

of the European Dry Grassland Group



Introduction

this Bulletin issue provides a detailed report from the EDGG annual meeting, 8th European Dry Grassland Meeting held in Uman (Ukraine) from the 13th to the 17th of June 2011 and a short report from the dry grassland conference held in Lublin (Poland) from 2 to 4 June 2011. We invite you to contribute to the three planned special issues in international journals containing scientific contributions on biodiversity patterns, large-scale grassland classification and other dry grassland-related topics. Much information on the EDGG structure and functioning is included in the minutes from the General Assembly. A special contribution is devoted to the Smolenice Grassland Declaration considering its aims and possible future steps towards the conservation of European grasslands. The contribution on the dehesa ecosystem illustrates the current problems of its conservation and some possible solutions. Enjoy the reading and the summer time.

Monika Janišová & members of EDGG Executive Committee

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Photo left: Hesiodia montana. P. Chmielewski.

July 2011

EDGG homepage: <http://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 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 facilities for the information exchange among 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 in different places 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.

Executive Committee

Jürgen Dengler

dengler@botanik.uni-hamburg.de: membership administration, book review editor, representative in the IAVS Council, coordinator for EDGG Expeditions, coordinator for EDGG Special Features

Monika Janišová

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Solvita Rūsiņa

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Stephen Venn

Stephen.Venn@Helsinki.Fi: development of networking and cooperation with zoologists and conservation biologists.

Michael Vrahnakis mvrahnak@teilar.gr: coordinator of EDGG conferences, science-policy coordinator, Med-DG subgroup.

Everybody can join EDGG without any fee or other obligation. To become a member of the European dry grassland Group or its subordinate units write an e-mail to Jürgen Dengler including your complete address and specifying which of the groups you want to join. The detailed information you can find at: http://www.edgg.org/about_us.htm.

Membership development

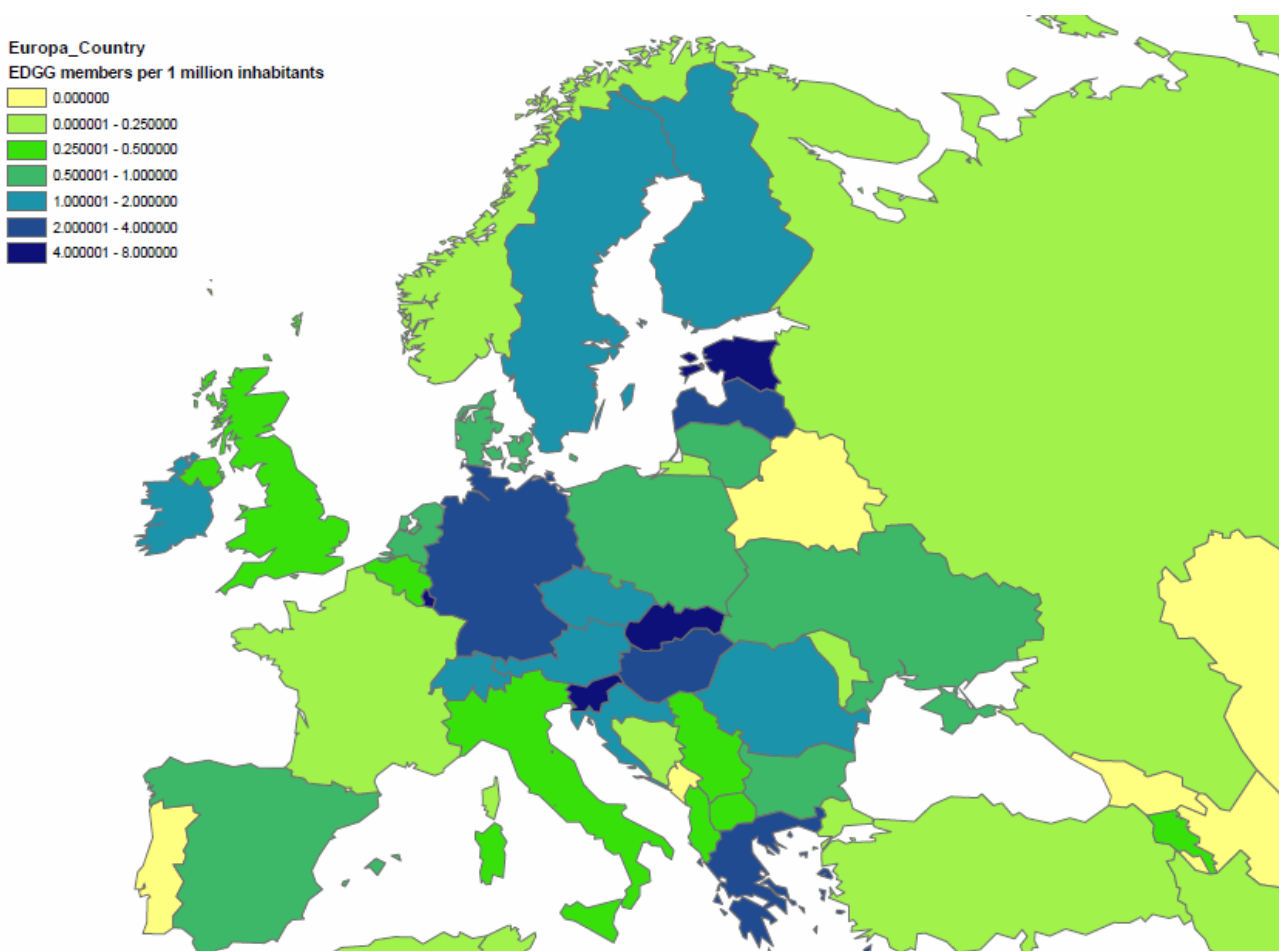
In consequence of the EDGG conference in Uman' our membership figures continued to grow. As of 17 July 2011, EDGG had 643 members from 49 countries. The highest density of members (per 1 million inhabitants) is found in Estonia, Slovakia, Slovenia and Luxembourg (Fig. on next page).

The membership figures of the four regional subgroups are as follows:

- German Arbeitsgruppe Trockenrasen: 193
- Working Group on Dry Grasslands in the Nordic and Baltic Region: 77
- Southeast European Dry Grassland Group (SEEDGG): 181
- Mediterranean Dry Grasslands (Med-DG): 148



EDGG conference participants in the Biosphere reserve "Askania-Nova". Photo: A. Kuzemko.



International Association for Vegetation Science (IAVS)

New Council, new Governing Board

In May 2011, the election to the 40-person IAVS Council took place, which will govern our mother organisation during the period 2011–2015. From the candidates proposed by EDGG, two were elected: Jürgen Dengler (142 votes) and Sandór Bartha (123 votes), while Iva Apostolova, Wolfgang Willner, Monika Janišová, Kathrin Kiehl, and Andraz Čarni slightly missed the threshold. However, in addition to the candidates nominated by EDGG, several more EDGG members have been elected to the Council, so that our organisation will be represented by 12 members in total.

At the IAVS Symposium in Lyon, in June 2012, the new Council elected the new IAVS Governing Board, with Martin Diekmann as President and Susan Wiser as Secretary. There are five Vice Presidents, each of them chairing one Committee: Robert K. Peet (Publications Committee), Michael Palmer (Membership Committee), Javier Loidi (Vegetation Classification Committee), Valério Pillar (Meetings Committee) and Alicia Acosta (Global Sponsorship Committee).

WANTED: Subject editors for AVS section “Vegetation Survey”

Due to the growing number of submissions to the new section “Vegetation Survey” of the IAVS journal *Applied Vegetation Science*, the Editors-in-Chief are asking for nominations of colleagues who could complement the presently three subject editors, Milan Chytrý, Joop H. J. Schaminée and Angelika Schwabe-Kratochwil, as editorial board members or associate editors. So if you are an IAVS member and know someone whom you consider particularly competent in handling vegetation classification papers in the leading international journal in this field, please write your proposal supported by some arguments to Prof. Milan Chytrý (Chief editor AVS) and Prof. Bastow Wilson (Chair of the chief editors of AVS and JVS): chytry@sci.muni.cz and bastow@bastow.ac.nz. Please make use of your nomination right!

