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Do you know why the most prestigious award provided by the IAVS is named after Alexander von Humboldt? Do you know how he contributed to the current shape of vegetation science and what his message to currently practicing vegetation scientists would be? The answers can be found in the article prepared by Martin Diekmann.

The lecture given during the Annual Symposium in Pirenópolis by Mike Palmer on writing manuscript reviews in vegetation science was a big success. It was especially appreciated by young scientists with less experience in this field. Because of the strong interest, we decided to publish his lecture in the IAVS Bulletin and thus make it available to those members who were unable to participate in the meeting in Brazil.

If you plan to come to the Annual IAVS Symposium in Palermo (Sicily), do not miss the article by Riccardo Guarino with important dates and a review of the session themes (both special session and those comprising invited papers). This will help you to focus your personal oral or poster contributions. If you have not yet decided whether to attend the Symposium, we hope you will be inspired and accept the invitation to meet together and celebrate the beauty of plant life and the creativity of vegetation scientists from around the world.

For those planning ahead to 2018, Dave Roberts and Peter Minchin have prepared an invitation to next year’s IAVS Symposium in Montana, USA.

The article by John Janssen and John Rodwell describes achievements of the recently completed project on vulnerability assessment of European habitats.

The Forum section is devoted to the news from IAVS members. For this issue, an announcement of a newly-established journal on ecosystem ecology has been prepared. There is also the invitation to join an enthusiastic group of South-American vegetation scientists who have established a new IAVS regional section. They hope this will facilitate research and conservation of the unique ecosystems of their continent.

Thanks to all of you who contributed to the issue!

Looking forward to meeting many of you in Palermo,

Monika Janišová
Editor of the IAVS Bulletin
Alexander von Humboldt and Vegetation Science

Martin Diekmann

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Over the New Year holidays I read Andrea Wulf’s “The Invention of Nature”. This wonderful biography remembers the extraordinary life of the Prussian explorer and scientist Alexander von Humboldt (1769-1859). Although being perpetuated in the names of natural phenomena across the world (for example, the Humboldt current, the Humboldt bay in California, the Humboldt penguin [Spheniscus humboldti] on Galapagos and the Andean oak [Quercus humboldtii]), his discoveries and visions are largely forgotten. This does not give justice to his scientific work that was outstanding and prepared the path for countless other scientists and discoveries, including Darwin’s On the origin of species. Vegetation science did not exist as a separate branch of science in the 18th and 19th century, but many of the themes at the heart of vegetation science were already brought to our attention by von Humboldt. When the International Association for Vegetation Science some years ago decided to bestow an award there was general agreement to call it “Alexander von Humboldt medal”, in memory of the achievements of von Humboldt as a plant geographer in its broadest sense. What makes Alexander von Humboldt so famous and so important for vegetation science, and why should we remember him especially in our endeavor to preserve the ecosystems and species of our planet?

Alexander von Humboldt was born in Berlin on 14 September 1769 to a wealthy Prussian family. His elder brother Wilhelm became a famous linguist and Prussian minister, being the conceptual father of the “modern university” - uniting research and teaching - and a driving force behind the foundation of the University of Berlin (now called Humboldt Universität). Alexander von Humboldt’s father died at an early age, his mother was emotionally distant, but ensured an excellent education of her sons by hiring some of the best teachers in the country. Her ambition was to make Alexander a civil servant, and in fact he started to study finance at the University of Frankfurt (Oder). After several intermediate stops at other universities he graduated from the Technische Universität Bergakademie Freiberg in 1792 and began to work as a mine inspector for the Prussian government. At this time he developed two personality traits that shaped him all his life: on the one hand his interest for all kinds of living and non-living things in nature, and on the other hand his concern for the social and political situation of the people. One of his first publications was an article about the cave vegetation of the mining areas around the city of Freiberg (Flora Fribergensis Specimen). During these years von Humboldt met with and became a friend of Johann Wolfgang von Goethe who shared his interest in nature and who inspired him to write scientific papers and books in a popular and poetic (even romantic) way. After the death of his mother von Humboldt started to make plans for a major expedition to other continents. After a period of disappointing setbacks (during which, however, he met Aimé Bonpland, his travel companion and lifelong friend), he finally got a permission from the King of Spain, granting him access to the American parts of the Spanish empire.

