



IAVS

BULLETIN 2021/2

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Eddy van der Maarel during the field trip associated with the Working Group for Theoretical Vegetation Science symposium at Uppsala in 1985

Editorial

by Martin Diekmann & Susan Wiser



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Eddy van der Maarel passed away on 4 April 2021. With his death, the International Association for Vegetation Science lost one of its longest standing members and a person who has shaped modern vegetation science and has served and fostered our society in so many ways. Many of the IAVS officers, editors of our journals and members have lost a close colleague and friend, some of us considering him as an academic father.

Eddy was born in 1934 in Amsterdam and spent the first part of his academic career at different universities in the Netherlands. In 1981, he moved to the famous *Växtbiologiska institutionen* (Institute of Plant Biology) in Uppsala, Sweden, and assumed the oldest and most

prestigious chair in our field. After his retirement he moved back to his home country.

Eddy's favourite study objects as a plant ecologist were dune ecosystems and alvar grasslands. Already early in his scientific career he showed a strong interest in theoretical vegetation science and computational data processing, scientific fields for which he (co-)founded innovative and ground-breaking IAVS working groups. In his engagement for the association he served as member of the Advisory Council and Vice-President for many years. Eddy became globally renowned as a long-time Editor-in-Chief of *Vegetatio* and as one of the founders of the *Journal of Vegetation Science* and later *Applied Vegetation Science*. His outstanding work and services were recognized by memberships of the Royal Netherlands Academy of Arts and Sciences and the Royal Swedish Academy of Sciences, as well as by honorary membership of the IAVS.

Eddy's professional life, however, went well beyond these formal achievements. We, as his colleagues and pupils, also remember his tireless efforts to bring together people from different countries and cultures, to enable students from low-income countries to come to his institute in Sweden and to the annual symposia of IAVS, and to make the society journals accessible to as many libraries and personal subscribers as possible. He was the initiator of the Global Fund of IAVS, which lives on in the activities of our Global Sponsorship Committee. His vision of a global community of, and friendship between, vegetation ecologists was also reflected in the many field campaigns, for example in the Great Alvar on Öland that united researchers and students from many different countries, and in the many social evenings in his home in Uppsala where he played the piano and his wife Marijke and his children offered an unforgettable hospitality.

The IAVS wishes to express its deep sorrow about the death of Eddy van der Maarel and will honour him in the next issue of the IAVS Bulletin with a comprehensive obituary.

63rd IAVS Symposium

September 20-23, 2021

The virtual event, organized by IAVS



Registration and abstract submission are now open! Please visit <https://na.eventscloud.com/iavs2021> to register for the Symposium and to submit your abstract before the deadline listed below. Unfortunately, at this moment, we cannot process the membership renewal and registration payment. Therefore, we suggest that you pay the registration fee after obtaining the decision letter of whether your abstract has been accepted for the Symposium.

Important dates and deadlines

- Abstract submission deadline: **20 June**
- IAVS attendance grant applications deadline: **20 June**
- Decision letters on abstracts: **18 July** (at latest)
- IAVS attendance grant decision announced: **18 July** (at latest)
- Final date for payment of the registration fee: **15 August**
- Late-breaking registrations with immediate payment will be possible until the very beginning of the Symposium

Plenary speakers (confirmed)

- Michelle Greve (University of Pretoria, South Africa)
- Jitka Klimešová (Botanical Institute, Třeboň, Czech Republic)
- Mahesh Sankaran (National Center of Biological Science, India)

Special sessions (preliminary list)

- Special Session on river vegetation, the challenges of management and conservation and their values and ecosystem services (Francisca Aguiar & Rui Rivaes)
- Community ecology belowground (Tomáš Herben, Jitka Klimešová et al.)
- Big Data and Big Classifications – using vegetation databases for large-scale, plot-based classifications and future challenges (IAVS Vegetation

Classification Working Group, Chair Scott Franklin)

Workshops (preliminary list)

- Photographic Vegetation Databases – assessing types, research and teaching use, and a potential inventory (IAVS Vegetation Classification Working Group, chaired by Scott Franklin)
- CWM approach in functional trait ecology (R workshop; organized by David Zelený)

Note: we are still open to considering further suggestions for Special Sessions or Workshops organized during the Symposium. If you would like to propose one, please contact the Symposium organizers at iavs2021@mci-group.com. For details about the structure of Sessions/Workshops and the required format of the proposal, please check the information in the [First Circular](#).

Format of the Symposium

The meeting will be held entirely online, using a dedicated online conference platform. The Symposium will include both live and on-demand events. During each of the four main conference days, we will have three live events: a plenary talk, an organized Special Session and a workshop. We will also have a number of contributed oral talks, posters with an option for lightning talks, and (a new feature) also virtual excursions. These contributions will be pre-recorded and offered on-demand during the main Symposium days and will remain accessible for the following month.

The Symposium will also include traditional activities. We will organize Young Scientists' Awards for excellent

oral or poster presentations. During the final day of the Symposium, we will host a General Assembly, which will be live and open to all symposium participants, with announcements of Award winners and plans for future symposia.

Recording of the oral talks and lightning talks (accompanying poster presentation) will be done by the organizing hosts in a week or two before the Symposium. You will be offered an online appointment with the person responsible for the recording, who will also guide you through the whole process. There is nothing to worry about – we hired a professional company, hoping this will guarantee a smooth and pleasant presentation experience.

Contribution formats

We offer the following four types of contributions:

- oral presentation (15 minutes, pre-recorded)
- poster presentation (pdf format) with lightning talk (2 minutes, pre-recorded)
- poster presentation without lightning talk (posters delivered in pdf format)
- virtual excursions (short pre-recorded video introducing vegetation of given region; details of this format will be provided soon)

Discussions during the Symposium

The possibility to discuss scientific progress or simply to chat with other participants is a crucial part of our meeting. Although we will not be able to meet in person, there will be online mechanisms to interact. During the live events, participants will be able to ask questions by chat, and the meeting host will interpret them to the speaker. In on-demand talks and poster presentations, participants will be able to post their question in the chat, and presenters will be encouraged to stop by at least once each day to answer them. There will also be several additional virtual meetings organized by Working Groups or Regional Sections to allow for interaction. We also suggest that each participant provides contact information (email, Twitter, website), allowing others to contact them for further discussion.

Registration fees

	Member Registration Fee	Non-Member Registration Fee
Regular Registration	€ 150	€ 225
Student*	€ 45	€ 70
Low-income countries**	€ 45	€ 70

***Student:** Defined as an undergraduate or graduate student. Evidence of enrollment must be provided.

****Low-income countries:** GDP per capita (PPP) less than \$10,000, based on the world factbook. [Click here](#) for the list.

Due to low IAVS membership rates, it is always less expensive to first register as IAVS Member, and then register for the Symposium. [Click here](#) for more information on the IAVS membership rates.

Financial support (registration grants)

As is our tradition, IAVS has allocated substantial funding to support the participation of IAVS members in financial need through our Global Sponsorship Committee. This support will cover all or a part of the registration fee for eligible students and researchers. For further details, please visit the registration website.

Local Organizing Committee

- Susan Wiser (IAVS President)
- Javier Loidi (Chair of the IAVS Meetings Committee)
- Martin Diekmann (past IAVS President, a current member of the IAVS Awards Committee)
- David Zelený (IAVS Secretary)

Scientific Committee

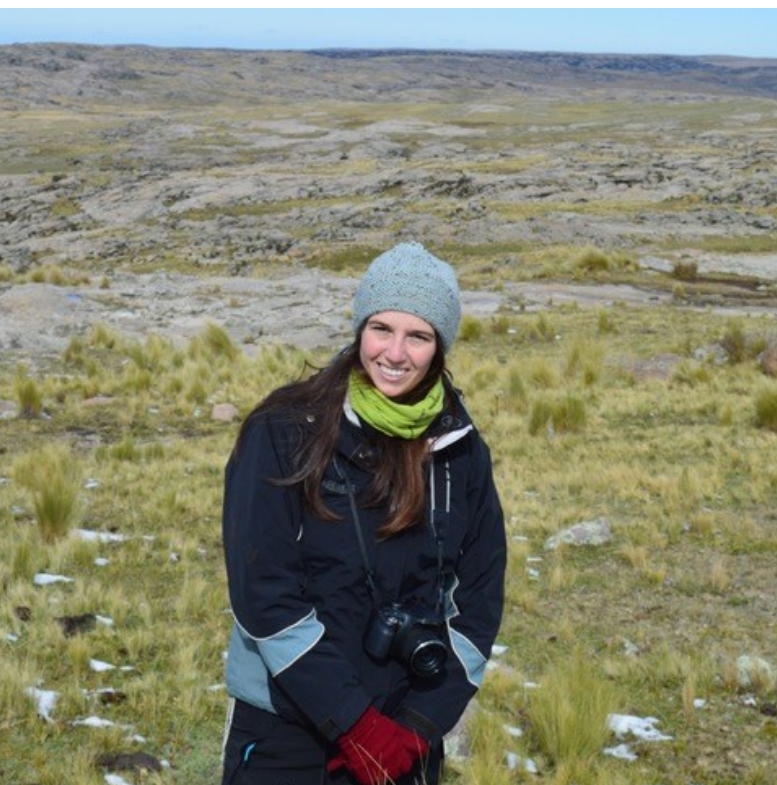
- Didem Ambarlı, Turkey
- Alicia Acosta, Italy
- Carlo Blasi, Italy
- Sándor Bartha, Hungary
- Idoia Biurrun, Spain
- Helge Bruelheide, Germany
- Milan Chytrý, Czech Republic
- Jorge Capelo, Portugal
- Martin Diekmann, Germany
- Scott Franklin, USA
- Alessandra Fidelis, Brasil
- Lars Götzenberger, Czech Republic
- Daniela Gigante, Italy
- Tomáš Herben, Czech Republic
- John Hunter, Australia
- Borja Jiménez-Alfaro, Spain
- Monika Janišová, Slovakia
- Anna Kuzemko, Ukraine
- Maria Laura Carranza, Italy
- Glenda Mendieta Leiva, Germany
- Javier Loidi, Spain
- Rob Marrs, United Kingdom
- Corrado Marcenò, Czech Republic
- Peter Minchin, United States
- Kamila Reczyńska, Poland
- Sergey Rosbakh, Germany
- Peter Török, Hungary
- Ole Reidar Vetaas, Norway
- Susan Wiser, New Zealand
- Wolfgang Willner, Austria
- Florencia Yannelli, Germany
- David Zelený, Taiwan

