



IAVS



# BULLETIN 2018 / 2

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# A Message from the Editor



The IAVS is here to connect people and to provide an intellectual home for those who focus on any aspect of vegetation. Although I have always been aware of the unique importance of the Association, reading the survey responses confirmed my concept of its role. And I am happy that many other people have such a positive attitude to and good experiences with the IAVS. I hope for a positive future for the Association and my hope is based on a strong participation of young people in the IAVS activities. This is important as the general interest of young people in natural sciences is rapidly declining; this is obvious probably also in other places than Central Europe where I live. I also hope that the atmosphere of our meetings will remain relaxed and friendly and it will not be spoiled by political developments in

individual countries or by increasing scientific competitiveness in general. And I am looking forward to meeting many of you in Bozeman soon.

Monika Janišová  
*Editor of the IAVS Bulletin*



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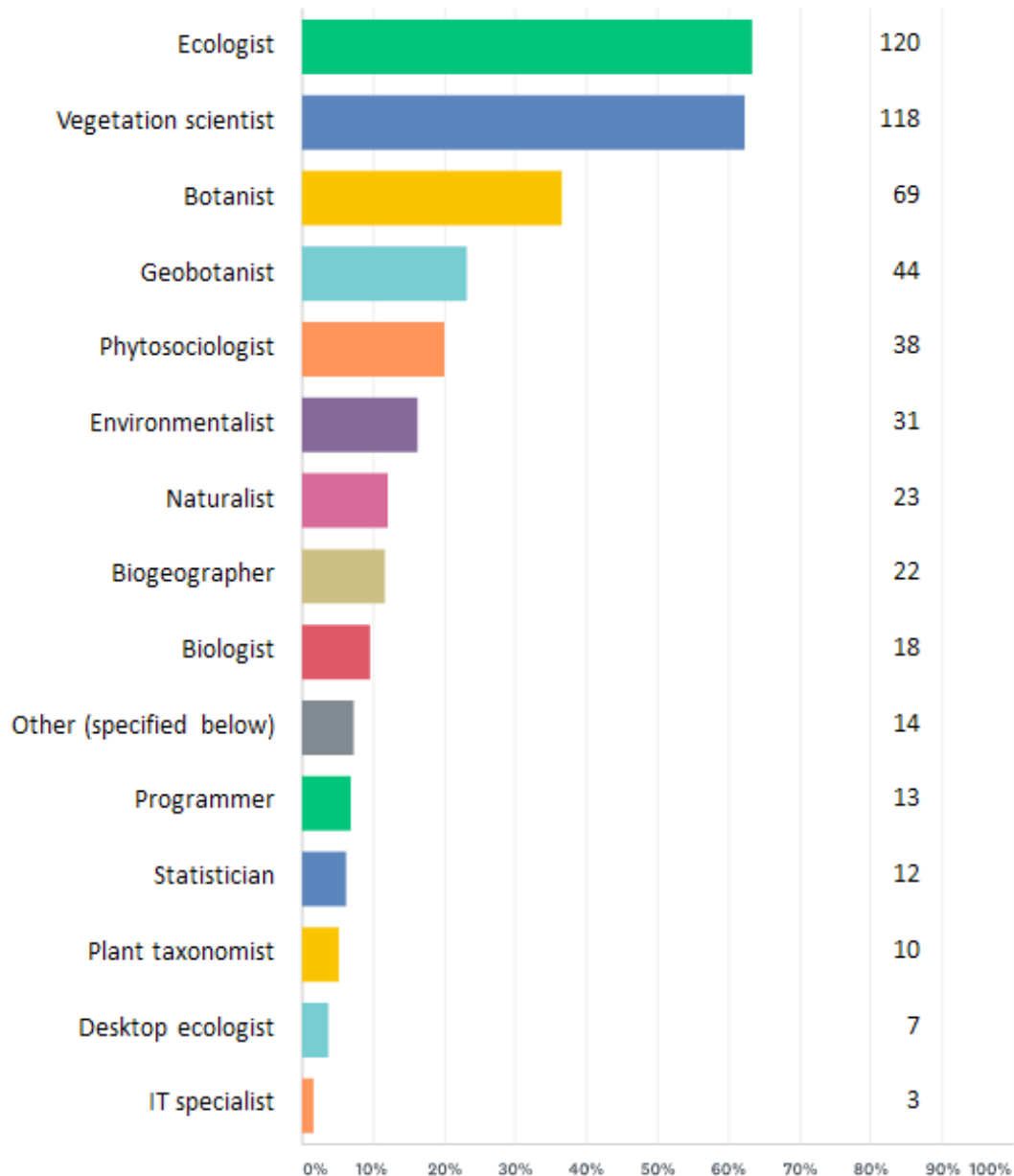
Relaxation after a long trip in the Madonie Mountains during the Post-Symposium Excursion to the Sicilian mountains in 2017.