Von Humboldt’s travel started on 5 June 1799. The journey led him via Tenerife to several regions in South and Central America (nowadays Venezuela, Cuba, Ecuador, Mexico) and finally to the United States of America where he met the president Thomas Jefferson. He reached Europe again after more than five years on 3 August 1804. Much of his remaining life, which he spent mostly in the cities of Paris and Berlin, von Humboldt dedicated to publishing the results of his expedition to South and Central America. The quantity and thematic breadth of his publications are unprecedented. Many of his books were voluminous and included splendid and artistic drawings and copper etchings. His journey to America had already made von Humboldt famous, but the many subsequent publications consolidated his reputation as one of the leading scientists in the world. Von Humboldt’s life, however, was conflicted: being in the diplomatic service of the rather authoritarian Prussian kings for decades and financially dependent upon them, he nevertheless advocated democracy and was a fierce opponent of slavery. Apart from his travel to the Americas, von Humboldt made only one larger expedition, to Russia in 1829. His dream to travel to India, the Himalayas and Tibet never came true, because the British East India Company - probably being afraid of his enthusiasm for democracy and social equality - never authorized the trip. He spent most
of his later years in writing up the Kosmos, a book in several volumes based on a series of lectures at the University of Berlin that brought together all his multifaceted research, looking at nature as a global force in which everything is interconnected. Alexander von Humboldt died in Berlin on 6 May 1859.

Essay on the geography of plants

One of the earliest and most famous publications of von Humboldt was the Essay on the geography of plants, which can be considered the starting point of plant geography and vegetation science. An appendix of this book is the magnificent Tableau ("Naturgemälde") of the volcano Chimborazo in Ecuador, summarizing the observations and impressions of von Humboldt and his fellow travelers during their visit to this mountain in June 1802 (Fig. 1). At that time the Chimborazo was considered the highest mountain in the world. Because of a deep fissure in the glacier covering the top, von Humboldt’s group never reached the peak, but nevertheless an altitude of almost 5,900 m, higher than any other person before in history! After the excursion von Humboldt sketched the first draft of the Tableau as a cross-section of the mountain, including detailed information about elevation, temperature, humidity, atmospheric pressure and the altitudinal distribution of plants and animals. Humboldt recognized that plant species with similar traits formed distinct belts in response to the climatic differences between the different elevations. With his experience from other volcanoes in South America and elsewhere, he also recognized that these belts were recurring at other mountains at similar elevations. He noted that species typical of these belts resembled those found in other parts (vegetation zones) of the world with similar climatic conditions. The discovery that plant species and their attributes were closely associated with specific climatic (and edaphic) conditions was revolutionary and allowed a new understanding of ecosystems (a term not known in the beginning of the 19th century) as an intricate network of plants, animals, soils and climate. Whereas most other naturalists at that time were concerned with classification and taxonomy without paying attention to the environment, von Humboldt in his Essay on the geography of plants emphasized the interplay between organisms and their abiotic environment and proposed a holistic view of nature. This book laid the foundation of ecology.

Given his knowledge of the relationship between the vegetation and the environment, it is not surprising that von Humboldt also recognized how changes in the environment could affect plants, animals and humans. During his travels at the Lago de Valencia in Venezuela von Humboldt described how the clear-cutting of forests had increased the run-off of water and how the irrigation of fields further contributed to a lowering of the water table, impacting the vegetation, the productivity of the land, and even the local climate. Humboldt later repeatedly warned against the exploitation of nature and the depletion of resources. He knew that ecosystems were fragile and that the different parts were not independent of each other. It is ironic that, had von Humboldt been

Fig. 1. Von Humboldt and Bonpland at the foot of the volcano Chimborazo in Ecuador, 1802. Painting by Friedrich Georg Weitsch (1810). Source: https://commons.wikimedia.org/wiki/File:Humboldt-Bonpland_Chimborazo.jpg#/media/File:Humboldt-Bonpland_Chimborazo.jpg
alive now and visited the Chimborazo again, he would see a different mountain, with now widespread agriculture at its foot, vegetation limits moving up and much less snow on its top (compare Figs. 1 and 2, Fig. 3). In their excellent publication, Morueta-Holme et al. (2015) compared the distribution limits of glaciers, plants and vegetation on the mountain between 1802 (using the information provided in von Humboldt’s Essay on the geography of plants and Tableau) and 2015, providing strong evidence for the effects of climate change (Fig. 4). Von Humboldt’s holistic view of nature and concern for the environment influenced many other naturalists of the 19th and early 20th century, such as Henry David Thoreau, John Muir and Ernst Haeckel. As a scientist, von Humboldt was ahead of his time, and vegetation science would not be the same without him.

References


Manuscript reviews for IAVS journals fill primary two functions: to advise the editor on the suitability of a submitted article for publication, and to offer advice to authors for possible improvement. Indirectly, reviews provide feedback to editors as to how the journal is perceived by peers.

It is easy to find good advice online or in print on how to write good reviews of scientific papers (e.g. https://violentmetaphors.com/2013/12/13/how-to-become-good-at-peer-review-a-guide-for-young-scientists/, http://www.britishecologicalsociety.org/wp-content/uploads/Publ_Peer-Review-Booklet.pdf, and Waser et al. cited later). Also, Wiley (the publisher of our journals) has its own advice online (http://olabout.wiley.com/WileyCDA/Section/id-828028.html). The purpose of this note is not to duplicate advice given elsewhere, but instead to focus on issues that are particularly relevant to vegetation science and IAVS journals. I will briefly address why one should review manuscripts, how referees are chosen, how to write effective reviews that assist the editor, whether or not to sign reviews, and how to improve our journals through the review process.