Introduction of the new steering committee of the YSWG

Dear members of the International Association for Vegetation Science,

We are glad to announce and present the new steering committee of the Young Scientists Section of our association. We represent a diverse and enthusiastic group of young vegetation scientists, full of ideas and keen to put them into practice. The main goals during our mandate will be: to enhance the connection among young scientists and between us and the rest of the association; to support vegetation scientists at their early career stages; and to enhance the visibility of young scientists and of people from diverse backgrounds. We are preparing several actions for each of the goals to be implemented in 2021-2023. Stay tuned to our official channels for formal announcements!

If you wish to be part of the YS section and receive our news please join our [listserv](#). Everyone is welcome to join. Follow us on Twitter [@IavsYoung](#) and Facebook [IAVS Young Scientists](#)



Chair: **Felícia Miranda Fischer** has a PhD in Ecology from the Universidade Federal do Rio Grande do Sul, Brazil. There, she took part in many projects regarding non-forest ecosystems, especially studying the response of native grasslands to grazing management and climate change. Her aim was to establish relationships between plant communities' functional structure, ecosystem processes and stability, in both field observations and experimental frameworks. She is now finishing a Postdoc at Masaryk University, Czech Republic, where she studies plant community dynamics at different timescales and explores geographical patterns in functional traits. Soon she will start a new project at the Desertification Research Centre, Spain, regarding diversity and stability in a drought experiment. She has been part of the IAVS Since 2013 and is a frequent participant in the annual symposia. Her participation in the association has allowed her to establish valuable professional contacts and numerous friends throughout the years.

In this picture, Felícia is visiting the grasslands of *Pampa de Achala* during her stay-abroad at the Universidad Nacional de Córdoba, Argentina.

Membership officer: **Quadri A. Anibaba** is a PhD student in the Ecology Department at the Institute of Dendrology, Polish Academy of Sciences. Quadri primary research interests are in plant invasion ecology and restoration ecology. Additionally, he has an interest in how elements of global change such as climate change and land-use land cover (LULC) change affects species niches and distribution. His PhD research seeks to investigate vegetation succession in post-mining areas at various times and conditions, and to develop a biodiversity model, including ecosystem function, along these successional gradients.

In this picture, Quadri is in his field site - Jos, Plateau State, Nigeria. He studied the ecology of invasive Mexican Sunflower (*Tithonia diversifolia*) (plant behind) across land-use types for his Masters dissertation.



Webmaster: **Karen Castillioni** is a Ph.D. candidate in Plant Biology at the University of Oklahoma, USA. The overarching goal of her current research is to understand how climate change and biotic interactions shape dynamics of biodiversity and ecosystem functioning in temperate grasslands. As part of her research, she investigates the hierarchy of mechanisms and responses beginning with individual responses to higher levels of organization – i.e., community and ecosystem - to enable more robust forecasts of contemporary and future ecosystem dynamics.

Website: karencastillioni.weebly.com

In this picture, Karen is in her field study site, a mixed-grass prairie in Oklahoma. Next to her is a rainout shelter used to control precipitation at multiple levels and experimentally mimic climate change.



In the photo, Filip is measuring the height of a water table on one of Europe's southernmost bog remains near Ljubljana.

Actions officer: **Filip Kuzmič** is an early career researcher with freshly obtained PhD in vegetation science. He obtained his Bachelor's degree in Biology, and Master's degree in Ecology and Biodiversity, all three from University of Ljubljana in Slovenia. Currently, he works at the Research Centre of the Slovenian Academy of Sciences and Arts. In his doctoral dissertation, he explored patterns in European annual weed and ruderal vegetation on a continental scale. For this purpose, he also compiled a European Weed Vegetation Database of vegetation plots. Beside this, he collaborated in field studies of coastal and urban vegetation in the Balkans. Studying vegetation isn't only a professional occupation for him but is a fortunate consequence of his general fascination of plants in all aspects. He is an active member of the Slovenian Botanical Society, its executive board and editorial board of the society's scientific journal *Hladnikia*. Filip is a member of the IAVS since 2016 and has participated in several annual symposia of the EVS section.

Media officer: **Sergey Rosbakh** started his career as vegetation scientists in Irkutsk, Russia, where he was trained as a phytosociologist (his diploma thesis was devoted to Siberian wetland classification). After a few years of working in different scientific projects on mapping Siberian flora and vegetation, he moved to Germany, where he completed a PhD on climate change effects of alpine vegetation using the functional trait approach. For the last few years, he has been working towards obtaining teaching qualification (German 'habilitation') including establishing his own research agenda and doing a lot of various teaching.

He has always been inspired by the members and activities of the IAVS and regularly follows the recent developments in the field from the *Journal of Vegetation Science*. The annual symposium of the Association is always a must-visit event in his calendar.



IAVS working group European Vegetation Survey (EVS)



by Milan Chytrý

The main activities of the European Vegetation Survey Working Group over the last year (from June 2019 to June 2020) were the following:

(1) 28th Meeting of European Vegetation Survey was held in Madrid on 2–6 September 2019, hosted by Rosario (Charo) G. Gavilán, Daniel Sánchez-Mata, Alba Gutiérrez-Girón and other colleagues from the Department of Pharmacology, Pharmacognosy and Botany, School of Pharmacy of Complutense University. The main topic was Vegetation Diversity and Global Change, and specific topics were Assessment and conservation of European habitats, High mountain vegetation, Vegetation classification and data management, Aquatic vegetation, Vegetation dynamics and succession in different habitats: from old fields to forests, and Habitat restoration and plant invasions. More than 160 vegetation scientists from 28 countries attended the meeting. Most participants came from Spain (29), Italy (26), Hungary (16), France (10) and Russia (10). Eleven participants from Bulgaria, Egypt, Russia, Serbia, Turkey and Ukraine received IAVS travel grants. The participants presented 56 talks and 75 posters. Invited key lectures were given by Adrian Escudero (Madrid), Alessandro Chiarucci (Bologna) and Maria Pilar Rodríguez-Rojo (Toledo). A cultural highlight of the meeting was a social dinner with a flamenco show in downtown Madrid. On Friday 6 September, two field excursions were offered, one to the Sierra de Guadarrama National Park, guided by Rosario Gavilán, Alba Gutiérrez-Girón and biologists from the National Park, the other to the landscapes on Miocene bedrock in south-eastern Madrid province, guided by Daniel Sánchez-Mata. EVS thanks the Madrid organizers for a warm welcome and excellent preparation and organization of the programme.

(2) 29th Meeting of European Vegetation Survey was planned to be held in Rome on 4–7 May 2020, hosted by Fabio Attorre, Emiliano Agrillo and colleagues from

the Department of Environmental Biology, Sapienza University of Rome, and other Italian institutions. Because of the outbreak of the coronavirus pandemic, EVS Steering Committee with local organizers decided to postpone this meeting to 2021.

(3) The European Vegetation Archive (EVA), a centralized vegetation-plot database of the European Vegetation Survey, grew continuously and was increasingly used in different projects. By March 2020, this database consisted of 89 contributing databases containing a total 1,669,239 vegetation plots, of which 87% were georeferenced, and 62% were assigned to phytosociological syntaxa. Of these plots, 60% may be accessed under the semi-restricted regime and 27% under the restricted regime, while the other 13% are open access. EVA data were provided to 100 projects (see their list at <http://euroveg.org/eva-database-eva-projects>). Nowadays there are 54 ongoing EVA projects, of which eight started in the last year. EVA data have been used in 26 journal papers, one book, nine technical reports, one bachelor thesis and 73 presentations at conferences or workshops. Details are available in the EVA Annual Report at http://euroveg.org/download/EVAannualreports/EVA_REPORT_2020.pdf. An updated list of all publications is available at <http://euroveg.org/eva-database-eva-publications>.