8th European Dry Grassland Meeting

The 8th European Dry Grassland Meeting was held in Uman' and Kherson (Ukraine) from 13 to 17 June 2011. This meeting is the first on the territory of former USSR and the second outside Germany.

The National Dendrological Park "Sofiyvka" of the National Academy of Sciences of Ukraine was the main organizer of the Meeting from Ukrainian side. Co-organizers were M.G. Kholodny Institute of Botany of Ukraine of the NAS of Ukraine (Kyiv), Kherson State pedagogical University, National Natural Park "Buz'ky Gard", and Biosphere Reserve "Askania-Nova".

The scientific program of the Meeting was held in the world-famous Dendrological Park "Sofiyvka" – a real pearl of gardening of the late 18th - early 19th centuries and research institute of the National Academy of Sciences of Ukraine. Altogether 80 participants from 18 countries (Austria, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Russian Federation, Saudi Arabia, Slovak Republic, Sweden, Turkey, and, of course, Ukraine) took part in the Meeting.

The main topics discussed at the Meeting were biodiversity, classification, conservation and management of the dry grassland in Europe. Such problems are very urgent for Ukraine with high diversity of dry grassland and extraordinary level of environmental transformation coupled with imperfect nature protection legislation.

In the opening ceremony the participants were welcomed by Anna Kuzemko (National Dendrological Park "Sofiyvka" of the National Academy of Sciences of Ukraine and European Dry Grassland Group), Ivan Kosenko (Director of the National Dendrological Park "Sofiyvka" of the NAS of Ukraine), Jürgen Dengler (University of Hamburg and European Dry Grassland Group), Sergei Mosyakin (Director of M.G. Kholodny Institute of Botany of the NAS of Ukraine), and Yakiv Didukh (M.G. Kholodny Institute of Botany of the NAS of Ukraine).

In total, 20 talks and 33 posters were presented during the Meeting. They dealt with many theoretical and practical issues of dry grassland research, as well as problems of practical conservation and restoration of these highly vulnerable ecosystems. Oral presentations were divided into four sessions.



Participants of 8th EDG Meeting in National Dendrological Park "Sofiyvka" NAS of Ukraine. Photo: G. Sivko.



Registration and session 5. Photo: G. Sivko.



Audience during the oral presentations. Photo: G. Sivko.



General Assembly of EDGG. Photo: G. Sivko.

The first session, chaired by Stephen Venn, was focused on problems of dry grassland conservation. It included 4 talks by Piotr Chmielewski, Ivan Parnikoza, Mykyta Peregrym and Olexiy Burkovskyy. The second session chaired by Monika Janišová focussed on restoration of dry grassland and included 4 talks by Anna Szabó, Péter Török (two presentations), and Orsolya Valkó. In the third session, which was chaired by M. Vrahnakis, different aspects of dry grassland diversity were considered. The 7 talks were presented by Stephen Venn, Jürgen Dengler, Monika Janišová, Solvita Rusina, Sergey Znamenskiy, Georg Bieringer with Norbert Sauberer, and Triin Reitalu. The fourth and last session dealt with the consideration of structure, dynamics and ecological peculiarities of dry grasslands. These topics were outlined in 5 presentations by Wolfgang Willner, Iryna Korotchenko, Iryna Kovtun, Zeki Acar, and Anna Kuzemko.

The two poster sessions also followed these broad themes.

The fourth General Assembly chaired by Jürgen Dengler took place after the first day's oral presentations.

During the meeting, a competition for the best oral and poster presentation among young scientists has become traditional. The results of the competition were announced at the Grassland Party which was held in the Scientists House. The winners were Péter Török with his talk on "Techniques and costs of grassland restoration on former croplands", Triin Reitalu with a talk on "Responses of grassland species richness to local and landscape factors depend on spatial scale and habitat specialisation", Anikó Csecserits with the poster "Factors affecting the diversity and stability of dry grassland developed in oldfields" and Orsolya Valkó with the poster "Resampling plastic beads, a tool to model seed bank development and propagule dispersal in dry grasslands". They were awarded with the books "Flora, vegetation and nature conservation from Schleswig-Holstein to South America - Festschrift for Klaus Dierßen on occasion of his 60th birthday" edited by J. Dengler et al. and "Grassland vegetation of Slovak Republic — electronic expert system for identification of syntaxa" edited by M. Janišová.

The excursion program, including the most interesting areas of dry grassland in southern Ukraine, began after the scientific program was completed.

In the National Natural Park "Buz'ky Gard" (excursion guided by Galina Drabyniuk, Viacheslav Artamonov and Ivan Moysienko) the conference participants visited granite rocks in South Buh River valley near the well-known island Gard, which is connected with history of the Ukrainian Cossacks. Granite outcrops of the territory have a really unique plant and animal communities. Here the conference participants were able to see a locality of

the narrow-local South-Buh endemics *Dianthus hypanicus* Andrz., *Moehringia hypanica* Grynj & Klokov, and *Silene hypanica* Klokov, and discussed the problems of Ukrainian and European floras endemism. In the Ingul River valley (excursion guided by Ivan Moysienko) the conference participants visited the rich flora and vegetation of the limestone steppe slopes. In the Biosphere Reserve "Askania-Nova" (excursion guided by Viktor Shapoval and Orysia Gofman) they had opportunity to see a huge (in the European context) area of virgin steppe, to estimate the influence of different internal and external factors on its dynamics and to visit a famous Chaplinsky pod – the biggest depression at the Reserve territory, where the herds of grazing animals (Przhevalsky horses, bison, antelopes, zebras) are grazing in conditions closed to natural. In the National Natural Park "Oleshkivs'ki Sands" (excursion guided by Ivan Moysienko) which is the youngest in Ukraine and was established in 2010, the conference participants visited Ukrainian desert which developed at Kozeche-Lagera Lower-Dnieper arena due to excessive grazing by sheep after the Second World War. Later, a military area was established here and moving sand dunes were planted with pine to stabilise them. Not far from this area in the botanical reserve "Sagi" the conference participants saw the typical Near-Black-Sea sandy steppe. This site was of great interest to the European scientists, as it enabled them to compare Pontic sandy steppes with Pannonian, widespread in Central Europe, and also to discuss issues of their syntaxonomic position and dynamics.

Undoubtedly, this forum has been a significant event in the scientific life of Ukraine and all Europe. During the week, ideas of potential international projects in the areas of research, conservation and restoration of dry grasslands were repeatedly raised. It is possible to consider as a main achievement of this meeting, bringing the attention of European scientists to the problems of nature conservation in Ukraine and in particular to one of its most vulnerable components — dry grasslands.

Finally we would like to express sincere thanks to all conference participants for their valuable scientific contributions, friendly atmosphere during the whole of meeting and excursion in spite of high temperatures and burning sun. I am grateful to the members of the local organizer's team Inna Didenko, Galina Sivko, Mykyta Peregrym, Svitlana Emelianova, Olesya Bezsmertna, Andriy Chernenko, Vitaliy Adamenko, Nadia Sergienko, Ivan Moysienko, Alexander Khodosovtsev, Ruslana Melnyk for intensive help before and during the meeting. I thank Galina Drabyniuk, Viacheslav Artamonov, Viktor Shapoval, Orysia Gofman, Brian Kuns, and Sergey Znamenskiy for help in guiding excursions. We are grateful to the heads of National Dendrological Park "Sofiyvka", National Academy of Sciences, especially Ivan Kosenko, Vladimir Grabovyy and Alexandr Potapov and M.G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine, especially Yakiv Didukh and Sergey



Excursion in the dendrological park "Softyvka". Photo: G. Sivko, M. Janišová.



Poster Session. Photo: G. Sivko.

Tatiana Solomakha (Publishing house “Phytosociocentre”) and Gennadii Marushevskiy (Wetlands International, Ukraine) for a grant for printing products. Also I am very grateful for EDGG co-chairs for their thorough help, support and inexhaustible ideas about the conference improvement at all stages of its preparation and carrying out.

The pdf versions of the talks and poster presentations for which the authors agreed to publish their electronic version will be available at http://www.edgg.org/edgg_meeting_2011.html. On this web page you can also find the conference proceedings and the photo gallery from the meeting.