Why review manuscripts?

The person writing a review of a manuscript is variably referred to as a reviewer, peer reviewer, or referee. Here, I will use the term ‘referee’ because of its consistency with usage in IAVS journals and to avoid confusion with writers of review papers.

There are a number of reasons to referee papers for IAVS journals, benefiting both the referee and others. Benefits for the referee include increasing the knowledge of the discipline. Also, improving familiarity with the review process allows a referee to anticipate concerns with their own writing, and hence become a better author. Service as a referee enhances one’s resume, and also improves one’s visibility to leaders in the discipline of Vegetation Science.

While reviewing can often seem like a burden, it is widely considered a part of one’s ‘civic duty’ as a scientist. It is appropriate for referees to review as many reviews as one receives on his/her own manuscripts, on average. Providing quality reviews helps influence and advance the discipline. In particular, early career referees and referees from other disciplines help keep the journals from stagnating.

How does a scholar become a referee? The most important selection criterion is demonstration of competence and expertise, both in the literature and in professional meetings. If you wish to announce your availability for service, you can certainly contact an editor or member of the editorial board, describing your interest and expertise. The editorial staff is listed in the journal issues as well as on the journal web pages (http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1654-109X/homepage/EditorialBoard.html, http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1654-1103/homepage/EditorialBoard.html). It is also a good idea to remind your advisors or mentors (be they formal or informal) of your inclination to be a referee – scientists unable to perform a review are often asked to suggest another name to serve in their stead.

A common misperception is that referees must be experts in all aspects of the manuscript in question. It is often the case that a referee is selected because of expertise in one aspect of the study – e.g. methods, theory, or a similar study system. Editors may solicit the opinion of a member of the general ‘vegetation science’ community to assess overall level of interest and importance, or understandability. A good paper in an IAVS journal should be accessible to the majority of IAVS membership.

Writing an effective review

As mentioned previously, there are multiple sources of advice for writing good manuscript reviews, and I will thus not dive into this topic in depth. I will instead briefly point out some useful items from Nickolas M. Waser, Mary V. Price, Richard K. Grosberg (1992). Writing an Effective Manuscript Review. BioScience 42: 621-623. While the paper isn’t recent the advice still pertains:

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• Take a nonconfrontational attitude.
• Assume that you and the author share a common enterprise.
• Write to convince the author.
• Don’t assume that your assignment is to ‘sleuth out crimes’.
• Assume that the author knows the study system.
• Don’t hold the author to an impossible ideal.
• Pinpoint the good as well as the bad.

Note that there is no one correct way to write a review! However, a common format is as follows:

• Start with a sentence that indicates what paper you are reviewing (e.g. the manuscript number, or authors names).
• Say something positive and not trivial about the paper, if possible (in a sentence).
• Provide an overall summary of your opinion of the paper, without a verdict (even if your verdict may be obvious by the context).
• Provide major comments, both positive and negative, and don’t be afraid to say you don’t understand things. It is the job of authors to make their writing understandable to vegetation scientists.
• Then provide minor comments, ideally referring to manuscript line numbers. Provide a way to fix problems, if possible – although it is not your job to fix every minor error.
• Comments in the manuscript itself are optional (and a little bit harder for editors to deal with). All major comments should be fully presented in the main comments to the editors and authors, and not solely in the manuscript.
• Write the review as if to the editor. It does not serve as a letter to the authors, even if the authors are meant to eventually see what you have written. It is the editor’s responsibility to pass them along.

How long should the review be? Again, there is no simple answer. It needs to be substantial enough to prove that you took the review seriously, and to adequately explain your main arguments. As with writing manuscripts, excess verbiage should be avoided.

Aim for high standards with respect to language, grammar, and spelling. While it is true that reviews are seldom as carefully worded as published manuscripts, proper attention to your writing demonstrates that you are taking your task seriously. It puts editors in a bind when a poorly written review criticizes the writing style of the authors.

Should you sign your review? A review should always be written with the degree of integrity and fairness that one shouldn’t be ashamed to sign.

However, there are reasons to prefer anonymity. Thus, the decision to sign is a highly personal. Come up with your own consistent criteria. Some referees always sign, and some never sign. Some sign on a contingent basis – e.g. in cases where knowledge of the referee’s identity provides context for the content of the review. Also, it may be obvious by the nature of your comments who you are, or what your institution is – in which case the pretext of anonymity will serve no purpose. Signing only positive reviews is frowned upon.

What editors need

What is often overlooked is that your job as a referee is to assist the editor as much as it is to assist the author(s).