# IAVS Survey Results

Q1 I feel myself to be a:

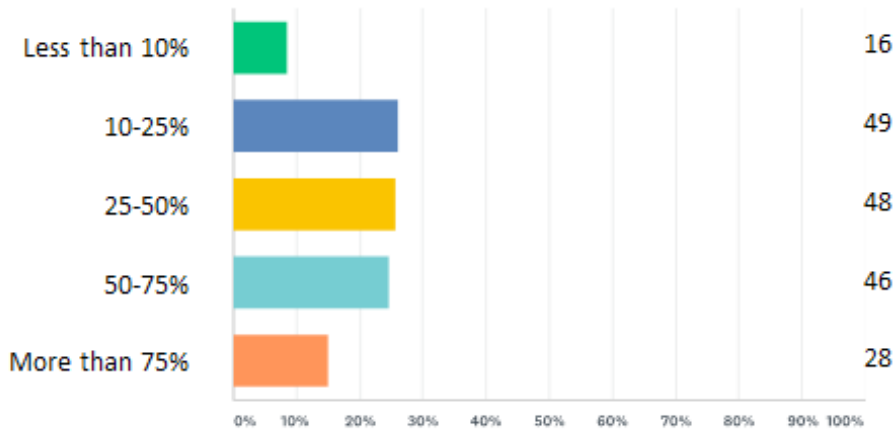
Answered 189



Other: Project manager, Plant ecologist, Palaeoecologist, Conservation biologist, Nature conservationist, Explorer, Environmentalist, Bureaucrat, Ethnobotanist, Amateur mycologist and lichenologist, Historical ecologist, Lichenologist, Data scientist, Expert in Italian flora.

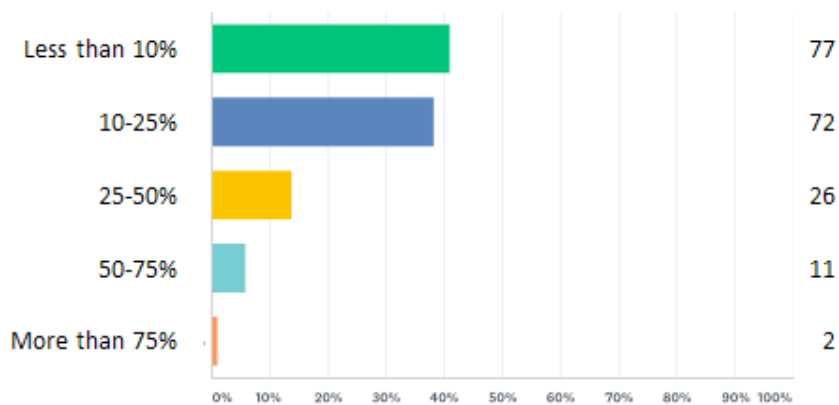
Q2 What is the approximate proportion of your working time that you can devote to addressing scientific problems/questions related to vegetation science (in %)?

