, old buildings and monuments contrasting with modern park equipment. Abakan made a good impression on us - it is well maintained, has a lot of greenery and urban parks, which in the afternoons are filled with people. We spent our night at the administration office of the Khakassia Reserve in Abakan.



1 August 2013

For most of the participants this was the day of returning home. Goodbye Khakassian steppe!



Forum

The Forum section offers the possibility to our members to post small requests or initiate discussions that might be interesting to other members as well.

The value of making hay

Writer Adam Nicholson visited Transylvania last summer as a guest of the Pogány-havas Association, and wrote a lyrical article for National Geographic magazine July 2013 edition [Hay. Beautiful. <http://ngm.nationalgeographic.com/2013/07/transylvania-hay/nicolson-text>]

In this region of the Eastern Carpathians, mountain hay meadows are outstandingly rich in flowers and insects.

See it for yourself at the next **International Haymaking Festival, 3 to 10 August 2014.**

And read the presentations from our conference "Mountain hay meadows- economic, environmental and social value" <http://mountainhaymeadows.eu/presentations.html>

*Barbara Knowles, e-mail: barbara.knowles@yahoo.co.uk
<http://www.treasuresoftransylvania.org/>*



Making hay in Transylvania. Photo: Credit Sári Áttila

Recent publications of our members

With this section, the contents of which will also be made available via our homepage, we want to facilitate an overview of **dry grassland-related publications** throughout Europe and to improve their accessibility. You are invited to send lists of such papers from the last three years following the style below to monika.janisova@gmail.com and rusina@lu.lv. We will include your e-mail address so that readers can request a pdf. For authors who own full copy-right, we can also post a pdf on the EDGG homepage. As we plan to publish a book about the European dry grasslands at some point in the future, under the auspices of the EDGG, we would appreciate if you could send a pdf (or offprint) of each of your dry grassland publications to dengler@botanik.uni-hamburg.de.

Al-Hawija, B. N., Partzsch, M. & Hensen, I. (2012): Effects of temperature, salinity and cold stratification on seed germination in halophytes. *Nordic Journal of Botany* 30: 1–8. Doi: 10.1111/j.1756-1051.2012.01314.x

Mason, N. W. H., Pipenbaher, N., Škornik, S. & Kaligarič, M. (2013): Does complementarity in leaf phenology and inclination promote co-existence in a species-rich meadow? Evidence from functional groups. *J. Veg. Sci.* 24: 94–100.

Partzsch, M. (2011): Does land use change affect the interaction between two dry grassland species? *Flora* 206: 550–558. doi:10.1016/j.flora.2010.09.010

Partzsch, M. (2013): Growth performance and species interaction of *Festuca rupicola* Heuff. and *Dianthus carthusianorum* L. subjected to temperature increase and Nitrogen addition. *Journal of Plant Studies* 2/2: 122–135. doi:10.5539/jps.v2n2p122.

Partzsch, M. & Bachmann, U. (2011): Is *Campanula glomerata* threatened by competition from expanding grasses? Results of a long-term experiment. *Plant Ecology* 212: 251–261. Doi: 10.1007/s11258-010-9819-5.

Pipenbaher, N., Kaligarič, M. & Škornik, S. (2011): Floristic and functional comparison of karst pastures and karst meadows from the North Adriatic karst. *Acta Carsologica* 40: 515–525.

Pipenbaher, N., Škornik, S., de Carvalho, G. H. & Batalha, M. A. (2013): Phylogenetic and functional relationships in pastures and meadows from the North Adriatic Karst. *Plant Ecol.* 214: 501–519.

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European Dry Grassland Meeting in Zamość, Poland. Grassland Party in Muzealna Restaurant where the nettle soup was served and Polish beer was tested. Photo: J. Dengler