Anna Kuzemko, Uman', Ukraine



Centaurea orientalis. Photo K. Hegedüšová.

Minutes from the General Assembly of the EDGG at the 8th European Dry Grassland Meeting, Uman', Ukraine, 13 June 2011

These notes were kept by Michael Vrahnakis – if there are points that participants wanted to be presented here and they are not please do not hesitate to make a conduct with Michael at mvrahnak@teilar.gr and additional material of the G.A. maybe presented in the next 12th Bulletin.

The General Assembly (G.A.) of the EDGG during the 8th European Dry Grassland Meeting in Uman' took place after the first day's oral presentations (13/06/2011), starting at 17:00 hrs. All five members of the Executive Committee, namely Jürgen Dengler, Monika Janisova, Solvita Rusina, Michael Vrahnakis and Stephen Venn were present. A general structure of the agenda was pre-scheduled by all chairs of the EC, after personal conversations and e-mail exchanges. Five major topics were discussed during the G.A. chaired by Jürgen Dengler.

The first one was about some introductory notes, like **membership development, relationships with other organizations and EC expansion**. According to the data presented by Jürgen Dengler the membership of the EDGG reaches more than 600 members from 49 countries. A general conclusion was that despite the rapid expansion, there are still European countries missing or with rather low representativeness in EDGG. Some short comments were made concerning the participation of some members of the EDGG to the candidacy list for the IAVS Council. The election of Jürgen Dengler in the IAVS Council was briefly mentioned. Afterwards, the

four older members of the EC publicly welcomed Stephen Venn as the new, fifth member, of the EC and an open call for additional chair (the sixth), was addressed to the audience and membership as well. The EC thoughts for a Western Europe oriented sixth chair was expressed, i.e. originated from England, France, Spain, etc, for a balanced geographical representation.

Secondly, a short **report from the present members of the E.C.** was devoted to the activities related to their responsibilities. Monika (for EDGG Bulletin) and Solvita (for web page) presented their activities. A short introduction was made for the responsibilities allocated to the new member of the EC (Stephen) to support Solvita in editing the EDGG homepage and to deal with zoological issues. In his short talk Stephen expressed his strong willingness to help with the undertaken responsibilities by using wiki, facebook and other facilities. In addition, the new responsibilities of Michael, tackling with policy matters were presented to the audience.

In his **policy-related** report, Michael made a brief introduction about the status of the EDGG Bylaws, which are found in their latest condition prior to be published and

approved by membership. These Bylaws are consistent with the IAVS ones; the latter used as the basis of the former. The basics of the Bylaws, already packed into the conference material, were outlined and the notification that the completed version of the Bylaws will be sent soon to the General Membership for approval was addressed to the audience. Michael also presented some slides about the status of the Smolenice Grassland Declaration (SGD). In his talk he introduced the audience into the general frame of a Declaration, while he showed some other Grassland Declarations presented either in national or international level. He also showed the grassland related actions mentioned at the Pan-European Biological and Landscape Biodiversity Strategy which served as the reference to build the Convention for Grassland Conservation in Europe. Finally, Mike presented his thoughts about the next for the SGD that include: a) efforts for further communication of the SGD text to local, national or international fora, b) the construction of a strong and comprehensive Convention, c) promotion of the Convention in EC organs, and d) further efforts to put Convention into practice. Michael asked from the attendants to sign the SGD, in case they have not already done it, and it was agreed that the deadline for signature collections will be extended up to the last day of the 54th IAVS Symposium that is to be held in Lyon (24 of June 2012). The possibility of the establishment of a Policy Committee inside EDGG was notified.

In the fourth session, Jürgen outlined the present status of some **publication-related issues**. *Tuexenia* 31 (2011) with a Dry Grassland Special Feature guest-edited by a team of EDGG members is presently in press. Also, some a special feature of *Plant Biosystems* devoted to the Smolenice meeting is pending to be published soon.

Future venues that may host **next EDGG's conferences and research expeditions** were presented and discussed in the last session. Michael presented some slides about the Prespa's candidacy to undertake the next, 9th EDGG Meeting. The Meeting will be organized by EDGG and the Hellenic Rangeland and Pasture Society (HERPAS, www.elet.gr). The GA approved the HERPAS' proposal to host the meeting of 2012 in Prespa. Michael, in consultation with the EC and HERPAS, will take care of publishing a First Circular in the next months to be sent to all EDGG members. Finally, Jürgen presented the series of future activities of the EDGG. More specifically, he commented the 3rd SEEDGG Research Expedition that is to be held in Bulgaria in 14 - 24 August 2011 (more information: EDGG Bulletins No. 9 and 10) and invite all attendants to take part in it, since there are still some empty seats. Future potential meeting venues and research expeditions in Poland, Italy (Sicily), Russia were further commented.



Investigations on kurgan. Photo K. Hegedúšová.



Moments of Grassland Party. Photo: G. Sivko, M. Janišová.

Dry Grasslands Special Features 2011

In conjunction with the 7th European Dry Grassland Meeting in Smolenice 2010, two Special Features have been published in international journals. We thank all contributing authors, the referees and the respective Editors-in-chief for making this possible.

Tuexenia 31

Our “traditional” *Dry Grassland Special Feature* in the German geobotanical journal *Tuexenia* was just published in June 2011. It contains four regular articles and the editorial, and was guest-edited by Monika Janišová (Banská Bystrica, SK), Camilla Wellstein (Bayreuth, DE), Wolfgang Willner (Vienna, AT), and Jürgen Dengler (Hamburg, DE). The pdf's of the articles will be made freely available both at the EDGG homepage (http://www.edgg.org/edgg_publications.htm) and the FlorSoz homepage (http://www.tuexenia.de/index.php?id=14&no_cache=1&L=1). *Tuexenia* has applied for inclusion in the Web of Science but has not received an Impact Factor yet as the review is still pending. By contrast, *Tuexenia* has just been accepted (on 18 July 2011) for inclusion in the second influential global literature database SCOPUS. The reviewers wrote “*Excellent journal with articles of a high standard and has considerable impact*”. Thus, all *Tuexenia* articles from now on will be indexed in SCOPUS and considered in the bibliometric analyses based on SCOPUS.

Janišová, M., Wellstein, C., Willner, W., Dengler, J. (2011): Succession, restoration, and management of dry grasslands – Special Feature with contributions from the 7th European Dry Grassland Meeting 2010 in Smolenice. *Tuexenia* 31: 227–234.

Škodová, I., Devánová, K., Senko, D. (2011): Subxerophilous and mesophilous grasslands of the Biele Karpaty Mts. (White Carpathian Mts.) in Slovakia. *Tuexenia* 31: 235–269 + 6 tables.

Willner, W. (2011): Unambiguous assignment of relevés to vegetation units: the example of the Festuco-Brometea and Trifolio-Geranietea sanguinei. *Tuexenia* 31: 271–282 + 1 table.

Petřík, P., Černý, T., Boublík, K. (2011): Impact of hoofed game and weather on the vegetation of endangered dry grasslands in the Křivoklátsko Biosphere Reserve (Czech Republic). *Tuexenia* 31: 283–299.

Wieżik, M., Więżiková, A., Svitok, M. (2011): Vegetation structure, ecological stability, and low-disturbance regime of abandoned dry grasslands support specific ant assemblages in Central Slovakia. *Tuexenia* 31: 301–315.

Plant Biosystems 145 (3)

This Special Feature is devoted to *Succession, management and restoration* of dry grasslands and was guest-edited by Monika Janišová (Banská Bystrica, SK), Sán-



dor Bartha (Vacratot, HU), Kathrin Kiehl (Osnabrück, DE), and Jürgen Dengler (Hamburg, DE). It contains nine regular articles plus the editorial and will appear in the August issue of the journal. This is the first EDGG Special Feature in a journal listed in the Web of Science. *Plant Biosystems* is published by the Italian Botanical Society and has an Impact Factor of 0.929.

Janišová, M., Bartha, S., Kiehl, K., Dengler, J. (in press): Advances in the conservation of dry grasslands – Introduction to contributions from the 7th European Dry Grassland Meeting. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.603895.