(4) The European Vegetation Classification Committee (EVCC), launched in 2017 and chaired by Wolfgang Willner and Idoia Biurrun, received three proposals of changes in the standard European vegetation classification (EuroVegChecklist). All the proposals were evaluated by specialist committees composed of EVCC members who were specialists in the topic of each proposal. The specialist committees made recommendations, and EVCC opened voting on the proposals in June 2020.

(5) The Wageningen Environmental Research (formerly Alterra), working together with Masaryk University (Brno) for the European Environment Agency under the

Framework Service Contract, updated the crosswalks between the revised EUNIS Habitat Classification, European Red List of Habitats, EuroVegChecklist and Habitats Directive Annex I. They also revised and updated the expert system for automatic classification of European coastal habitats, wetlands and man-made habi-

tats. A large group of EVS members was then involved in further revision and improvements of the crosswalks and the expert system for most of the EUNIS habitats. The revised expert system and its outputs were summarized in a multi-author paper, which was submitted to *Applied Vegetation Science* in December 2019.

IAVS Working Group for Phytosociological Nomenclature (GPN)

by Jean-Paul Theurillat

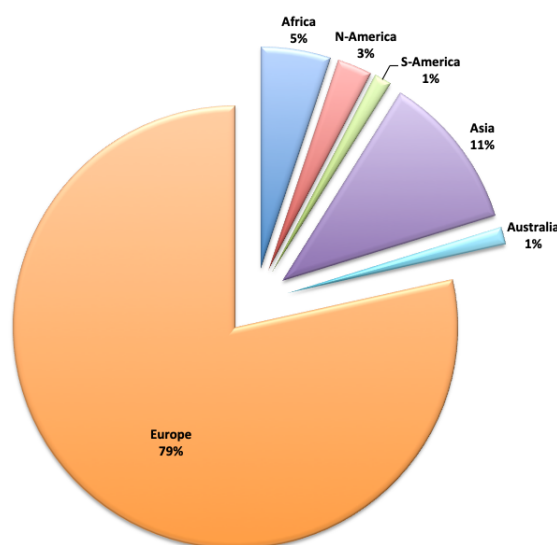
State of the art

- As of 6 July 2020 the GPN counts 79 members in good standing with the payment of the IAVS membership fee for 2019 or 2020. Most members are from Europe (79%), although several other countries around the world are represented as well.

Activities since the Business Meeting in Bremen (18 July 2019)

- The annual business meeting of the GPN was held on 18 July 2019 in Bremen, during the 62nd IAVS symposium. Due to the cancellation of all IAVS activities in 2020 due to the Covid 19 pandemic, no business meeting was held in 2020.
- Publication of the 4th edition of the International Code of Phytosociological Nomenclature (ICPN). Following the approval on 25 May 2019 of the final version by the membership of the GPN, the Steering Committee submitted the manuscript of the Code on 10 November 2019 for publication in *Applied Vegetation Science* (AVS). That version was revised and approved on 15 December 2019, adopting some requested (referees and editors of AAVS) changes in the Introduction and several requests of clarification. The revised version, sent on 11 February 2020, was accepted and went online on the AVS website on 9 March 2020. Some problems arose with the Wiley production that delayed the publication of the Code. However, this allowed to improve the internal coherency of ICPN. The early view was available on 5 December 2020 and ICPN was included as a Report in the first issue of volume 24 published on 9 March 2021. Thanks to the financial support of IAVS to GPN for the year 2020, the 4th edition of ICPN has been published as Open Access and became thus freely available for download (<https://onlinelibrary.wiley.com/doi/10.1111/avsc.12491>).
- Following the publication of the 4th edition of ICPN, the Committee for the Change and Conservation of Names (CCCN) resumed its activity. Federico Fernán-

The GPN composition, as of 2020, July 6 (n=79)



dez-González, Toledo (Spain) was elected as a member to replace Heinrich Weber who passed away in 2020. Proposals 17 (*Berberidion*) and 20 (*Aceretalia*) were discussed.

- With the cancellation of the Memorandum of Understanding between IAVS and Phytocoenologia (see IAVS Bulletin 2019-4) and the establishment last year of the new IAVS journal *Vegetation Classification and Survey* (VCS; see IAVS Bulletin 2020-2), the Reports and official documents issued by the GPN moved to VCS in the section on Phytosociological Nomenclature edited by Federico Fernández-González & Wolfgang Willner. Once a year, the new Nomenclatural proposals will be published as part of the annual Report of the (CCCN) (see <https://vcs.pensoft.net/about>).

Heinrich E. Weber (1932-2020)

On 2 May 2020, Prof. Heinrich Weber, the former Chair of the previous Commission for Phytosociological Nomenclature and an author of the 3rd and the 4th editions of ICPN passed away. An obituary has been published in the IAVS Bulletin 2021-1.

Vegetation Classification Working Group

*by Ching-Feng Li (Chair, posthumously) †, Flavia Landucci (Secretary),
Scott B. Franklin, Gonzalo Navarro & Ladislav Mucina*

The present steering committee was elected in May 2018. Since the beginning we discussed possible future activities of the working group. We decided to have a brake about the global classification system at the biome level (“Rethinking Biomes”) because we realized the subject is still too controversial and only a few people of the group were active in this topic – they pursued this subject on their own. Instead, we preferred to continue the activities about the plot-based vegetation classification. We planned to cooperate with all the VCWG members to create an online platform with pictures and descriptions of vegetation units from around the globe. Our aim was to create a practical tool that could summarize and relate vegetation units of different systems and countries. We also planned to present our proposal and continue the discussion about unifying vegetation classification systems in IAVS conferences.

Unfortunately, our plans have not been realized due to unpredictable events. The most relevant was the illness and premature loss of our chairman Ching-Feng Li. During his illness we decided to have a pause of our activities, not only because he was a key person in the organization but also because most steering committee members were not able to attend conferences and actively work for personal reasons.

After the death of Ching-Feng Li we decided to end our mandate and organize new elections. We realized that the time before the official end of the mandate was not enough to achieve our objectives and the worldwide COVID-19 emergency did not allow the organization of a working group meeting. We are currently proceeding with the nominations of possible candidates.



Eurasian Dry Grassland Group (EDGG)

*by Péter Török
(on behalf of the Executive Committee of the EDGG)*

Members and organisation of the EDGG

Since the last report in 2019, we revised the membership list and validated the contacts. The number of EDGG members is now 1,337 from 64 countries (June 2020). Membership in EDGG is free of charge and can be obtained by sending an e-mail to our membership administrator Idoia Biurrun (idoia.biurrun@ehu.es). The current Executive Committee consists of Alla Aleksanyan (Armenia), Didem Ambarlı (Germany/Turkey), Idoia Biurrun (Spain), Iwona Dembicz (Poland), Jürgen Dengler (Switzerland/Gernany), Anna Kuzemko

(Ukraine), Péter Török (Hungary), and Stephen Venn (Finland).

For further details, see article in *Palaeoartctic Grasslands* 46.

EDGG events

Past EDGG event

The 13th Field Workshop: “Grasslands of Armenia along an elevational gradient” was held between 26 June – 6 July 2019 in Armenia, organised by Alla Aleksanyan and team. The short description of this Field Workshop was missing from the last year’s report, thus, we publish it

here. The main aims of the Field Workshop were: 1) to analyse the biodiversity patterns of the Armenian grasslands across spatial scales and multiple taxonomic groups (vascular plants, bryophytes, lichens, and orthopteroid insects), 2) to study the syntaxonomic position of these grasslands in a general European context. The field sampling was very successful: 19 participants from nine countries (Armenia, Austria, Bulgaria, Germany, Italy, Russia, Spain, Switzerland and Ukraine) recorded 29 EDGG Biodiversity Plots and 53 additional 10-m² plots. Data on orthopteroid insects were collected in 40 100-m² plots. Collected data show that Armenia is one of the Palaearctic hotspots of fine grain plant diversity. Moreover, determination of cryptogam specimens collected during the FW revealed two new species to Armenia: the moss *Syntrichia papilosissima* and the lichen *Aspicilia hispida*.

See further details in *Palaearctic Grasslands* 46 and at the Past Field Workshops page: <https://edgg.org/fw/pastfw>.

Eurasian Grassland Conferences postponed

We scheduled to have our annual conference in September 2020 in Tolosa, Spain and announced the second call for the conference after the Covid-19 pandemic had begun. Due to the severity of the pandemic, the local organizing committee (Idoia Biurrun, Itziar García-Mijangos, Javier Loidi, Juan Antonio Campos, Isabel Salcedo, Peter B. Pearman, Asun Berastegi), in consultation with the EDGG Executive Committee decided to postpone the conference until 2021. There were two main reasons for our decision: Firstly, even if the pandemic will hopefully be over shortly, still travel limitations and risks related to the second wave are expected. We did not want to put our participants at risk by making them travel long distances and gathering several people around the Palaearctic in one big event. Secondly, as of 20th June, there are still Corona-positive cases and losses; we realized that we may run out of time for the organization even if the pandemic would be over in July. Registered participants were informed immediately about the postponement and their fees repaid.