Remember reviews are advisory to the editor and not final verdicts. There will be other referees, and the editor will need to balance different reviews – that may be either subtly or blatantly different from each other (although it is often surprising how similar opinions tend to be, on average).

Thus, to repeat, DO NOT provide your verdict in your comments to the author.

Also, make sure your statement to the editor is consistent with that to author AND the checkbox answer of your opinion. Editors are quite frustrated when only positive things are communicated to the authors, while crucially negative items are communicated directly to the editor. Note that if there is nothing that you wish to specifically say to the editor, you can simply write ‘see below’ in the form.

Make sure your recommendations are as specific as possible. “Methods are not clear” and “paper is too long” are not specific enough.

Remember to review supplementary materials, if submitted. Referees tend to pay less attention to these than they should, although they are often essential parts of the paper (indeed, referees should help determine how essential they are).

Communicate potential Conflicts of Interest to the editor. For example, you may have had past collaborations or other interactions with the authors that might affect (or might appear to affect) your objectivity. Or you might be listed in the acknowledgments. If the conflict is extreme (e.g. the author is an advisor, a family member, a close colleague from the same department, or a collaborator on a current research project) then you should decline to review the paper.

It is important that you stick to deadlines. If you must have extra time, editors may have the flexibility to grant it. But whenever possible, advise the editors of the need for extra time well in advance.
Editors will typically invite referees to review resubmissions of manuscripts already reviewed. Please, whenever possible, accept such invitations. The editors will want to know whether the authors have revised the manuscript to your satisfaction. Note that authors (and perhaps not even the editors) may not agree with your recommendations, but they should have made some efforts to respond and clarify – if not in the manuscript, at least in the cover letter. Your review of a resubmission does not need to be very long, but it is nonetheless critically useful.

**Special considerations in relation to our journals**

One of the functions of the review is to assess not only the quality of the submitted paper, but also the suitability for our journals. Thus it is important for referees to understand the scope of our journals. Quoting from the journal pages:

The *Journal of Vegetation Science* (JVS) publishes papers on all aspects of plant community ecology, with particular emphasis on papers that develop new concepts or methods, test theory, identify general patterns, or that are otherwise likely to interest a broad international readership.

*Applied Vegetation Science* (AVS) focuses on community-level topics relevant to human interaction with vegetation, including global change, nature conservation, nature management, restoration of plant communities and of natural habitats, and the planning of semi-natural and urban landscapes. Vegetation survey, modeling and remote-sensing applications are welcome.

The editors, perhaps in consultation with editorial board members, will have already made a determination that the paper should at least be considered for JVS or AVS. However, referees may also be asked to weigh in on the suitability of the subject. This is particularly relevant because many papers are on the border between ‘pure’ vegetation science and an allied discipline. Indeed, some authors may not even have a clear idea of what vegetation science is. Referees should also feel free to recommend whether a paper submitted for consideration in JVS is better for AVS, and vice versa.

Vegetation Science has a rich history, derived from separate developments of ideas in different regions. Respect such regional tradition, but transcend it. For example, a paper that relies on regionally derived terminology, or regionally important research protocols, can be perfectly fine for an international audience if the relevance for vegetation as a whole is clear, and the terms are well defined and placed in the context of the discipline as a whole.

Likewise, respect the style and the emphasis of the authors (while insisting on correct use of language). Terms in our field are used in various ways – so give the author some allowances. Subtly varying definitions should be tolerated as long as they do not lead to fundamental misunderstandings.

On the other hand, insist on Latin names for plants. While it may be acceptable to refer to vegetation as an ‘oak forest’ or a ‘palm savanna’, it is not generally acceptable to use vernacular names such as oaks, hackberries, saltbush, etc.

In your review, avoid irony, puns, colloquialisms, and humor. These may be misinterpreted due to language issues. Levity in the review might also be considered as hostile or condescending.

The portal used by our journals, ScholarOne, works fairly well. However, sometimes special cases emerge and its use is counterintuitive. The editors and journal staff are very good at helping you navigate the system. Do not hesitate to contact them if you have problems, questions, or suggestions.

After receiving your review, the editors rate its quality on a 1-5 scale which you don’t see. You can sometimes get some hint as to the quality of your review when the editor provides the verdict to the author(s). However, it is perfectly fine for you to contact the editor for feedback on the utility of your review.

**A concluding statement**

No journal consists entirely of flawless fascinating papers. However, exciting papers that have flaws tend to be more negatively reviewed than boring but unproblematic papers. Papers that introduce new ideas or different perspectives tend to be well-cited and often discussed, and enhance the visibility of our journals – even if they have problems. Thus, referees are encouraged to keep an open mind, and to seriously consider manuscripts with which they disagree. The recommendations of referees largely determine the vitality of our journals, and hence the dynamism of the discipline of vegetation science.