Sudnik-Wójcikowska, B., Moysiyanenko, I., Zachwatowicz, M., Jabłońska, E. (2011): The value and need for protection of kurgan flora in the anthropogenic landscape of steppe zone in Ukraine. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601335.

Vassilev, K., Pedashenko, H., Nikolov, S. C., Apostolova, I., Dengler, J. (2011): Effect of land abandonment on the vegetation of upland semi-natural grasslands in the Western Balkan Mts., Bulgaria. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601337.

- Hegedúšová, K., Senko, D. (2011): Successional changes of dry grasslands in southwestern Slovakia after 46 years of abandonment. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601605.
- Kaligarič, M., Meister, M., Škornik, S., Šajna, N., Kramberger, B., Bolhár-Nordenkampf, H. R. (2011): Grassland succession is mediated by umbelliferous colonizers showing allelopathic potential. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601338.
- Házi, J., Bartha, S., Szentes, S., Wichmann, B., Penksza, K. (2011): SeminatURAL grassland management by mowing of *Calamagrostis epigejos* in Hungary. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601339.
- Henkin Z, Seligman NG. 2011. The role of management on the rate of succession in restored Mediterranean grassland after fire. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601334.
- Csecserits, A., Czúcz, B., Halassy, M., Kröel-Dulay, G., Rédei, T., Szabó, R., Sztár, K., Török, K. (2011): Regeneration of sandy old-fields in the forest steppe region of Hungary. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601340.
- Deák, B., Valkó, O., Kelemen, A., Török, P., Migléc, T., Ölvedi, T., Lengyel, S., Tóthmérész, B. (2011): Litter and graminoid biomass accumulation suppresses weedy forbs in grassland restoration. *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601336.
- Madrugá-Andreu, C., Plaixats, J., López-i-Gelats, F., Bartolomé, J. (2011): Medium-term success of revegetation methods for high-mountain grassland reclamation in the Montseny *Plant Biosystems* 145. DOI: 10.1080/11263504.2011.601341.

Planned Dry Grassland Special Features

Following a very successful annual congress in Uman', Ukraine, we are now planning the publication of three Special Features on (dry) grasslands in international journals. We are inviting you, i.e. all members of the EDGG, not only the participants from Uman', to use this opportunity to publish your exciting results. Detailed information sheets on all three Special Features will be made available on the EDGG homepage (www.edgg.org).

Special Feature on diversity of/in European grasslands

This Special Feature on biodiversity patterns in all types of grasslands (e.g. wet, mesic, dry, salty, coastal, mountain) will for the first time in the history of EDGG explicitly cover both zoological and botanical papers. It is guest-edited by Jürgen Dengler (Hamburg, DE), Monika Janišová (Banská Bystrica, SK), Péter Török (Debrecen, HU), Michal Wiezik (Zvolen, SK), and Camilla Wellstein (Bayreuth, DE). There is already one zoologist in the team (M. Wiezik), but if we succeed in getting many zoological papers, as we hope, we will likely add a second one. We will propose this Special Feature to *Agriculture, Ecosystems & Environment* (AGEE; impact factor = 2.790) but the production is not guaranteed yet as the AGEE Editor-in-chief will only decide on the basis of the abstracts of the proposed papers. However, we are optimistic that we will be able to gather enough proposals for high-quality papers to meet the standards of this journal so that the Special Feature can be produced as planned.

Under the working title *Diversity patterns in European grasslands under the joint influence of nature and agriculture*, we want to shed light on the mystery why European grasslands, and particularly the dry grasslands, became a global biodiversity hotspot. What is the contribution of abiotic environmental conditions and of agricultural practices? How do historical and actual conditions

interact in shaping the diversity patterns we find today? What is the evolutionary-phylogeographic origin of the faunas and floras of European grasslands? To what extent did humans through their agriculture even stimulate evolution, leading to new grassland specialist species? And finally, given the fact that high nature value grasslands are among the most threatened habitats of the continent, what types of agricultural management are capable of conserving and maintaining grassland biodiversity?

The collection of contributions in this Special Feature shall address the biodiversity of European grasslands comprehensively, including its underlying causes and the potential consequences. We invite manuscripts addressing biodiversity patterns of grassland flora and fauna of any spatial or temporal scale. While we welcome well-designed case studies on specific aspects, comparative studies across different taxa, different spatial scales or aspects of biodiversity, and among various regions would be particularly suitable. Papers addressing aspects of biodiversity conservation in high nature value grasslands are also welcome. In this Special Feature, we apply the term "grasslands" in a wide sense, including both natural climax communities (steppes, alpine grasslands, coastal grasslands) and grasslands of zoo-anthropogeneous origin, and ranging from dry through mesic to wet.

If you are interested in contributing to this Special Feature, please submit your abstract in AGEE style electronically to dengler@botanik.uni-hamburg.de by **15 October 2011**. Feel free to discuss the suitability of your topic with one of the guest editors prior to submission. The production of the Special Feature depends on the number and quality of abstracts received by this deadline, and only papers that are invited based on their abstracts can be submitted to the Special Feature.

Special Feature on classification of European grasslands

The second Special Feature will be on large-scale classification of all types of grasslands (including methodological studies using grassland data). It is a joint production of EDGG and EVS (European Vegetation Survey) and will be guest-edited by Jürgen Dengler (Hamburg, DE), Wolfgang Willner (Vienna, AT) & Milan Chytrý (Brno, CZ). It shall appear as a Virtual Special Feature in *Applied Vegetation Science* (AVS; IF = 1.802), meaning that the accepted papers will be published independently but under the banner of the Special Feature in regular journal issues over a period of approximately two years. This should leave enough time to prepare comprehensive classification papers. The topic has already been approved generally by the AVS Editors-in-Chief, but they will make their final decision when we show them that there are enough high-quality abstracts available.

Under the preliminary title *Towards a consistent classification of European grasslands*, we aim at making a major step in this direction. Therefore, we invite contributions that provide comprehensive large-scale classifications of major grassland types, that develop (and test) methodological tools to overcome the problems that until now limited the development of such consistent supranational treatments, or a combination of both. The focus is on the widespread grassland classes *Molinio-Arrhenatheretea*, *Festuco-Brometea*, and *Koelerio-Corynephoretea*, but we are also open to studies of Mediterranean grasslands (e.g. *Thero-Brachypodietea*), alpine grasslands (e.g. *Elyno-Seslerietea*, *Juncetea trifidi*), coastal grasslands (*Ammophiletea arenariae*, *Juncetea maritimi*), grassland-woodland transitions (*Trifolio-Geranietea*), and even of extremely human-influenced grasslands such as the *Polygono-Poetea*.

For contributions to this Special Feature, normally the compilation of comprehensive supranational datasets will be necessary, and the guest editors hope that the prospect of high-rank publication in AVS will stimulate joint activities within EDGG to establish supranational dry grassland databases as a first step towards a joint Europe-wide database. The guest editors will try to bring together owners/hosts of different databases among each other and with colleagues who are capable of applying state-of-the-art techniques for large-scale classifications and coordinate any activities to join separate databases and to develop consistent supra-national species lists for this purpose.

If you are interested in contributing to this Virtual Special Feature, please submit your preliminary abstract in AVS style (Results and Conclusions not necessarily needed) electronically to dengler@botanik.uni-hamburg.de by **31 October 2011**. Feel free to discuss the suitability of your topic with one of the guest editors prior to submission. The production of the Special Feature depends on the number and quality of abstracts received by this first deadline and only papers that are invited based on their abstracts can be submitted to the Special Feature. If the Special Feature is approved by the Editors-in-Chief, further Abstracts can be submitted for

evaluation until approximately **June 2012**.

Those who want are interested in collaborating in these critical but time-consuming steps (i.e. establishing a consistent European species list, development of matches between national species lists, joining of separate huge databases, application of state-of-the-art techniques for large-scale classifications) should seek the contact to one of the guest editors. For example, they could make a major contribution by spending an internship on these important tasks in one of their labs.