The conference will be held with the same theme, sessions and a similar schedule in 2021. Detailed information on dates and registration will be announced on the EDGG website, as well as in *Palaearctic Grasslands*, during autumn 2020. We hope that our keynote speakers and participants will be able to join us and we will welcome all of you in Tolosa. Consequently, the conference planned to be organized by Peter Török and his colleagues next year in Hungary, has been postponed to 2022.

EDGG Field Workshops postponed

Due to the Coronavirus pandemic, the EDGG Executive Committee, in accordance with the local organizers, decided to postpone the 14th Field Workshop in

Ukraine to 2021. Therefore, the schedule for next years' Field Workshop announced in PG 45 (p. 4) has been rearranged, after consultation with all the organizers:

- 15th EDGG Field Workshop in South Tyrol, Italy, hosted by Andreas Hilpold and team, has been postponed to summer 2022.
- 16th EDGG Field Workshop in Picos de Europa, Spain, hosted by Amparo Mora and team, has been postponed to summer 2023.

Exact dates of the 14th Field Workshop in Ukraine, organized by Denys Vynokurov and team, will be announced in early autumn, on our website, media and in *Palaearctic Grasslands*.

Publication activities of EDGG

Palaearctic Grasslands

Four issues of *Palaearctic Grasslands* ("PG"; former *Bulletin of the Eurasian Dry Grassland Group*) have been published during the period reported here, and a fifth is in the final stages of preparation: Nos. 42 to 46. While *Palaearctic Grasslands* continues to be the platform for official announcements of the EDGG Executive Committee to the members ("News", "EDGG Events"), for "Short Contributions" from members for members, "Book Reviews", overviews of "Recent Publications of our Members" related to grasslands and "Forthcoming Events", it now has two major new elements: (i) PG now publishes scientific articles in four categories: "Research Article", "Review", "Forum Article" and "Scientific Report". They are subject to editorial peer review, which ensures on the one hand scientific soundness, and on the other hand fast decisions. (ii) PG has a strong focus on excellent quality photography from Palaearctic grasslands, their flora and fauna and the people using them. The new format of "Photo Stories" allows submitting grassland articles of a couple of pages, consisting mainly of photos with brief texts, which celebrate the beauty of certain grasslands of some region and their rich biota.

In addition, in issue 46 the new article type "A Glimpse of a Grassland" will be introduced. It is aimed at presenting short stories and nice photos of grassland types or grassland sites particularly beloved by the author. The firsts 12 "Glimpses" will appear in issue 46 and have been motivated by the confinement of most of us during spring 2020.

Completed Special Features and book chapters organised by EDGG

Further, EDGG continued its long-standing tradition of Special Issues/Features in international journals. In the reporting period, EDGG organised three special issues during the reported period. There were two regular issues organised in the journals *Hacquetia* and *Tuexenia* and one issue in progress in *Flora*:

- The 14th EDGG Special Feature in *Tuexenia* (entitled: “Restoration, monitoring, conservation and phytosociology of semi-natural and natural grasslands in Central Europe”) was published in October 2019, edited by Balázs Deák, Thomas Becker, Steffen Boch, Jürgen Dengler and Viktoria Wagner. This SF focused on the restoration, monitoring, conservation and phytosociology of Central European grasslands. Altogether 40 authors from seven countries (Austria, Czech Republic, Germany, Hungary, Italy, Romania and Switzerland) were involved in the six published articles. The Special Feature highlights many aspects of grasslands involving different study organisms and scales. The publications are all open access and freely available from the journal website at https://www.zobodat.at/publikation_volumes.php?id=62149.
- The 5th EDGG-edited Special Feature in *Hacquetia* was published in December 2019 (*Hacquetia* 18-2), edited by O. Valkó, S. Venn, R. Labadessa, S. Palpurina, S. Burrascano and A. Ushimaru. The papers in this special issue cover a wide range of grassland ecosystems from mountain dry grasslands to lowland loess grasslands, feathergrass steppes and wet grasslands, and focus on the biodiversity values and conservation issues of Palaearctic grasslands. It also includes a report on EDGG activities in 2018-2019.
- A further Special Issue organised by EDGG was guest edited by Péter Török, Barbara Neuffer, Karl-Georg Bernhardt and Karsten Wesche in the journal *Flora*. This Special Issue is devoted to the ecology and evolution of steppe biodiversity and forms a nice addition to the formerly published issues and papers on the topic. In the issue. The special issue contains 12 papers with an editorial and will likely be published in the autumn 2020.
- After having contributed about half of the content of the book *Grasslands of the world: diversity, management and conservation* (eds. Squires, V.R., Dengler, J., Feng, H. & Hua, L.) in 2018, EDGG again contributed the Palaearctic chapters to a major reference work in 2019/2020, the *Encyclopedia of the World's Biomes* published by Elsevier. Jürgen Dengler & Péter Török managed to organise and edit 12 regional chapters, which together cover the grasslands and shrublands of the whole Palaearctic comprehensively and consistently. A synthesis chapter by J. Dengler, I. Biurrun, S. Boch, I. Demicz & P. Török summarizes the findings across the whole biogeographic realm. While the individual chapters were available online since end of 2019/early 2020, the paginated

multi-volume book was released on 18 June 2020.

Ongoing Special Features

- Following the previous, a new Special Feature is already in progress in *Tuexenia*: the 15th edited by EDGG, with the title “Sustainability of Central European seminatural grasslands –traditional land use, management and biodiversity”, edited by S. Boch, T. Becker, B. Deák, J. Dengler and V. Wagner. It is scheduled to be published in 2020.
- Following the previous, a new special issue has been initiated in *Hacquetia* (6th EDGG SF), with the working title: “Fauna, flora, vegetation and conservation of Palaearctic natural and seminatural grasslands”. The issue welcomes manuscripts about natural and semi-natural grasslands, on all taxa and from any region in the Palaearctic realm (Europe; West, Central and North Asia; North Africa). This Special Issue will appear as the first issue of 2021, to be published approximately in January 2021, with about 150–250 pages reserved for our articles. It will also contain a report on the EDGG activities in the previous year.
- Currently a call is open for a Special Feature “Classification of grasslands and other open vegetation types in the Palaearctic” in the new IAVS journal *Vegetation Classification and Survey*. Editors are Idoia Biurrun, Jürgen Dengler, Monika Janišová and Arkadiusz Novak. Submissions of abstracts to juergen.dengler@unibayreuth.de is possible until 31 July 2020 (extended deadline).

Other EDGG media

EDGG is continuously improving its media tools to provide updated and accessible information to the visitors of its homepage. Publication menu of the EDGG homepage was updated to include two new pages devoted to the special features of EDGG: Ongoing Special Features (<https://edgg.org/publ/ongoingsfeatures>) and Past Special Features (<https://edgg.org/publ/pastsfeatures>). The purpose of the first one is to attract attention to the planned special features and provide detailed information about the planned journal, editors, outline, submission information and the deadlines. In the Past Special Features page, we checked and updated all paper links. Finally, we also moved Publications from our Members page (<https://edgg.org/publ/publmembers>) to the submenu of the Publications. In this page, the publication information sent by our members are listed under different topics and then chronically. We are still working to make this page as complete as possible.

Database activities of EDGG

In our last report, we informed the IAVS about the re-launch of the EDGG managed GrassPlot database, based on the former Database Species-Area Relationships in Palaearctic Grasslands. GrassPlot stores multi-scale richness, composition and environmental data from precisely delimited plots of grasslands and other open habitats of the Palaearctic Realm. Since its formal establishment during an international workshop in March 2017, with 87 datasets, 27,355 plots and 1,144 nested-plot series of at least four grain sizes, the database has increased its content and functionalities. The GrassPlot version 2.0. reported by Biurrun et al. (2020, PG44: 26-47) contains 190,673 plots and 4,654 nested-plot series with at least four different grain-sizes, from 184 datasets. Since the publication of this report in December 2019, the structure of the database was further improved, and its content augmented.

A first analytical paper was published in January 2020:

Dengler, J., Matthews, T.J., Steinbauer, M.J., Wolfrum, S., Boch, S., Chiarucci, A., Conradi, T., Dembicz, I., Marcenò, C., García-Mijangos, I., Nowak, A., Storch, D., Ulrich, W., Campos, J.A., Cancellieri, L., Carboni, M., Ciaschetti, G., De Frenne, P., Dolezal, J., Dolnik, C., Essl, F., Fantinato, E., Filibeck, G., Grytnes, J.-A., Guarino, R., Güler, B., Janišová, M., Klichowska, E., Kozub, Ł., Kuzemko, A., Manthey, M., Mimet, A., Naqinezhad, A., Pedersen, C., Peet, R.K., Pellissier, V., Pielech, R., Potenza, G., Rosati, L., Terzi, M., Valkó, O., Vynokurov, D., White, H., Winkler, M. & Biurrun, I. 2020. Species-area relationships in continuous vegetation: Evidence from Palaearctic grasslands. *Journal of Biogeography* 60: 72–86.