*Acknowledgments: I thank Justin Dee, Meelis Pärtel, Milan Chytrý, Alicia Acosta, José Paruelo, Valério de Patta Pillar, and Monika Janišová for helpful comments.*
Welcome to Palermo

60th Annual Symposium of the International Association for Vegetation Science
20–24 June 2017 Palermo, Italy

Plant species traits and responses to environmental drivers influence not only the many possible patterns of community assembly, but also the overall process by which one becomes a vegetation scientist. In this sense, every IAVS symposium is not only a celebration punctuated by lectures and testimonies by which scholars from all over the world learn what is under the limelight of vegetation science, but also an important incubator of new vegetation scientists.

The organizers of the 60th IAVS Symposium hopefully await many inspiring contributions to nourish a generic interest in Vegetation patterns in natural and cultural landscapes, in order to convert it into a true and insane passion.

“Vegetation patterns in natural and cultural landscapes”

Important Dates

- Deadline for IAVS travel grant applications: 13 March 2017 (Global Sponsorship Committee decisions announced by 7 April 2017)
- Deadline for abstract submission: 28 April 2017 (15 March 2017 for travel grant applicants)
- Deadline for early registration with reduced fees: 14 April 2017
- Deadline for registration with regular fees: 12 May 2017
- Hotel Reservation Deadline: 20 May 2017
Ordinary Sessions

Land-use patterns and vegetation in cultural landscapes

Plant species and vegetation are the best biological descriptors of landscapes. Approaches that integrate biological and cultural perspectives are probably best suited to understand and manage most of the biodiversity persisting in landscapes characterized by a long history of human influence.

Green infrastructures and vegetation science

Vegetation science can help in designing, establishing, managing and monitoring green infrastructures, from transnational ecological networks up to urban green roofs, seen here as stepping stones for biodiversity and metacommunity dynamics in urban districts.

Functional diversity along environmental gradients

Land uses and their associated disturbances influence species richness, functional diversity and ecosystem processes in a wide array of different ecosystems. However, there has been little testing of how field-based functional diversity measures vary across environmental gradients of disturbance and productivity.

Vegetation, traits and ecosystem services valuation

Scientific interest in valuing what was not yet named “ecosystem services” emerged in the late 1960’s both as a concern for ecologists and as a theoretical challenge for economists. Since that time, the definition of meaningful and operational indicators to valuate ecosystems services became a challenging topic. Maybe vegetation traits and/or plant functional types could also offer practical operating tools...

Vegetation dynamics and human-induced successions

Human activities can have a strong impact on the vegetation and the way it changes. These changes are known as human-induced successions, which are often unexpected, unforeseen, unconsidered but sometimes seriously detrimental to biodiversity and to the benefits that people derive from ecosystems.

Grasslands, land uses and environmental changes

Grasslands include a wide range of ecosystem types, from humid prairies to arid steppes, up to the savanna biome. Their temporal stability is not ensured by a strong demographic inertia, particularly in annual-rich communities. So, grasslands are very responsive ecosystems and the question is: how can we manage grassland biodiversity in the transition to new scenarios?

Invasive species: past, present and future trends

Non-native plant species that become invasive are a multi-faceted phenomenon of global change. The influence of local vegetation patterns, their configuration/fragmentation, historical legacy of land-use changes on biological invasions still need to be better understood.
Habitat monitoring and conservation assessment

Habitat monitoring is important for assessing the threat and conservation status of species and protected areas. This can be done at global and regional scales, with the vegetation as a key component of habitat-based indicators.

Vegetation for conservation planning

Conservation planning is a major research area to ensure optimized strategies in the long term preservation of biodiversity. Vegetation is the major structural and functional component of most terrestrial ecosystems and also has important interactions with abiotic ecosystem functions, such as the hydrological cycle. Therefore, the role of vegetation in conservation planning is dual, because it represents a target of conservation management in terms of species and habitat but is also a proxy or driver of other conservation targets (e.g. animals). Consequently, the role of vegetation science in conservation planning is fundamental. This session is a devoted discussion of the present and future trends in using vegetation data for conservation planning, in an effort to establish new ideas and perspectives for vegetation science.

Vegetation classification, vegetation management and restoration ecology

The aim of every classification is to move from a continuous system to a discrete system. It is a way to simplify a complex reality by creating entities (vegetation types), that are crucial for map-making, management, knowledge exchange, restoration ecology, and legal purposes. Many possible classifications exist, according to the context and aims. Moreover, conservation is scale-dependent, from geographic and time perspectives. Therefore the choice of the right vegetation classification at the right scale is a key issue.

Plant diversity patterns across biomes, habitats and communities

Understanding of the factors driving plant diversity patterns is of great importance not only for the scientific community but also for conservation. Do we have enough high-quality data to reveal general biodiversity patterns and how they change in space and time?