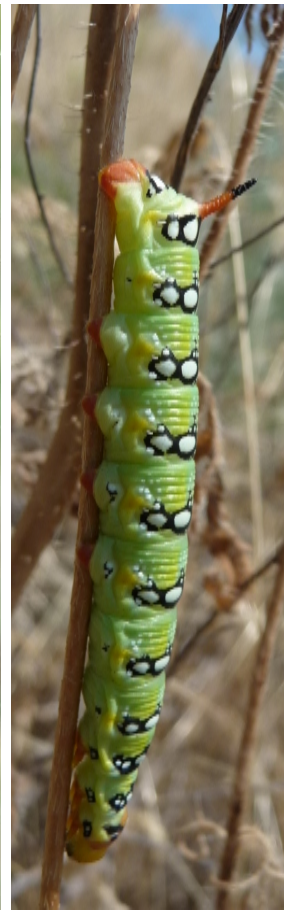
Dry Grassland Special Feature in *Tuexenia* 32

Our “traditional” annual **Dry Grassland Special Feature in *Tuexenia*** (indexed in SCOPUS, applied to be indexed in the Web of Science) will this time be guest-edited by Thomas Becker (Göttingen, DE), Dobromil Galvanek (Zvolen, SK), and Jürgen Dengler (Hamburg, DE). There are still several papers from the last European Dry Grassland Meetings “in the pipeline”, but we also welcome new contributions. In addition to studies on vegetation, flora, ecology and conservation of dry grasslands in Central Europe (here defined as DE, CH, AT, NL, BE, LU, PL, CZ, SK, HU, SI), **well-conducted phytosociological/syntaxonomical studies** from the rest of Europe (and even beyond) are eligible. Publishing in *Tuexenia* comes with two great benefits: (i) it is one of the few journals that allow and even encourage printed supplements with large vegetation tables; (ii) *Tuexenia* appears both in print format and open-access online, which increases the visibility and thus the citation rates of your work.

While you could submit your full paper directly to dengler@botanik.uni-hamburg.de, we recommend that prior to full-paper submission you send us an abstract to assess the eligibility of your topic and possibly give you some hints how to improve the paper before writing. To ensure inclusion in *Tuexenia* 32, full-paper submissions should be made electronically as soon as possible. While you can submit at any time, it is very unlikely for contributions submitted later than **October 2011** that they will be ready for productions of volume 32.2012 (but they then automatically will be considered for volume 33.2013).



Inula oculus-christi. Photo: P. Chmielewski.



Demonstration of Saga pedo and the beauty of the animal life. Photo: M. Janišová.



Przewalsky horses in the Biosphere Reserve "Askania-Nova", Photo: M. Janišová, K. Hegedúšová.



Excursion in the National Natural Park "Oleshkivsky Sands". Photo: A. Kuzemko, K. Hegedüšová.

Smolenice Grassland Declaration

- the past, the present, the future

This text is based on the presentation given by Michael Vrahnakis during the EDGG General Assembly of 13th June 2011 in the context of 8th EDGG Meeting in Uman', Ukraine. In this text, the basic policy characteristics of the SGD are given, other Grassland Declarations are briefly discussed, and PEBLDS Actions related to Grassland Ecosystems are epitomized. Finally, some possible future steps are presented, and an open call to create a Special Policy Committee within EDGG is presented.

I. The science-based policy character of the Smolenice Grassland Declaration

The Smolenice Grassland Declaration (SGD) is one of the most prominent outcomes of the 7th EDGG Meeting held in Smolenice (Slovak Republic) from 27 May to 1 June 2010 (see details in *EDGG Bulletin* No 7). It was envisaged and originally written by a group of worldwide famous specialists who placed their "grassland" soul, their uncontested knowledge and experience and their scientific sentimentality for this rather neglected natural resource we all love, i.e. grasslands. This is the reason why, after its publication through the EDGG media, it recognized global acceptance signed by many people from many countries.

The SGD belongs to the *open* Declarations since it supports *the act of notification in a public forum by formal documentation* and must be seen rather as an attempt to promote the protection and conservation of grasslands into the European policy arena. It is a science-based policy text, since i) it is based on scientific evidences and experiences, and ii) it holds all the typical characteristics of a political declaration. The political character of the SGD text is evident, since it clearly declares

A) what it cares about, in terms of (i) identity (... *grassland ecosystems, both natural and those made or managed by man...*), and (ii) volume/geography (...*spanning the coasts and high mountain regions...,from tundra in the North ... Ural Mountains in the East*);

B) resource (grassland) importance, in terms of (i) goods (... *foods/forage ...*) and (ii) services (... *climate regulation ...*) all placed into a (iii) human-oriented context (... *human health, prosperity ...*);

C) what is the current condition, (i) ignorance of institutional commitments (*In spite of European states' commitment to the Convention on Biological Diversity...*), (ii) lack of a framework for protection (... *while many European countries have ... legislation and strategies ... grasslands lack such a framework...*), (iii) threats to the resource/grasslands (... *area covered by grasslands ... decline dramatically... due to conversion to cropland or abandonment; impacted by changes of management ... by eutrophication, causing extinction and the high global extinction risk of many species*); and

D) what actions are needed, (*We therefore call for a strong and comprehensive Convention on Grassland Conservation in Europe within the framework of the Pan-European Landscape and Biodiversity Strategy ...*)

But the most important political characteristic of the SGD is its signatories and the diversity of their origins. At the moment, it is signed by more than 300 grassland specialists, other scientists, and simple grassland fans from 38 countries. This element generates the *pressing force* of the SGD which is addressed to the society, and more apparently to the decision makers who harbor mostly into EC institutional structures and political schemes.



Strategy aims and objectives:

Aims

1. Threats to Europe's biological and landscape diversity are reduced substantially.
2. Resilience of Europe's biological and landscape diversity is increased.
3. Ecological coherence of Europe as a whole is strengthened.
4. Full public involvement in conservation of biological and landscape diversity is assured.

Objectives

1. Conservation, enhancement and restoration of key ecosystems, habitats, species and features of the landscape through the creation and effective management of the Pan-European Ecological Network.
2. Sustainable management and use of the positive potential of Europe's biological and landscape diversity through making optimum use of the social and economic opportunities on a national and regional level.
3. Integration of biological and landscape diversity conservation and sustainable use objectives into all sectors managing or affecting such diversity.
4. Improved information on and awareness of biological and landscape diversity issues, and increased public participation in actions to conserve and enhance such diversity.
5. Improved understanding of the state of Europe's biological and landscape diversity and the processes that render them sustainable.
6. Assurance of adequate financial means to implement the Strategy.

Figure 1. Aims and objectives of the Pan-European Biological and Landscape Diversity Strategy (PEBLDS).

II. Grassland Declarations

The SGD is not the unique existed Declaration. To my knowledge, there are Grassland Declarations released in national or international level. Example of national concern is the **South African “Grasslands Declaration”** of Intent and Cooperation concerning the implementation of the National Grasslands Biodiversity Programme. It is the case of a *successful* Declaration, since such Biodiversity Programme has agreed, signed, and implemented for South African grasslands since July 2010. Another example, of international concern, is the **Hohhot “Temperate Grasslands Declaration”** which it was generated into the framework of the XXI International Grasslands Congress/VIII International Rangeland Congress, June 2008, Hohhot, Inner Mongolia, China. There it was clearly stated that “...*temperate indigenous grasslands are critically endangered and urgent action is required to protect and maintain the services they provide to sustain human life...*”, which exhibits close affinity with the SGD. A follow up of the Hohhot Declaration is the **Bariloche “Temperate Grasslands Declaration”** which it was created during the times of the Temperate Grassland Conservation Initiative Symposium, February 2010, Bariloche, Argentina. The Declaration encouraged the Convention on Biological Diversity Conference of the Parties of the 10th meeting in Nagoya, Japan, October 2010, to adopt specific measures to protect temperate grasslands within the revised and updated Strategic Plan for the Convention, including new targets for temperate grasslands conservation for the post-2010 period. It is clear from the above that all Declarations aim at conservation and protection actions, either *via* the implementation of National Programmes, or by the State’s adoption of measures within a Convention framework.