Another paper, partly based on GrassPlot data has just been submitted, while six more paper projects are on the way. Any data contributor can propose paper projects based on GrassPlot data, and non-contributing scientists with good ideas just need to join up with a data contributor to get access to the full content of this unique database.

A new Governing Board of GrassPlot was elected in February 2019. Jürgen Dengler, Idoia Biurrun, Iwona Dembicz and Riccardo Guarino continue from the former Governing Board, and Jutta Kapfer, Sabina Burascano and Remigiusz Pielech are new members for the period 2019-2021.

A menu devoted to Databases will be constructed in EDGG homepage. It will include separate pages for Introduction to vegetation databases, Grassplot, Grassplot Online and Regional Databases. And many other pages providing information about methods, meetings

etc. GrassPlot representatives and EDGG chairs held a meeting and decided on the structure and functionalities of the pages. Now the content of the pages (methods, separate databases, publications, photos) are being updated. The menu will be launched before the end of 2020.

Financial issues

The main financial support of EDGG occurs via IAVS. The IAVS provided travel grants for the EDGG Field Workshops and EGC in total of 7500 €. IAVS also provides honorarium (1000 €) to one EDGG representative to attend the annual IAVS Symposium to Bremen. The support is greatly acknowledged by the EDGG. We also used 1612.1 € from our own savings to support the attendance of colleagues at the Field Workshops. In addition in 2019 and 2020, IAVS provided an annual baseline support (500 €).

EDGG received from IAVS an additional 3700 € project funding for 2019 for supporting chairs to attend the EDGG conference in Graz (up to 3000 €), and for covering costs of linguistic editing of non-native authors in the EDGG special features in *Hacquetia* and *Tuexenia* (in total of 700 €). We used from this support 1882.90 € for supporting EDGG Chairs to attend the EDGG conference, and the sum of 700 € was reserved for EDGG to use it in the next calendar year (256.62 € paid to the linguistic editor, Aiko Huckauf, 443.38 € remained for 2020). This year, at the second time we organised a campaign to raise funds for the EDGG. By charity donations. From these donations this year we supported EDGG Field Workshops. The EDGG has also received from FlorSoz a language editing support for *Tuexenia* (500 €). All support is greatly acknowledged.

We cordially invite you to join EDGG, its events and activities!

IAVS Working Group for Ecoinformatics

by Borja Jiménez-Alfaro (chair), Glenda Mendieta-Leiva (secretary), Manuele Bazzichetto, Sebastian Schmidtlein & Andrei Zverev

Meeting in Bremen 2019

The last meeting of the Ecoinformatics Working Group (EWG) took place in Bremen (Germany) during the 62nd Symposium of the IAVS. The meeting was attended by 23 people, including three members of the Steering Committee (SC). Susan Wiser stepped down from the SC after being elected as the new IAVS President and the SC asked for new candidatures, encouraging young scientists. The self-candidature of Manuele Bazzichetto was accepted unanimously. The meeting was mainly based on a brainstorming session about what our working group could implement in the following years. Main ideas referred to the registration for future courses together with the conference registration, creation of new courses and workshops upon the willing of IAVS members, develop tools for online scripting and github connections, create a list of all members and their competences, work on a website, create awards for best graphs, make workshops for R graphics, promote summer schools by attracting external funding, establish newsletters or other updates about papers and news, collaborate with the IAVS Young Scientists group (Manuele Bazzichetto is involved in both groups) or with the LAC group (Glenda Mendieta is member of the SC in both groups), and promote a course about Remote Sensing/LiDAR in the next IAVS meetings.

New secretary of the Steering Committee

On Autumn 2019, the new SC asked Glenda Mendieta, an active participant of the group meeting in Bremen, to join the Committee as the secretary, following the bylaws of the EWG.

Main activities developed in the last year

- Glenda Mendieta has prepared a roadmap to expand teaching activities of the EWG to Latin-American countries. The first application for funding will be made in Autumn 2020.
- The SC has been working in the main topics that fall into the objectives of the EWG, to be included in the website of the EWG. The website will provide a synthesis of the main resources available for vegetation scientists, including e.g. standards for data exchange, tools for gathering and storing co-occurrence data, list of available software, specific tools for the analysis of vegetation big data, remote sensing, sensors for data acquisition, etc.
- The SC contacted with Pierre Legendre to organize a course on statistics during the IAVS conference in Vladivostok, making a formal request to the young scientist WG for their favorite topics to be included in the program. Unfortunately, the course was cancelled together with the IAVS meeting due to the global COV-19 situation.

Pending activities

- We are still in the process of reframing the EWG bylaws on fostering ecoinformatics knowledge and skills in the IAVS community (by organizing workshops, talks and sessions at IAVS conferences, administering IAVS funds for advancing ecoinformatics, and doing outreach to make tools that are already available more visible). The new bylaws should be agreed by the SC after consultation with the members of the EWG and then submitted to the IAVS Council for approval. The whole process was however interrupted due to the cancellation of the IAVS meeting in Vladivostok.

Historical Vegetation Ecology Working group

by Guillaume Decocq

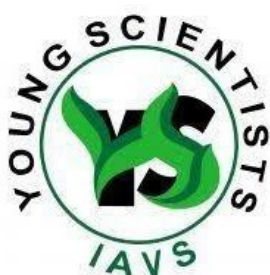
- The annual business meeting of the Historical Vegetation Ecology Working group (HVE WG) was held in Bremen on 16th July 2019, during the 62nd IAVS annual symposium. This was the opportunity to update participants with the number and profile of members, and to present the results of the internal survey aiming at defining key priorities of the WG (see below).
- A session entitled “The legacy of the past in the biodiversity of current vegetation” has been organized by G. Decocq, R. Hédli and P. Szabó on Friday 19th July 2019 as a special session of the 62nd IAVS annual symposium in Bremen. A total of 8 oral presentations were given by Déborah Closset-Kopp (Does the age of the oldest hawthorns reflect the age of a hedgerow?), Victor Danneyrolles (Stronger influence of anthropogenic disturbance than climate change on century-scale compositional changes in northern forests), Guillaume Decocq (Even a transient conversion of silviculture in the past leaves a signal in the present understorey vegetation of a managed broad-leaved high forest), Jaan Liira (Ecosystem service quality of small forests in rural landscapes - the effect of the past and present), Kathrin Litza (Historical or present-day conditions - which variables affect the forest specialist diversity in hedgerows?), Vincent Mokoka (Managing ecosystem functions and services in the face of drought: a plant functional trait perspective), John Rodwell (Medieval records and present-day forest composition: welcome and unwanted intruders among lowland English biodiversity), and Jan Rolecek (Peri-Carpathian forest-steppe: soil charcoal elucidates the role of humans in the development of landscape of extreme biodiversity). Another closely related Special session entitled “Long-term studies in vegetation science” was organized on Monday 15th July, including 16 talks, of which several were given by WG members.
- Following the special session “Historical ecology in vegetation science” organized at the IAVS Symposium in Bozeman 2018, Radim Hédli is coordinating a special issue of *Journal Vegetation Science*, mostly based on the presentations given at this session. The special issue should be published at Fall 2020. It is co-edited by R. Hédli, P. Szabó, G. Decocq, M. Wulf and S. Cousins. Some of the articles can already be reached on the JVS website, “early view” and “accepted papers” sections.
- We assembled a Directory within the HVE WG, to facilitate internal communication. All members were invited to complete a one-page formatted document but only half of them sent back the form.
- A second *Information Letter* has been released in January 2020, distributed to all WG members and posted on the IAVS website.
- We conducted an on-line survey, to help the Steering Committee in defining priorities for the coming years. Preliminary results, based on the 96 responses, were presented during the 2019 business meeting. A more-in-depth analysis of the results still has to be done but preliminary results are very promising. This was a target for 2020, but the pandemics arrived...
- Most 2020 activities were cancelled due to the Coronavirus pandemics. This concerns the Workshop planned in Metz (France) in May 2020 and the Business meeting planned in Vladivostok (Russia) in July 2020. These activities will be re-scheduled as soon as the health situation worldwide will be clearer.
- Recently (June 2020), the Chair of the WG has been proposed by the French National Scientific Research Centre (CNRS) and its partner ISTE (scientific editor in close relationship with Wiley and Elsevier) to edit a multi-authored book dedicated to Historical Ecology, which would be published as a reference tutorial by ISTE/Wiley in 5 different languages (English, French, German, Spanish, Chinese). Since this is a very good opportunity to spread historical ecology within the scientific community and to shed light on our working group, all WG members were invited to contribute to such a tutorial. Proposals will be collected until late June and the feasibility of assembling a volume will be evaluated subsequently.

Report of the IAVS North American Section

by Peter R. Minchin, Section Chair

The North American Section has not been active during this year. The current Steering Committee members are Peter Minchin (Chair), Mark Fulton (Vice-chair), and James Moore (Secretary/Treasurer). According to the bylaws of the section, we are overdue for an election. The Secretary/Treasurer will obtain an up to

date listing of section members and send out an e-mail to all members in August calling for nominations. An election for a new Steering Committee will then be held by e-mail. The new Steering Committee will have to consider ways in which the section can become more active in the coming years.