Vegetation diversity on islands

Islands represent model ecosystems for investigating evolutionary, biogeographical and also ecological processes. Although representing a minor proportion of the planet’s area, islands host a significant amount of biodiversity. Plant communities growing on islands present important features, such as the presence of endemic species, special gradients of diversity and peculiar functional characters. However, island biota have experienced major transformations because of anthropogenic pressure. The study of plant community ecology and its long-term dynamics on islands is therefore a major scientific issue in the...
near future, in the light of understanding how island vegetation diversity can be preserved in the long term. This session will make an up-to-date synthesis of the current trends in research on island vegetation.

Ecological informatics and facilitating vegetation syntheses

The emerging availability of large quantities of species co-occurrence, site attribute, and taxon attribute data is transforming the study of ecological communities. At the same time, large data sets of heterogeneous origin pose increasing challenges, both technical and scientific. Advances are rapidly being made in data exchange, overcoming barriers to integrating vegetation plot data (e.g., validating and standardizing geo-coordinates and plant names), developing remedies to overcome bias and uncertainty in existing data, and in the compilation of global and supranational vegetation plot databases. How best to motivate data sharing continues to be an important topic. This session is also open to appropriate software demonstrations.

Macroecological analysis and modeling of vegetation patterns

Spatial modeling is often used to relate sparse biological survey data to remotely derived environmental predictors. Outputs from vegetation modeling include predictive mapping of community types (locations with similar species composition), functional units (groups of species with similar functions), gradients of compositional variation and various macro-ecological properties.

Special Sessions

Long-term changes of fluvial landscapes: evolutionary trajectories of vegetation patterns
Convened by Maria Rosário Fernandes & Francisca C. Aguiar

Riparian and aquatic vegetation patches are physical ecosystem engineers in fluvial landforms and associated habitats that strongly react to natural and human pressures. Main causes of changes are related to the longstanding effects of flow regulation, deforestation, urban and agricultural land use in floodplains. Common ecological responses to continuous disturbance include reduction of connectivity and diversity of woody vegetation, homogenization of riverine areas, loss of pioneer phases, and encroachment, among others. Also, the effects of a drier/warmer and more unpredictable climate may also contribute to shifts in species composition, such as potential increases in alien species and succession stages towards more dominant mature-forest and drought-tolerant stages.

This special session aims to gather information from studies using temporal analyses addressing the response of fluvial vegetation patterns to distinct natural or human-induced alterations. Diverse
scales and distinct methodologies will be tackled, from the catchment-to-reach level, to the field-to-image analysis, bringing together diverse scientific approaches, such as the planform analysis in historical maps, patch dynamics development in process-based models and cause-effect relations in empirical analyses.

Rethinking biomes – towards a consistent high-level classification of global vegetation
Convenered by Jürgen Dengler, John Hunter & Scott Franklin

Studies on global vegetation and biodiversity patterns as well as global change effects on vegetation and ecosystem service provision need a well-defined, meaningful set of main types of climax vegetation. Various such global systems of biomes, zonobiomes or ecozones have been proposed by geobotanists during the past century, based on expert knowledge and coarse in resolution. More recently biome systems with finer resolution have been developed for countries or continents, however, they are typically not consistent with any of the previous global systems. In this session we thus welcome presentation of biome systems and their underlying methodology, conceptual contributions that aim at defining what a biome is and finally methodological proposals how a better world biome map could be derived using present-day GIS databases of climate and other factors, remote sensing products and large vegetation-plot databases.

Remote Sensing for Vegetation Science
Convenered by Ducco Rocchi & Sebastian Schmidtlein

Whatever the vegetation property being investigated, from the distribution of a certain species or group of species, traits and functional types to variability in space and time, field sampling inevitably presents a number of issues, such as the development of a robust sampling design, the definition of the statistical population being sampled, and the time and cost of performing sampling in the field. This is particularly true when considering spatially complex ecosystems. It is practically impossible to gather exhaustive information about the geometry of environmental and species variation over space at a certain time. However, remote sensing is a powerful tool for obtaining continuous information about these targets, since it guarantees whole spatial coverage in a short period of time. The aim of this session is to discuss the potential of remote sensing for vegetation science, especially under the light of plant species modeling and the prediction of biodiversity changes in space and time.

Theory-based habitat conservation and restoration
Convenered by Péter Török & Aveliina Helm

The involvement of ecological theory in habitat conservation and restoration has significantly increased in the past decade. However, despite the fact that the field of restoration ecology has grown academically strong, there are still visible gaps between the advancing discipline of theoretical ecology and current approaches of habitat
It is necessary to improve joint thinking by improving the inclusion of recent ecological theories in practical habitat conservation and restoration, as well as by introducing a practical-problem-driven theoretical research. The session aims to (i) improve linkages between theoretical ecology, restoration and conservation strategies; and to (ii) summarize the practical needs of restoration and conservation that need further support from theoretical ecology.