III. The Pan-European Biological and Landscape Diversity Strategy (PEBLDS)

It is already mentioned that the major goal of the SGD is to build a strong and comprehensive Convention on Grassland Conservation in Europe within the framework of the Pan-European Biological and Landscape Diversity Strategy (PEBLDS). The Strategy is numbered as Publication No. 74 in the section of Nature and Environment of the Council of Europe Press (1996). The text was drawn up in collaboration with the European Centre for Nature Conservation (Tilburg, The Netherlands), submitted by the Council of Europe at the Ministerial Conference "Environment for Europe" (Sofia, Bulgaria, 23-25 October 1995) and approved by the Ministers of the Environment of the 55 states present at the Conference. Ministers recognized “the uniqueness of landscapes, ecosystems and species, which include, *inter alia*, economic, cultural and inherent values”, and “call for a Pan-European approach to the conservation and sustainable use of shared natural resources”, and endorsed “as a framework for the conservation of biological and landscape diversity”. One of the main objectives of the PEBLDS is the conservation, enhancement and restoration of key ecosystems (Figure 1). These ecosystems include (a) Coastal and marine ecosystems, (b) River ecosystems and related wetlands, (c) Inland wetland ecosystems, (d) Forest ecosystems, (e) Mountain ecosystems, and (f) Grassland ecosystems. The PEBLDS released a Strategic Action Plan (1996-2000) where Action Themes are described. The Themes include (i) Pan-European action to set up the Strategy process, (ii) Establishing the Pan-European Ecological Network, (iii) Integration of biological and landscape diversity considerations into sectors, (iv) Raising awareness and support with policy makers and the public, (v) Conservation of key ecosystems, and (vi) Action for threatened species.

More specifically, Actions for grassland ecosystems include:

A. Actions focus on Pan-European objectives:

Encourage natural and semi-natural grassland action plans at a Pan-European level.

Develop grassland agricultural management schemes supported by concrete measures at the local, national and international level.

Give special attention to monitoring data gathering policy requirements of grassland and agricultural zones.

B. Actions focus on regions:

Prioritize conservation of grasslands of high biological and landscape diversity in different types of grassland habitats, focusing on Alpine, Atlantic, Baltic, Iberian and eastern Mediterranean regions, and central and eastern Europe.

Request the development of an outline EU vision and action plan for semi-natural grasslands, integrating regional development, agriculture, environmental and social policies.

Develop concrete action to apply successful mechanisms for maintaining extensively managed grasslands, using ESA-type tax incentives and land stewardship in the wider landscape.

Consider methodologies for the application of cross-compliance in the framework of the CAP reform to support biological and landscape diversity values.

Develop public and private participation schemes in CEE privatization programmes of agricultural areas.

IV. Some future steps

It is clear from the above that the SGD is perfectly fitted under an umbrella-like policy initiative (PEBLDS), which is used in a higher level towards conserving, enhancing and restoring key ecosystems, like the Grassland one. In addition, to achieve the ultimate target of the SGD, i.e. creation and State's adoption of a Convention of Grassland Convention in Europe, it is important to

STEP 1: Increase the influence of the SGD. This is achieved by

a) communication of the SGD in other relevant international initiatives (e.g. Temperate Grasslands Conservation Initiative), **international organizations** (e.g. European Grassland Federation, WWF, IAVS), **national organizations** (e.g. National Grassland/Rangeland Societies), and

b) focusing in the promotion of the SGD *per se*. The release of other relevant Declarations, which focus in conserving specific (fragile) grassland types, unambiguously decreases the power of the SGD. In addition the wide geographic scope of the SGD ensures the inclusion of all European (at least) grasslands.

STEP 2: Built a strong and comprehensive Convention on Grassland Conservation in Europe. This is the ultimate policy goal of the SGD. Several issues may be related to this effort, for example, who will supervise the effort? which text will serve as prototype?, and so on.

STEP 3: Promote the Convention into EC organs. After creation of the Convention it is necessary to promote it into the EC organs and mechanisms, possibly using the communication pathways of the SGD supporting organizations. The EC States' adoption of the Convention is anticipated.

STEP 4: Put the Convention into action. The final step is dedicated to the incorporation of Convention' provisions into national legislation and the formation of National Grasslands Biodiversity Programmes (like the South African paradigm).

To follow these steps, or/and add, reform, re-orient them, the EDGG calls for the establishment of the Special Policy Committee. Potential members of this Committee are anyone of you who has interests/abilities/qualifications/experiences on the fields of Policy. Also, anyone of you, who simply wants to work towards continuation and promotion of the SGD. If you want to participate into this Committee, please send a message of interest to Michael Vrahnakis (mvrahnak@teilar.gr).

Michael Vrahnakis, Karditsa, Greece





Excursion in the Biosphere Reserve "Askania-Nova". Photo: N. Bagročkova., I Turisová.

Forthcoming events



Stachys angustifolia in the South Buh River valley. Photo: I. Turisová.

3rd SEEDGG research expedition

14–24 August 2011, Bulgaria

Contacts: Iva Apostolova: iva@bio.bas.bg

Details: see this Bulletin issue, pp. 10–12

8th World Congress of International Association for Landscape Ecology

18–23 August 2011, Beijing, China

Details: www.iale2011.org/index.asp

4th World Conference on Ecological Restoration

21–25 August 2011, Merida, Mexico

Details: www.ser2011.org/en/

41st Annual Conference of the Ecological Society of Germany, Austria and Switzerland (GfÖ)

Topic: "Ecological functions, patterns, processes"

5–9 September 2011, Oldenburg, Germany

Details: <http://www.gfoe-2011.de/>

Annual Meeting of the British Ecological Society

12–14 September 2011, Sheffield, UK

10th Meeting Vegetation Databases

Topic: Vegetation databases & spatial analysis

19–21 September 2011, Freising, Germany

Details: <http://www.hswt.de/fh/fakultaet/wf/professoren/ewald/forschung/biodiversitaetsinformatik/ag-vegetationsdatenbanken/10thmeeting.html>

Deadline for poster submission: 22 July 2011

Deadline for registration: 2 September 2011

SALVERE conference „Using species rich semi-natural grassland to obtain seed for the restoration of degraded areas“

21–22 September 2011, Legnaro, Padova, Italy

Contact: claudia.dalbuono@unipd.it

12th Congress of European Ecological Federation

25–29 September 2011, Ávila, Spain

Details: www.eefcongress2011.eu/

International Congress on Conservation Biology

29 Nov.–2 December 2011, Christchurch, New Zealand

21st Workshop of the European Vegetation Survey (EVS)

24–27 May 2012, Vienna, Austria

Topics: Vegetation classification; biogeographical patterns; vegetation and global change

55th Symposium of the International Association for Vegetation Science (IAVS)

23–28 July 2012, Mokpo City, South Korea Details: [http://](http://www.iavs.org/uploads/IAVS-2012.pdf)

www.iavs.org/uploads/IAVS-2012.pdf



Excursion in the in the National Natural Park “Buz’ky Gard”. Photo: P. Chmielewski, A. Kuzemko.



Dianthus hypanicus and Silene hypanica in the National Natural Park “Buz’ky Gard”. Photo: A. Kuzemko.



Steppe community with Cotinus coggygria in the valley of South Buh River. Photo: P. Chmielewski.



Final discussion after the third excursion. Photo A. Kuzemko.

“Dry grassland diversity in Poland” conference



The Institute of Biology (Department of Geobotany) of the Maria Curie-Skłodowska University in Lublin, the Naturalists' Club and Lublin division of the Polish Botanical Society held a conference in Lublin on 2-4 June. The conference was attended by over 50 participants (some of them EDGG members) and its main goal was to take a closer look at the diversity of dry grasslands in Poland. The field trips took place after the plenary discussion day and during the excursions, dry grasslands of the Wyżyna Lubelska highland and the Małopolski Przełom Wisły gap were explored. During the free time, the participants had the opportunity to visit the old town of Zamość and the spa park of Nałęczów.