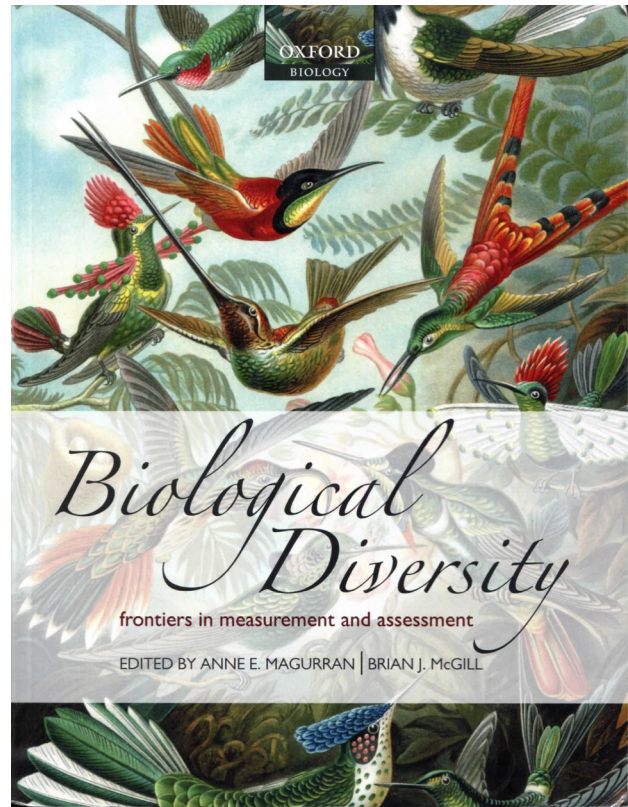
Book reviews

Here we present recently published books that might be relevant for grassland scientists and conservationists, both specific grassland titles as well as faunas, floras, or general books on ecology and conservation biology. If you (as an author, editor or publisher) would like to propose a certain title for review, or if you (as an EDGG member) would like to write a review (or reviews in general), please contact the Book Review Editor (dengler@botanik.uni-hamburg.de).

Magurran, A.E., McGill, B.J. (2011) [Eds.]: Biological diversity – frontiers in measurement and assessment. XVII + 345 pp., Oxford University Press, Oxford. ISBN 978-0-19-958067-5. Price: 39.95 GBP (paperback).

“Biodiversity” is probably the most popular buzzword in organismic biology in recent years – there are nearly 70,000 articles in the Web of Science on that topic (“biodiversity” OR “biological diversity” OR “species diversity”) up to now. A range of books is devoted to it, starting with the influential multi-authored volume by Ricklefs & Schluter (1993) and the much-cited textbook of Rosenzweig (1995). However, after this initial phase following the CBD Conference in Rio de Janeiro 1992, nobody again set up to prepare a comprehensive textbook on biodiversity to reflect the rapidly growing knowledge in the field. Two more recent textbooks by Gaston & Spicer (2004) and Lévêque & Mounolou (2004) cover hardly the depth of information needed at the BSc level, let alone what MSc or PhD students of the field should know, and they are also nearly one decade old now. Beyond that, there are two books focussed on the determination or measurement of biodiversity, one general (Magurran 2004) and one specific for (vascular) plants (Stohlgren 2007), but both, while containing some valuable aspects, clearly suffer from a quite biased and incomplete presentation even of this measurement aspect. One of the most recent and most recommendable biodiversity books is the Ecological Reviews volume edited by Storch et al. (2007), bringing some of the most famous researchers in the field together to present the state-of-the-art knowledge of scaling laws in biodiversity, who, by doing so, also treat a big proportion of the theory of biodiversity research in general. Still there was no in-depth and up-to-date textbook.

Therefore, the publication of Magurran & McGill (2010) raised high expectations. While this book – as the title says – does not aim to cover biodiversity per se, it also is not just an updated version of the older title of Magurran (2004). The edited volume authored by 40 authors is structured into 21 chapters, organised in six main parts: (i) basic measurement issues, (ii) diversity, (iii) distribution, (iv) alternative measures of diversity, (v) applications, and (vi) conclusions. In part (ii), the chapters 5 by Maurer & McGill and 6 by Jost et al. provide well-structured and comprehensive overviews of alpha- and beta-diversity measures. Part (iii) then addresses the meaning of commonness and rarity in general and then more specifically in two chapters each, how to deal with species abundance distributions (i.e. commonness and rarity in one community) and species occupancy distributions (the same patterns across space). Under the somewhat misleading headline “Alternative



measures of diversity”, Weiher (chapter 13), Vellend et al. (14) and Culver et al. (15) give concise overviews of functional diversity, phylogenetic diversity and genetic diversity, respectively. Finally, part V leaves the methodological aspects at least partly behind and presents some real-world diversity patterns in the context of ecological theory. Chapters, inter alia, deal with microbial diversity, the relationship of diversity and disturbance and palaeohistoric diversity. The book is completed by a three-page summary of the editors and a reference list of approx. 1,200 entries.