Faces of hidden diversity: Dispersal and regeneration traits in vegetation dynamics
Convened by Orsolya Valkó, Péter Török, Béla Tóthmérész, Alessandra Fidelis & Borja Jiménez-Alfaro

The regeneration niche, seed dispersal in space and time (seed rain and seed banks), germination or dormancy, represent major but often unexplored factors of species assembly and functional diversity. The aim of this special session is to discuss the role of seed traits in vegetation patterns, the dynamics of plant communities and restoration practice. Studies introducing theoretical and practical aspects of trait-based approaches for understanding colonization and establishment of species in natural or semi-natural communities are welcome.

Vegetation patterns in relation to multiscale levels of ecological complexity: from associations to geoseries
Convened by Farid Bensettiti, Frédéric Bioret, Jorge Capelo, Dan Gafta, Franco Pedrotti, Daniel Pablo de la Cruz Sanchez Mata

Vegetation mosaics issuing from the interplay of multiscale succession and zonation processes have been formally described by Continental European phytosociologists ever since the early 70’s. Vegetation mosaics were then defined as the object of Landscape Phytosociology. Within the scope of contemporary Vegetation Science, the subject has developed into a worldwide focus on beyond-community upper complexity levels. Geobotanical concepts corresponding to several types of succession and zonation phenomena, in relation to environmental determinants, to disturbance regimes (both natural and human-induced) and to ecological history have been thoroughly proposed. Fruitful lines of contemporary and future research are those addressing the many instances of phytocoenosis, vegetation series and geoseries as reference models for manifold approaches in Vegetation Science. Such conceptual synergies may range from geobotanical typology, as in itself, a dynamic habitat typology almost-readily applicable to Nature management and ecosystem mapping to those envisaging complex approaches: - functional, evolutionary,
macroecological. In this session, we wish to pursue such approaches and new ideas are most welcome.

Suggested topics: i) Proposals on geobotanical models: conceptual stability, completeness, and systematics; ii) Specific methodological issues of field sampling, numerical treatment and databasing of symphytosociological data; iii) Biodiversity measures at different scales in relation to associations, vegetation series and geoseries; iv) Functional classifications of vegetation mosaics based on geobotanical models; v) Vegetation landscape interpretation in several complexity-level applications and symphytosociological vegetation mapping; vi) Territorial case-studies in Landscape Phytosociology.

For further information on the thematic sessions, pre- and post-symposium excursions, and more, please refer to the symposium website:

http://iavs.org/2017-Annual-Symposium/Home.aspx

Riccardo Guarino
Organizer of the 60th IAVS Symposium
The 61st Annual Symposium of IAVS will be held in Bozeman, Montana from July 23–27, 2018. The theme of the symposium will be *Natural Ecosystems as Benchmarks for Vegetation Science*. The landscape of the Rocky Mountains is a complex mosaic of ecosystem types – including alpine tundra, grasslands, shrublands, forests, and wetlands – that are home to an amazing diversity of species. The region surrounding Bozeman includes large areas with relatively low human impact, including famous National Parks like Yellowstone, Grand Teton, and Glacier. The symposium theme highlights the important role that areas like this around the world have played in the development of vegetation science, allowing us to disentangle the effects of climate, geology, and other natural factors in shaping vegetation patterns from the influence of humans. The symposium will be hosted by Montana State University and academic sessions will be held in a modern conference center with excellent facilities. We are planning a diverse and vibrant scientific program with plenary speakers, workshops, contributed oral sessions, and poster sessions. Proposals for special oral sessions and workshops are welcome. Mid-week excursions to a range of natural and cultural sites will be included in the registration fee. Planning is well under way for a pre-symposium field trip to Yellowstone and Grand Teton National Parks, and a post-symposium field trip to Glacier National Park and the Crown of the Continent, each 4–5 days. We extend a warm invitation to all members of IAVS to join us in Bozeman in 2018.
Red List of European Habitats

For the first time, a comprehensive assessment of European habitats has been carried out, providing a clear picture of the state of the 257 marine and 233 terrestrial/freshwater habitats in 35 countries across Europe. Over 150 vegetation experts, of which many are EVS and IAVS members, have contributed their knowledge and expertise to produce an assessment of the level of threat of European habitats. The European Red List of Habitats was funded by the European Commission and coordinated by a partnership formed by Wageningen Environmental Research (former Alterra), IUCN, NatureBureau and consultants Susan Gubbay and John Rodwell.

Following the recommendations of a feasibility study (Rodwell et al. 2013), in the project the habitat typology of EUNIS was used at about Level 3, with adaptations in case of ambiguity, overlap or too broad definitions. A bottom-up data flow was applied, in which information on trends in habitats from individual countries were synthesized into Pan-European trends and status for each habitat. The criteria and categories of the IUCN Red List of Ecosystems (Keith et al. 2013) were applied in a slightly adapted form, to assess the critically endangered, endangered, and vulnerable habitats.