*Piotr Chmielewski, The Naturalists' Club,
Świebodzin, Poland, pchmielewski4@wp.pl*





*Plenary sessions (above), Glinińska nature reserve (in the middle), xerothermic vegetation of the Kąty site and *Linum hirsutum* in the Skałpa Dobrska reserve (down). Photos: P. Chmielewski.*



The DEHESA: a singular ecosystem

"I here call to the idea of a new agriculture, a tree-crop agriculture, which seems to hold the promise of easily doubling our productive area and making revolutions in man's relation to his environment..."

Description of the dehesa: concept and area

The *dehesa*, as we know it today is the result of an evolutionary process based on the use of different resources that the ecosystem provides by humans. The concept of *dehesa* seems to arise in the Roman period, inherited by the Visigoths who called it "*Pratum defesum*" because large areas were used for livestock grazing.

The *dehesa* ecosystem is composed of different layers, including arboreal, shrub, herbaceous and animal (wild and domestic) as well as agriculture. In the tree layer, mainly trees of the genus *Quercus* (*Quercus suber* and *Quercus ilex* spp. *Ballota*) dominate, with limited accompanying species from other genera. The shrub layer in a well managed *dehesa*, as a rule, has a very low presence (except shrub oaks to provide new trees), but among others there can be found *Cistus ladanifer*, *Cistus albidus*, *Cistus salvifolius*, *Lavandula stoechas*, *Rosmarinus officinalis* or *Quercus coccifera*. As for the herbaceous layer, there are many species that inhabit the *dehesa*. These are mostly annual and classified into three groups: grasses (*Bromus mollis*, *Poa annua*, *Lolium rigidum*, *L. temulentum*, etc.), legumes (*Biserrula pelecinus*, *Medicago polymorpha*, *Ornithopus compressus*, *Trifolium subterraneum*, *T. glomeratum*, etc.) and plants belonging to other families (*Erodium ciconium*, *Anthemis arvensis*, *Capsella bursa-pastoris*, etc.). One of the largest natural values of the *dehesa* is its extremely high plant species richness: more than 180 species per 1000m², with approximately 30 species in 20 x 20 cm².

Livestock in the *dehesa* is seen from two different points of view. On one hand there is the use of well-managed pastures where the shrub layer has disappeared for large and small game (such as *Alectoris rufa*, *Lepus europaeus* etc.), and to a lesser extent hunting animals that survive in *dehesas* with more trees, such as *Sus scrofa* and *Cervus elaphus*. On the other hand there are extensively

managed domestic livestock (meat breeds), with a greater use of indigenous breeds that are better adapted to the difficult *dehesa* conditions. These breeds include the Retinta or Avileña in cattle, Merino sheep and in the Iberian pig.

To characterize the environment of the *dehesa*, it is inevitable to talk about climate and soil. With regard to the climate, the *dehesa* is included in the semiarid Mediterranean climate, characterized by a highly irregular rainfall and temperatures throughout the year and between years. In the whole *dehesa* the annual rainfall is between 450 and 850 mm on average, with a dry period of 3 to 5 months and cold winters, which marks the herbaceous layer winter development and influences the formation of acorns; the average temperatures of the daily minimum of the coldest month of the year is between 2 and 5 °C, in contrast to temperatures above 30 °C in the summer months. The *dehesa* soils are characteristically shallow (sometimes bedrock outcrops), low fertility and irregular orography, settling on shale source rocks (62%) and granite (32%) mostly.

Erosion risk, mainly hydric, in the *dehesa* soils is strongly affected by the vegetation cover (percentage of soil covered by vegetation) in the rainy season (autumn-winter). Thus, soil covered at least to 75 % will significantly reduce its erosion risk. An effective form of human management that could help the conservation of this ecosystem is therefore increasing herbaceous cover, reforestation with native species and properly managing the bush layer in order to improve fire protection.

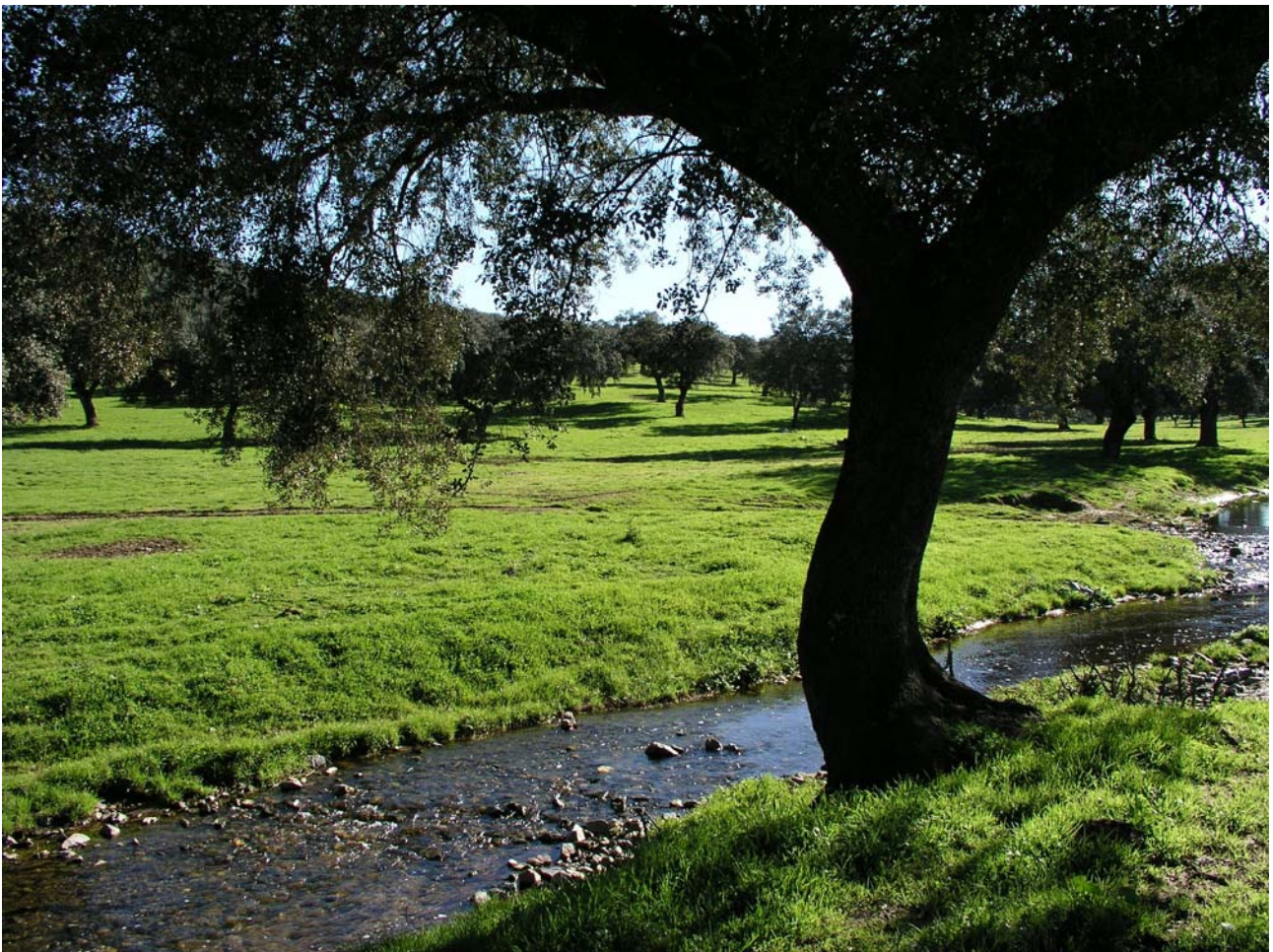
The *dehesa* extends, patchily, throughout the SW Iberian Peninsula, existing in Extremadura, Western Andalusia Portuguese Alentejo, SW Castilla La Mancha and Castilla y León south. Although the surface area is difficult to quantify, an estimated 2.8 million hectares exist, mainly in Extremadura (1.3 million hectares).

Table 1. Average of the production in the *dehesa*.