IAVS Young Scientists Working Group

by Reginald T. Guuroh, Mirjana Ćuk, Amarizni Mosyafitani, Marta G. Sperandii & Florencia Yannelli (IAVS-YS Steering Committee Members, 2019-2021)

Young Scientists Meeting at IAVS in Bremen

The retiring steering committee took advantage of the symposium in Bremen to hold a general meeting for young scientists present. The meeting basically served to welcome new members and introduce the YS Working Group to them. In addition, the meeting provided a platform for members to discuss ideas about the activities/ events that the group will like to undertake during the year.

Update of membership

One of the first tasks by the former steering committee was to update the membership database to obtain better information about geographical distribution of members, gender, research expertise etc. To achieve this, a google survey was sent out for all members to fill out the required information. The survey revealed a total of 194 members of which 180 were active and could be reached via email. Majority of the active members, as at June 2019, were (in descending order) from America, Europe, Asia, Africa and Australia (Figure 1). In America, the United States have the highest representation followed by Brazil while European

representation is led by Germany and followed by Italy (Figure 2).

Apart from providing their personal information, members were required to also provide information about their research skills and expertise in the hope of stimulating collaboration among members.

Creation of African Group of YS

During the year, the African section of IAVS YS was created. Currently, there are 25 members with a WhatsApp group as a means of communicating. The objectives of the group include: to improve connection between African young scientists; to increase membership of Africans in the IAVS in general; and to form a basis for the creation of an African Section of the IAVS in the near future.

Promoting communication within the group

When the former steering committee took over, the YS had already a facebook account (<https://www.facebook.com/groups/353191064892110/>) as a mean of communication in social media. Our committee decided to add a Twitter (@IavsYoung) and Slack account, which will now be operated by the new-

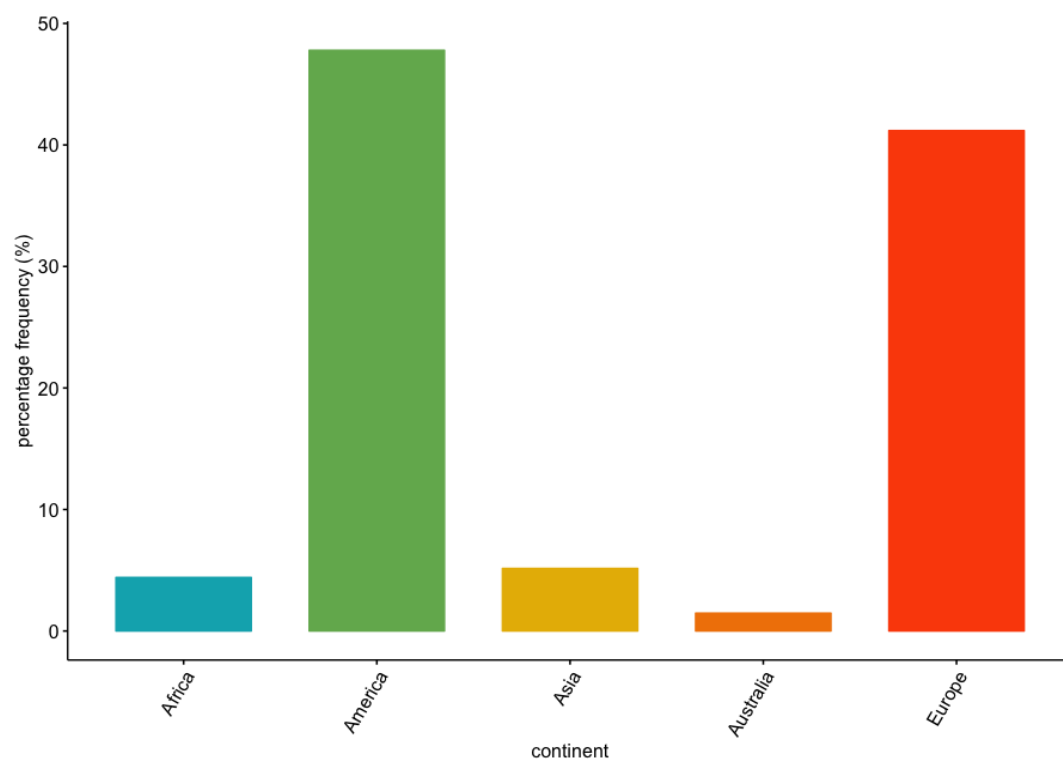


Figure 1. Active members as at June 2019 grouped by continent

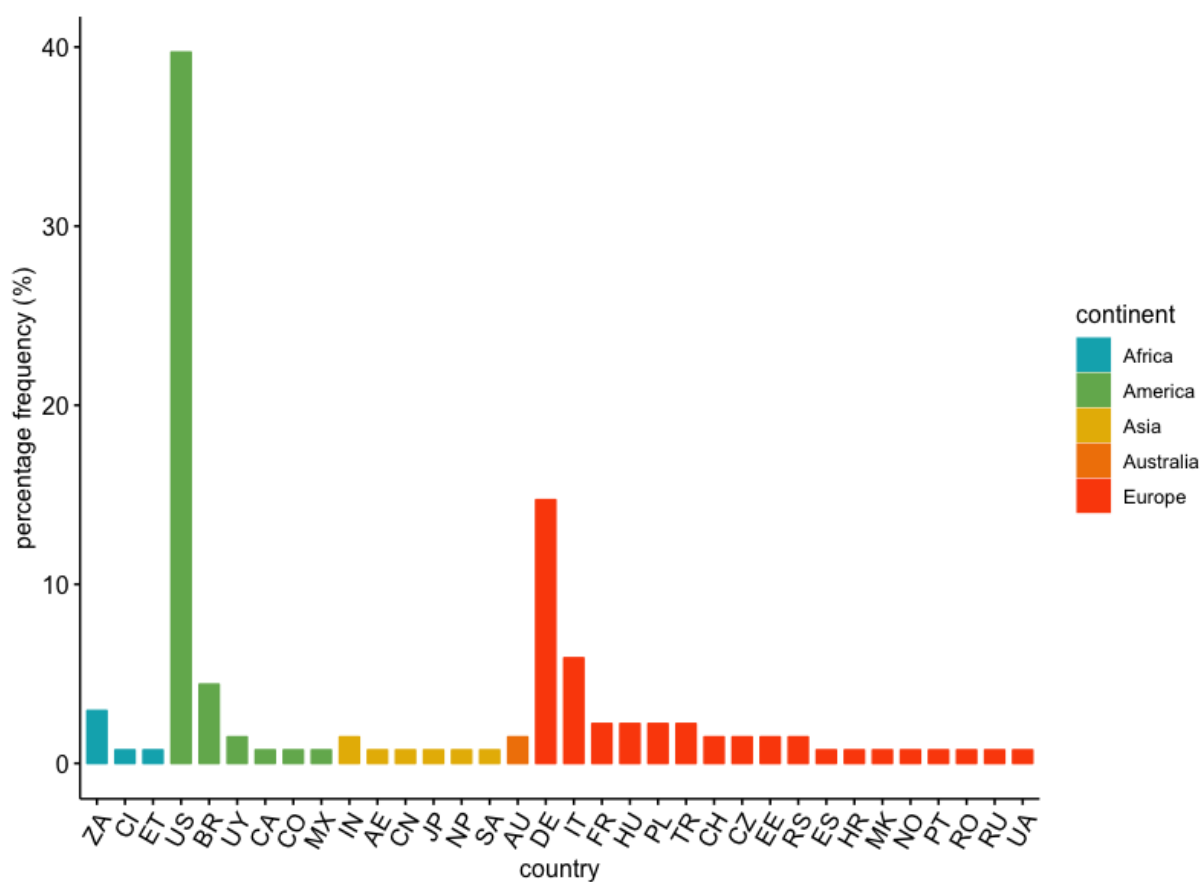


Figure 2. Active members as at June 2019 grouped by country

ly elected committee. Additionally, we created a new email address (iavs.youngsci@gmail.com). It is our hope that this will improve communication and networking among members of the group.

Online talk

During November 2019, the committee organized an online talk event in collaboration with the Indonesian Graduate Students Organization of IPB University. The aim was to promote IAVS and IAVS YS in Asian countries, especially Indonesia which has only few registered members. The event was coordinated and moderated by Amarizni Mosyafiani (one of the YS steering committee members). There were two speakers who presented on: 1) research article writing technique – by

Prof. Dr. Irmanida Batubara; and 2) How to publish in a Scopus indexed journal – by Dr. Mirjana Cuk. The event was successful and had 72 participants.

Virtual Workshop for Young Scientists in AVS

Following the cancellation of the IAVS Annual Symposium in Vladivostok, the group could not hold its annual in person meeting. In order to promote connection between members and to be able to undertake a common event, the YS steering committee decided to organize an online workshop for members on the topic 'Emerging challenges in vegetation science – IAVS Young Scientists perspective'. This was a two-day online workshop in October 2020.