The concept and the content of the volume convince far more than Magurran’s (2004) book on the same topic. Through the involvement of multiple, well-known specialists, the topic is presented in much more breadth, depth and less biased, than it was the case, perhaps unavoidably, in the earlier publication. Well, there are still some blind spots in the presentation: scaling laws that are so central to biodiversity theory (see Storch et al. 2007), for my feeling, are treated too marginally. In consequence, the chapter 4 on estimating species richness by Gotelli & Colwell focusses exclusively on rarefaction curves, despite their in reality often more than poor performance, but neglects other approaches as species-area curves, which often might be more promising (see

Dengler & Oldeland 2010). The second chapter with the same title (chapter 21 by Rosenzweig et al.) uses the term species-area curves but to a large extent applies it to rarefaction curves with their completely different shape (Dengler 2009).

Nevertheless, this is probably the best single-volume book on biodiversity available to date. Despite the high number of authors, the editors managed well in achieving a good consistency in terms of structure, presentation and terminology between chapters. For a second edition, one would wish that the editors extend the coverage to include (a) more theory about how biodiversity emerges and is maintained, (b) treat scaling laws more thoroughly and (c) extend the present part V so that it gives a concise overview of the global status and patterns of biodiversity at all scales.

Dengler, J. (2009): Which function describes the species-area relationship best? A review and empirical evaluation. *J. Biogeogr.* 36: 728–744.

Dengler, J., Oldeland, J. (2010): Effects of sampling protocol on the shapes of species richness curves. *J. Biogeogr.* 37: 1698–1705.

Gaston, K.J., Spicer, J.I. (2004): *Biodiversity: an introduction*. 2nd ed. XV + 191 pp., Blackwell, Oxford.

Lévêque, C., Mounolou, J.-C. (2004): *Biodiversity*. XI + 284 S., Wiley, Chichester.

Magurran, A.E. (2004): *Measuring biological diversity*. VIII + 256 pp., Blackwell, Malden, MA.

Ricklefs, R.E., Schluter, D. (1993) [Eds.]: *Species diversity in ecological communities – historical and geographical perspectives*. 416 pp., University of Chicago Press, Chicago.

Rosenzweig, M.L. (1995): *Species diversity in space and time*. XXI + 436 pp., Cambridge University Press, Cambridge.

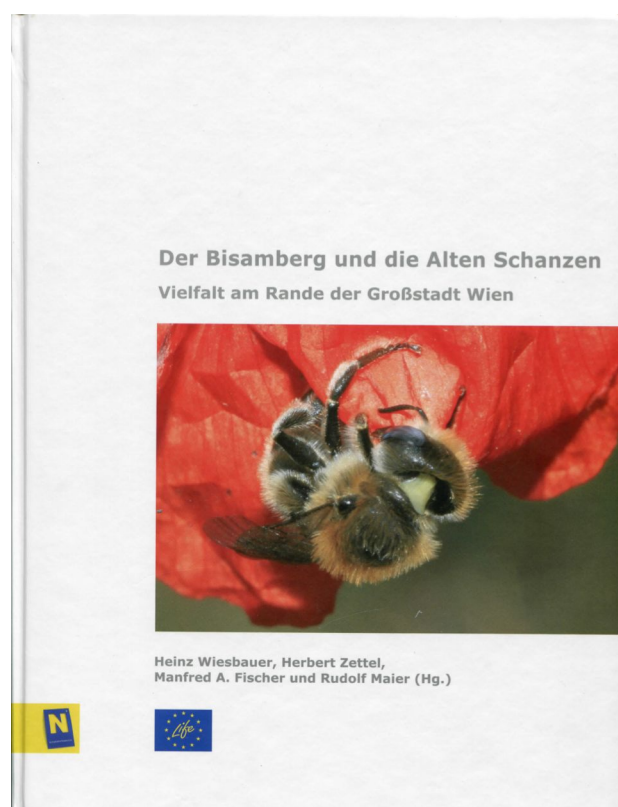
Stohlgren, T. J. (2007): *Measuring plant diversity – Lessons from the field*. XVII + 390 pp., Oxford Univ. Pr., Oxford.