Vegetation	Biomass (kg Dry Matter/ha)	% Crude Protein	Organic Matter Digestibility (%)
Herbaceous (pasture)	1,400 – 2,800	12.8	56
Tree (acorns)	200 – 400	5.2	70
Leaves and small branches	100 – 200	7	40
Total	1,700 – 3,400		



Iberian pigs in montanera and typical dehesa in Extremadura in autumn



Problems and solutions

Nowadays big *dehesa* farms are being abandoned (generally they are large estates “*latifundios*” between 300 and 600 hectares according to Linares, 2007) due to its low profitability and the current economic instability. So, without an appropriate human management (essential component in *dehesa* formation and conservation, as said before) the survival of this ecosystem is threatened.

One of the big problems that justify the low profitability of these *dehesa* farms is the strong seasonality in pastures, maybe the most variable *dehesa* component, which limits the livestock density and therefore the competitiveness of the farm. A high [livestock density](#) would damage the *dehesa* and cause important changes in the botanic composition, decreasing the tree layer, essential in the *dehesa* due to the microclimate it creates, the transport of nutrients with the leaves and the use of the tree as a meeting point for animals. A low livestock density would lead to the abandonment of these farms and the disappearance of the *dehesa*.

The seasonality of the pastures is determined by the erratic climatic conditions, and follows the distribution curve showed in figure 1. In this figure is possible to observe how in spring is 70 % of the annual herbaceous productivity occurs, with a minimum of production in winter and summer (Olea and San Miguel-Ayanz, 2006).

This strong variability in the food distribution can be alleviated with some improvements in the herbaceous layer, such as the introduction in the meadow of some improver species (mainly leguminous) or the fertilization of the natural pasture in the *dehesa* (mainly phosphoric), moreover it is possible to sow forage crops in some areas in the *dehesa* (these areas would be the ones with the best soil conditions, according to Ceballos and Schnabel, 1998); in that way these forage crops could supplement the production deficit of the pastures in winter, grazing the crop in early stages, and in summer, supplying the livestock as hay or silage, once the forage had been conserved in maturity stage.

Nevertheless, as in every ecosystem, there are a lot of components that must be taken into account in order to achieve appropriate conservation. In this sense, secondary production in the *dehesa* should be considered that could be used to contribute to the improvement of the profitability of the *dehesa* farms.

Being a highly biodiverse ecosystem, it is possible to find in the *dehesa* products as diverse as wood, charcoal, fungi (*Tuber* sp., *Amanita caesarea*, *Boletus edulis*, ect.), honey, pollen, wild asparagus (*Asparagus acutifolius*), hunting and the growing interest in rural tourism, which would perfectly suit the *dehesa*.

That is to say that, even focused on the domestic animal production (meat, milk for cheese or fleece production), there are some different components for the livestock food apart from grass as the tree or bushes little branch or the acorn production (Table 1), that could contribute to the animal feeding. Moreover there is a specific case, the *montanera*, in which Iberian pigs are feeding in the late fattening phase (autumn-winter) with grass (70 %) and acorns (30 %); this kind of feed gives carcass and special parts (hams, shoulder blades and loins) exclusive characteristics and high quality.

Another big problem in the *dehesa* is the tree regeneration, threatened with the incipient increase of the livestock density that hinders a natural tree regeneration, either eating young trees or eating the acorn before its germination, and all these things make difficult the reforestation proposed by man.

The increasing worry in the society caused by the progressive disappearance of the tree layer in the *dehesa* is based on the low tree recovery rate and the long growing cycle (more than 800 years) of the main tree species in the *dehesa* (holm and cork oaks), that makes difficult the management and continuous protection of these specimens.



Green acorns in an holm oak,

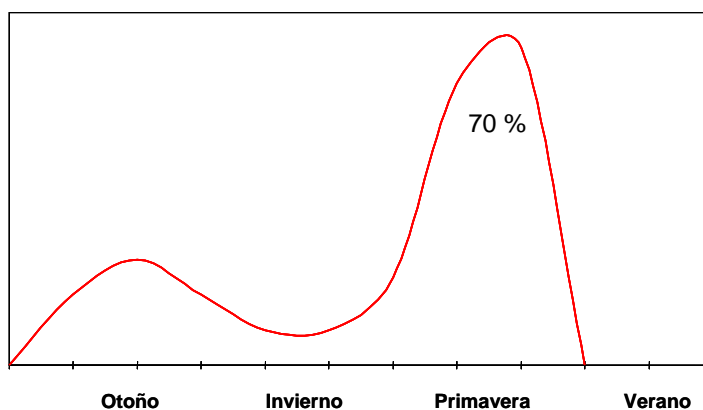


Figure 1. Annual distribution of the herbaceous biomass in the dehesa

Why must we keep the dehesa?

Based on what was said above, we will now summarize the goods and services provided by the dehesa, in order to raise awareness in society of the need to preserve this unique ecosystem.

Firstly, it is necessary to stress the high biodiversity that the dehesa supports, and not only in terms of vegetation diversity (tree, shrubs and grasses), but also in the number of animals - both domestic (cattle, sheep and pig, mainly) and wild - which find in the dehesa their shelter. The wide dehesa stretches considered as Biosphere Reserves by UNESCO (Monfragüe, Sierra Morena, Sierra de las Nieves, Doñana...) are home of numerous endangered species, such as the lynx (*Lynx pardinus*), the imperial eagle (*Aquila adalberti*), the black vulture (*Aegypius monachus*), and the mongoose (*Herpestes ichneumon*), etc.

In addition, the dehesa complexity must be preserved, maximizing the sustainable uses of every resource that the ecosystem offers, since to be considered as an ecosystem focused on long term stability where it is essential that relationship of every component reaches a sustainable equilibrium. That is to say, as the livestock need the grass to eat, so does the grass need the livestock as seed dispersers, as the tree needs the bee that pollinates it, so does the bee need the tree as habitat, and as the dehesa needs the man who manages it, so does the man need the dehesa.

In this late relationship man-dehesa, special emphasis must be placed on the recent scientific interest of the dehesa as CO₂ sink. Carbon sequestration is nowadays an issue of great interest with the increase in greenhouse gases. Numerous recent studies focus their interest on the carbon sequestration that rural areas provide, to reduce the greenhouse effect. Jandl et al. (2007) suggest in their studies that forest or wooded areas have higher atmospheric carbon sequestration capacity, above arable land areas. Moreover, according to Ramachandran et al. (2010), the ecosystems with higher the diversity of trees, shrubs and grasses also have higher carbon sequestration capacity. An appropriate use and management of these dehesa areas considerably increases its carbon sequestration capacity, improving air quality in the area and so the quality of life.

Finally, the dehesa is an ecosystem of great beauty, which is associated with a vocational character of the people who live near her, marking the traditions and customs of those around her who care for and admire her.

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Merina sheep in the dehesa.



Trifolium subterraneum ssp. subterraneum in a dehesa in Extremadura

Forum

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

Annali di Botanica is online!

The journal *Annali di Botanica – Coenology and Plant Ecology* is now freely available online at: <http://ojs.uniroma1.it/index.php/Annalidibotanica/index> starting from year 1996. This is particularly valuable as this journal contains many important contributions from the meetings of the European Vegetation Survey (EVS).

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Chamaecytisus skrobiszewskii (*Chamaecytisus graniticus*)
Photo: P. Chmielewski.

Recent publications of our members

Vegetation databases and ecoinformatics

Dengler, J., Ewald, J., Kühn, I., Peet, R. K. (2011): Ecoinformatics and global change – an overdue liason. *Journal of Vegetation* 22: 577–581.

Dengler, J., Jansen, F., Glöckler, F., Peet, R. K., De Cáceres, M., Chytrý, M., Ewald, J., Oldeland, J., Finckh, M., Lopez-Gonzalez, G., 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. *Journal of Vegetation Science* 22: 582–597.

Jansen, F., **Dengler, J.**, Glöckler, F., Chytrý, M., Ewald, J., Oldeland, J., Schaminée, J. H. J. (2011): Die mitteleuropäischen Datenbanken im Global Index of Vegetation-Plot Databases (GIVD). *Tuexenia* 31: 351–367.

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Orobanche caesia. Photo: P. Chmielewski.



Agropyron dasyanthum from IUCN Red List
in the National Natural Park "Oleshkivsky
Sands". Photo: A. Kuzemko.

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