Of the terrestrial habitats over a third of all land habitats is currently under threat (Fig. 1): the highest percentage of red-listed types is found in mires and bogs (85%). Over half of grassland habitats are threatened (53%), and also the European freshwater and coastal habitats have high percentages of threatened habitats (46% and 45% respectively). Forests, heaths and rocky habitats have fared better, but specific types are still of great concern.

Of the threatened European terrestrial habitats four are in the highest category, critically endangered. These are: the wooded grasslands and meadows of the Baltic region, the sandy steppes of Hungary and surrounding regions (Fig. 2), the grasslands on the summits of the volcano of Madeira, and Extensive managed arable fields (Fig. 3).

European habitats are declining in extent and quality for many reasons, and many threats are having increasingly large impacts. Intensive farming and abandonment of traditional grazing lands, drainage and pollution, invasion of alien plants and animals, urbanization and associated infrastructure development all of these continue to pose dangers to terrestrial habitats. Some damaging effects of climate change are already apparent, especially in snow and ice dominated terrestrial systems.

The European Red List of Habitats provides an entirely new and all-embracing tool to review commitments for protecting and restoring the land and seas of Europe. It covers a much wider range of habitats than those legally protected under the Habitats Directive and will help us measure progress towards the targets of the EU2020 Biodiversity Strategy. Besides the final report, many background data is made available for the wider public.

Further information and the final publications of the Red List can be found at: http://ec.europa.eu/environment/nature/knowledge/redlist_en.htm

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Fig. 1. Percentage of threatened terrestrial/freshwater habitats (red, orange and yellow categories) in the countries of the European Union. The percentages threatened habitats are slightly lower if countries outside the EU (Iceland, Norway, Switzerland, Balkan countries) are included in the assessment.
References


Fig. 2 (above). Sandy steppes in Hungary.

Fig. 3 (right). Extensively managed arable field in Romania.
We would like to inform you about the new Russian Journal of Ecosystem Ecology, which celebrates the first anniversary of its establishment.

The Russian Journal of Ecosystem Ecology is an international peer-reviewed online periodical, published in Russia. The articles are published in English and Russian languages. Periodicity: 4 issues per year. Web site: http://rjee.ru

The journal’s subject area embraces problems of structure and functioning of terrestrial and aquatic ecosystems; ecosystem dynamics; estimation of biodiversity and its importance in structural and functional organization of ecosystems; historical ecology; ecology and environmental protection, ecosystem nature management, modeling in ecology and other problems regarding ecosystem ecology to a wide extent.

The journal publishes surveys, original research articles, theoretical works, methodological works, discussions, brief reports, reviews, information on past conferences, annotations, methodological materials, scientific reports on expeditions, descriptions and analyses of experiments in biodiversity restoration, and summaries of results of research in protected natural areas.

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The welcoming remarks from the editor-in-chief Prof. Olga V. Smirnova are available at: http://rjee.ru/en/welcomingremarks/

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Since the last Annual Symposium of the International Association for Vegetation Science (IAVS) in Pirenópolis, Brazil, a group of young members has been working to form a South-American section of the Association, especially dedicated to South-American ecosystems.

The proposal was motivated by the need to develop and advance research aiming to understand and help to protect different aspects of natural and semi-natural ecosystems of South America, which are threatened by land-use changes, as was discussed in the last IAVS Bulletin. A special section for South America within IAVS is expected to facilitate and foster communication, research, and collaboration between researchers dedicated to the study of these complex and unique ecosystems, identifying potential gaps in knowledge and future directions for research in South-American vegetation science. The need to enhance the link between policy and scientific evidence from vegetation research for the protection, proper management, and restoration of South-American natural and semi-natural ecosystems is evident and calls for urgent action.

With these aims, we invite and encourage researchers established in, or working on South-American ecosystems to take part in this group, with the idea of developing a formal proposal to be presented to the IAVS Council during the next months.

If you are interested in participating, please contact us at iavs.sams@gmail.com.
Participants of the post-symposium excursion in Estonia, 2013 (above)
Participants of the post-symposium excursion in Western Australia, 2014 (below)
During the mid-symposium excursion in the Jirisan National Park in South Korea, 2012 (above)
During the mid-symposium excursion in the Brecon Beacons National Park, Wales, 2007 (below)
Calendar of Events

ITALY
10th EDGG Field Workshop, 3-11 June 2017

ITALY
60th IAVS Symposium, 20-24 June 2017

LATVIA & LITHUANIA
14th EDGG Conference, 4-11 July 2017

SPAIN
26th EVS Meeting, 13-16 September 2017