Latin-America and the Caribbean Regional Section

by Marius Bottin (Chair), Glenda Mendieta-Leiva (Membership administrator), Cloe Xochitl Pérez Valladares, Gabriella Damasceno and Gwendolyn Peyre.

History of the group

The idea of a South-american/Latin american regional group in the IAVS was put forward first during the 59th Symposium in Pirenopolis 2016 by a small group of researchers organized by Alessandra Fidelis, as a few small meetings and contacts were made during the symposium. Afterwards, an informal group kept contact and started working on the bylaws, and potential projects for the future section. During the IAVS council meeting of the 61st Bozeman symposium in 2018, the section was formally presented. In 2019, an informal meeting was organized and new contacts were made during the Bremen Symposium and the bylaws were approved by the council. A temporal Steering Committee took as interim until the elections, which took place in February-March 2020.

Elections 2020

The five current members of the steering committee were the only people to present candidatures. The vote was organized by Georgina Conti and Lucrecia Lipoma, who have been active members of the group since the Pirenopolis Symposium but were not nominated for election. Voters were asked to vote for the Chair and Membership administrator among the five candidates through an anonymized google form. A total of 39 vot-

ers participated out of the 75 members in the section at the time.

Activities 2020

Social networks

For communicating between members, the section uses a google group. Cloe Xochitl Pérez Valladares created a facebook group on March 28th (<https://www.facebook.com/groups/231804811331004/>), gathering 64 members and 29 posts so far. Moreover, Glenda Mendieta-Leiva created a Twitter handle (@iavsLac) for the section in late March, which will be launched as soon as the section's mission and vision are consolidated. At present, a dynamic formulary is being created to make membership automatic and keep updated members' data in a formal database administered by the steering committee.

Membership

The section currently holds 90 members (60% women, 40% men), from 17 countries. Most members are affiliated to South-American or Mexican academic institutions, however, many come from the USA and European countries. Central America and the Caribbean is less represented among our members, and we should make some efforts to reach more people in these regions,

maybe through the National botanist associations and symposia.

Projects 2021

Madrid IAVS Symposium

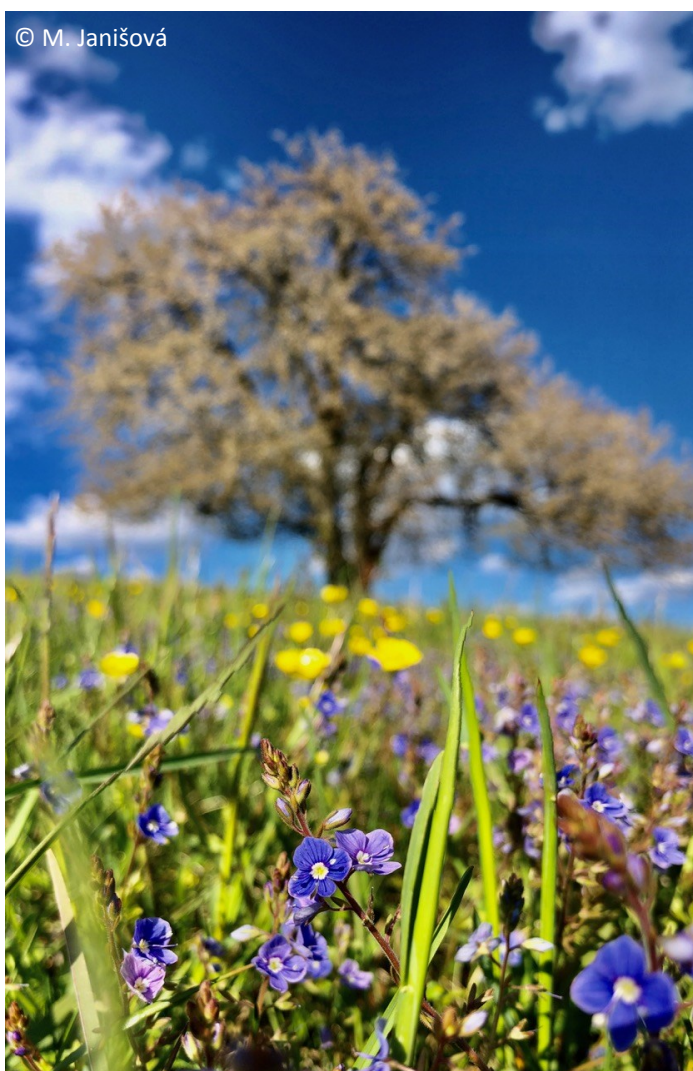
The Madrid symposium will undoubtedly present itself as a great opportunity to present the first activities. In addition, because Spain is a well connected country to Latin America and the Caribbean, the section looks forward to an important representation of the region it stands for and as a result strong networking, brainstorming and growth. At present, the steering committee is establishing its priorities for the event and actively researching funding options to conduct small on-site workshops (but counting with online broadcast) and invite a key representant speaker. Discussions with the local organizing committee are therefore ongoing. Finally there is an open debate on the potential outreach and feasibility of organizing activities such as a field trip or a jointly built Data processing and Ecoinformatics, specifically designed for tropical vegetation with emphasis on Latin America and the Caribbean and targeting LAC young researchers in priority, counting for example with the support of the Ecoinformatics and the Young Scientists sections).

Bibliometrics project

One of our projects is to analyze the scientific papers concerning Latin America and the Caribbean vegetation. Our objectives are:

- i. to understand the collaboration structure between scientists interested in the vegetation of the region
- ii. to analyze the specificities, strengths and weaknesses of vegetation science in the region
- iii. to gather information on the leading academic research institutions in terms of LAC vegetation publications
- iv. to propose a collaborative work to our members that may result in a collective article in a journal specialized in bibliometrics or vegetation science

We have for now collected bibliographic information about all the articles published in JVS and AVS since 1996, realized some basic conceptual maps of the literature, and we are currently trying to find the best way to segregate the articles concerning Latin America and the Caribbean.



Early May is the start of the fieldwork season in Central European grasslands.

Exploring vegetation virtually with the Global Vegetation Project

by Sienna A. Wessel¹, Jesse R. Fleri¹, David H. Atkins¹, Trevor A. Carter¹, Alice E. Stears¹, Hailey E. Mount¹, Nicholas W. Case², Shannon E. Albeke² & Daniel C. Laughlin¹

1 Department of Botany, University of Wyoming, Laramie, WY, USA

2 Wyoming Geographic Information Science Center, University of Wyoming, Laramie, WY, USA

The postponement and cancellation of field expeditions in response to the global pandemic have left many of us hungry for opportunities to explore our natural world. Furthermore, travel limitations have posed significant challenges for educators, especially in teaching field-based courses. It became apparent over the summer of 2020 that the vegetation science community as a whole was yearning to virtually experience diverse plant communities, as evidenced by the broad sharing of photos on Twitter for the #IAVS2020_VirtualFieldTrip. What a joy it was to see such fine landscape photography from enthusiastic scientists sharing exciting botanical and ecological information (Wagner et al. 2020)!

As we sifted through our own photos of field seasons past while daydreaming about long workdays, relevés, and students eager to learn plant ID, an idea was born. We realized that our photographs of vegetation could play a much more significant role in teaching and research. These images capture valuable information about plant diversity and geography across the globe (Fig 1). Therefore, we put out a call in April 2020 for scientists and botanically-inclined persons to collect and contribute georeferenced vegetation photos. These submissions fueled the first draft of an interactive map application which we released over the summer of 2020 for beta testing.

The Global Vegetation Project (<http://gveg.wyobiodiversity.org>) emerged from these experiences and realizations. Our team of spatial database, web API, server hardware, and Shiny application developers have produced an online open-access global map of vegetation, populated by user-contributed photographs that include a variety of value-added information. Types of information collected include vegetation type, dominant species, Walter-Leith climate diagrams (Breckle 2002), biome, ecoregion (Olson et al.

2001; Dinerstein et al. 2017), Whittaker biome (Whittaker 1970), and anecdotal facts about the site of general interest. Our unique synthesis of vegetation photos and supporting information opens the door to virtual exploration of real-world ecological patterns in an intuitive and exciting way. Figure 2 illustrates the user interface, where explorers navigate the map on the left to view information about photos displayed on the right, with the option to display climate diagrams and apply different filters (e.g. maximum mean annual precipitation). Since launching our application in August 2020, the database has grown from 200 to 1240 photos, thanks to contributions from more than 250 photographer-botanists.

The collaborative map is a true celebration of the diversity of vegetation on our planet, with user-submitted photo points from 64 countries and every continent! However, many areas in the world are grossly underrepresented – a far too familiar tale in the ecological sciences (Culumber et al. 2019). For example, all terrestrial biomes are represented, but tropical and tundra regions are sparse (Fig 3A). Another primary target of this project is to represent every ecoregion, but there is a deficit in spatial representation across the 847 global ecoregions (Dinerstein et al. 2017). Our map's current version includes photo points that span less than 26% of these classified areas (Fig 3B). The educational and scientific value of our interactive map will be maximized with a more complete photoset. You can read more about our project aims and development in the full Vegetation Classification and Survey report (Fleri et al. 2021).