Storch, D., Marquet, P.A., Brown, J.H. (2007) [Eds.]: *Scaling biodiversity*. XVII + 470 pp., Cambridge Univ. Pr., Cambridge.

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Wiesbauer, H., Zettel, H., Fischer, M.A., Maier, R. (2013) [Eds.]: *Der Bisamberg und die Alten Schanzen – Vielfalt am Rande der Großstadt Wien*. 2nd ed., 396 pp., Amt der NÖ Landesregierung, St. Pölten. ISBN: 3-901542-40-X. 25.00 EUR (order from: post.ru5@noel.gv.at).

In one of the first EDGG Bulletins (No. 2, 2009, p. 16), a quite similar book by the same first editor has been reviewed: Wiesbauer (2008) treated all the dry grasslands in the federal state of Lower Austria. The concept and layout of the present volume are similar, but, despite



dealing “only” with a single Natura-2000 habitat at the border of Vienna and Lower Austria, is even thicker. Forty-six chapters written by respective experts and illustrated with 650 fantastic colour photos present the biota of the area, from groups that are generally well-known and often illustrated, like vascular plants, birds and grasshoppers to others that are rarely treated in monographs of nature reserves and even less frequently shown in nice photos, such as bryophytes, soil invertebrates, numerous families of beetles and hymenopterans as well as harvestmen. The book is completed by 100 pages of small printed species lists of all studied taxa in the area that witness the extreme richness of such a xerothermic habitat complex (in some groups, it is the richest known site in the whole of Austria!). In the present second edition, the species lists could be expanded by more than 200 taxa compared to the first edition. The editors might be right that the Bisamberg is now among the sites in Central Europe whose biological richness has been inventoried most completely. Geology and landscape history are treated relatively shortly (20 pp.) in an introductory chapter, while the actual management measures carried out in the LIFE project in whose context the book emerged are presented only on slightly more than 10 pages at the end. The latter is a pity because more detailed analyses about success (or failure) of certain approaches would be valuable knowledge for site managers elsewhere. But this does not reduce the merits of the book.

Wiesbauer, H. (2008) [Ed.]: *Die Steppe lebt – Fels/steppen und Trockenrasen in Niederösterreich*. 224 pp., Amt der NÖ Landesregierung, St. Pölten.

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Forthcoming events

Concepts for modern management of xeric grasslands between nature conservation and agriculture

26–27 September 2013, Criewen near Schwedt, Germany

<http://www.edgg.org/pdf/program%20dry%20grassland.pdf>

Contact: info@brandenburgische-akademie.de

Deadline for registration: 16 September 2013

International Conference “Open Landscapes 2013”

Ecology, management and nature conservation

29 September – 3 October 2013, Hildesheim, Germany

<http://www.open-landscapes2013.de/welcome/>

23rd Workshop of the European Vegetation Survey (EVS)

8–12 May 2014, Ljubljana, Slovenia

11th European Dry Grassland Meeting of the EDGG

European steppes and semi-natural dry grasslands: ecology, transformation and restoration

5–9 June 2014, Tula, Russia

57th Symposium of the International Association for Vegetation Science (IAVS)

1–5 September 2014, Perth, Australia

<http://www.iavs.org/MeetingFuture.aspx>

Biennial Meeting of the International Biogeography Society (IBS)

9–12 January 2015, Bayreuth, Germany

<http://biogeography.blogspot.de/2013/07/call-for-symposia-and-workshop.html>

58th Symposium of the International Association for Vegetation Science (IAVS)

19–24 July 2015, Brno, Czech Republic

59th Symposium of the International Association for Vegetation Science (IAVS)

30 May – 3 June, Pirenópolis, Brazil



Participants of the EDGM post-symposium excursion in Czumów, May 2013. Photo: J. Dengler



Chakassian steppe near Lake Itkul, Russia. Photo: R. Jaunatre

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Bulletin 21 to appear: December 2013

Bulletin 22 to appear: March 2014