To make our vision for this project a reality, we are asking our colleagues in vegetation science around the world to collaborate through photo submissions and application feedback. We are thankful that IAVS leader-

ship has expressed enthusiastic support for the project. Scott Franklin and others in the IAVS Vegetation Classification Working Group, Pat Comer at NatureServe and the Ecological Society of America Vegetation Classification Panel, and Jürgen Dengler have supplied us with constructive suggestions and helpful information about vegetation classification which we incorporated into our database structure. Additionally, the Editors of *Palaeoarctic Grasslands* of the Eurasian Dry Grassland Group (EDGG) are encouraging vegetation photos published in their journal to appear on the map and for the EDGG's widespread membership to contribute photos.

Now, we invite you to visit our website and to explore our virtual vegetation database (<http://gveg.wyobiodiversity.org>). Please consider supporting this global initiative by contributing your own photos through our user-friendly photo submission portal. Crowd-sourcing is the only way for us to fill the map with photo points, especially when it comes to remote and far-reaching areas of the planet. If you are willing to contribute, you can rest assured that your photos and data will be handled and stored responsibly and professionally (see details in Fleri et al. 2021).

Virtual explorations of vegetation can never replace real-world field experiences. However, the ability to investigate global plant diversity and biogeographical patterns from a computer or smartphone anywhere in the world is unique and valuable. We envision that this database and interactive map application will serve as an engaging tool for K-12 educators, university classrooms, and anyone interested in the natural world.

You can follow the Global Vegetation Project on social media at @GlobalVegProj.

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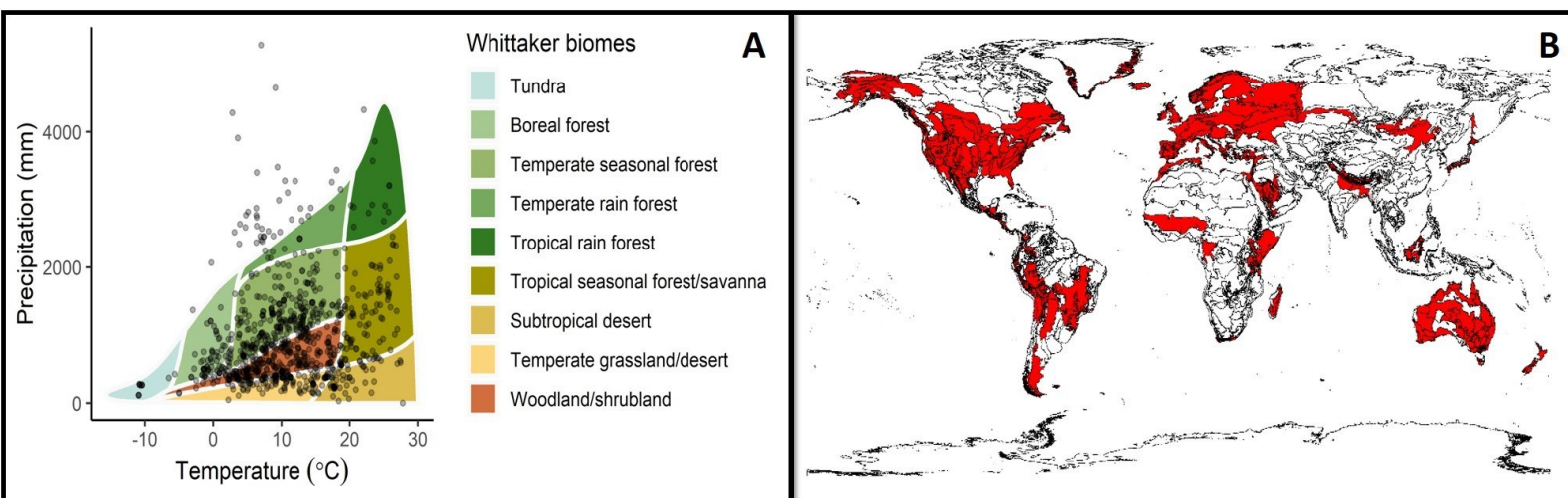


Figure 3. A. Whittaker biome diagram showing the distribution of all existing photo points. B. A map of ecoregions that displays currently represented ecoregions in red.

Repeated plot surveys over short time intervals (1-2 years)

by Martin Diekmann and Leonie Mazalla

Hello dear IAVS community,

my name is Leonie Mazalla, I am currently doing my PhD in the lab of Martin Diekmann in Bremen. My PhD project revolves around re-survey studies and their methodology. The study we are proposing here requires a lot of data, which is surely already sitting around somewhere. I would be very happy if we together could realise it and gain more insights into the “true” temporal variability of vegetation!

All contributors are, of course, invited to co-author the resulting publication.

Project idea

Dissimilarity indices (e.g. Sørensen-Index) are widely used to quantify the change in vegetation (floristic composition) between two or more plots, separated by either time or space. However, interpreting the ecological meaning of a value of e.g. 50 % dissimilarity is not easy - does this represent a true directional change in species composition or does it only reflect the “natural” stochasticity or methodological artefacts (e.g. observer/relocation error)? Magnitudes of observer or relocation errors have been identified in several studies (e.g. Morrison 2016, Verheyen et al. 2018). We would like to quantify the random temporal differences in vegetation composition in absence of directional changes. Year-to-year dissimilarities can serve as estimates for this “base-turnover”, and we expect the turnover to depend on several factors such as habitat type or plot size.

Data requirements

We are looking for plot-based relevé data that fulfil the following requirements:

- repeated relevés of the same plot, surveyed no more than one or two years apart (while it does



not matter whether the data are from 2018/19 or 1918/19)

- at least 10 relevés with a complete list of vascular plants (vernal species may be absent)
- plots being truly permanently marked to eliminate relocation error (e.g. not solely based on GPS)
- no obvious changes of environmental conditions between the surveys, e.g. no management change, se-

vere drainage or ongoing succession (global change effects can of course not be ruled out, but we except these to be minor over one or two years)

control plots of experimental set-ups are explicitly welcome

Vegetation type:

All vegetation types are welcome.

Geographical scope:

All locations are welcome.

Necessary metadata:

- vegetation type or syntaxon
- (approximate) location, at least the country, but the more accurate the better
- dates when the plots were taken (at least month and year)
- plot size
- observer (not necessarily full name - important: were the plots recorded by the same person?)

- method used for permanent marking

Optional metadata:

- any soil or topographical data
- management, conservation status

Time frame:

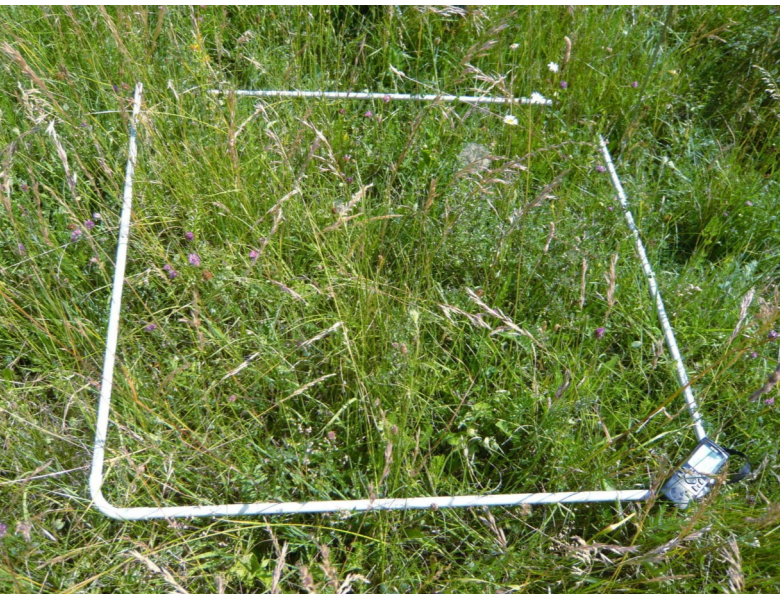
We would like to start the analysis in September 2021 and kindly ask for you to contact us until then.

Contact: mazalla@uni-bremen.de

References

Morrison, L. W. (2016). "Observer error in vegetation surveys: a review". In: *Journal of Plant Ecology* 9.4, pp. 367-379.

Verheyen, K., M. Bažány, E. Chečko, M. Chudomelová, D. Closset-Kopp, P. Czortek, G. Decocq, P. De Frenne, L. De Keersmaeker, C. Enríquez García, et al. (2018). "Observer and relocation errors matter in resurveys of historical vegetation plots". In: *Journal of Vegetation Science* 29.5, pp. 812-823.



The same patch of a semi-arid grassland in northwestern Germany – two different years



IAVS



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Eddy van der Maarel with a group of vegetation scientists during the fieldwork near Uppsala, Sweden

Contact IAVS

International Association for Vegetation Science
Business Office
MCI | Benelux
Boulevard du Souverain 280
1160 Brussels - Belgium

www.iavs.org
admin@iavs.org



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