Answered 187



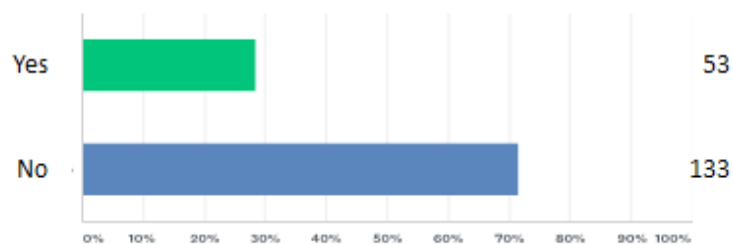
Q3 What is the approximate proportion of your working time that you spend in the field (fieldwork, excursions, etc.) (in %)?

Answered 188



Q4 I am a young scientist (age below 35):

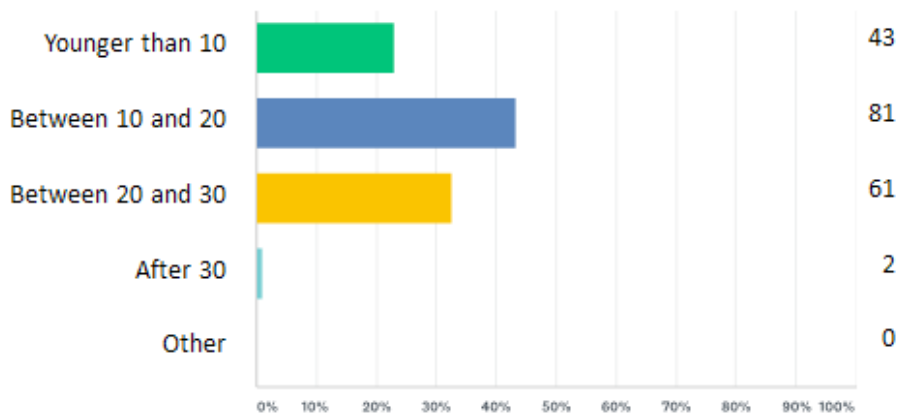
Answered 186





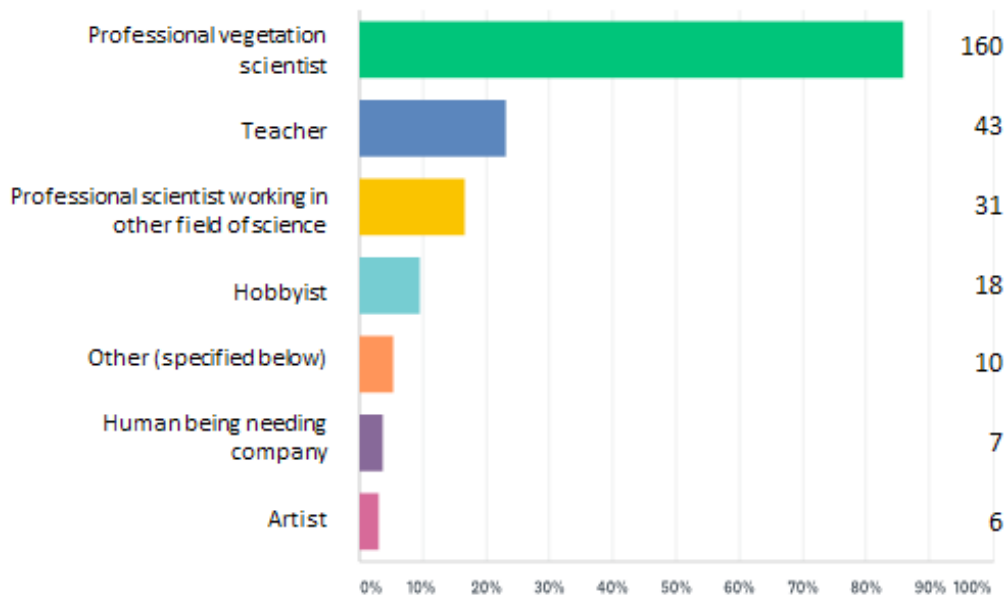
### Q5 My interest in plants and vegetation started at age:

Answered 187



### Q6 I am interested in plants and vegetation as a:

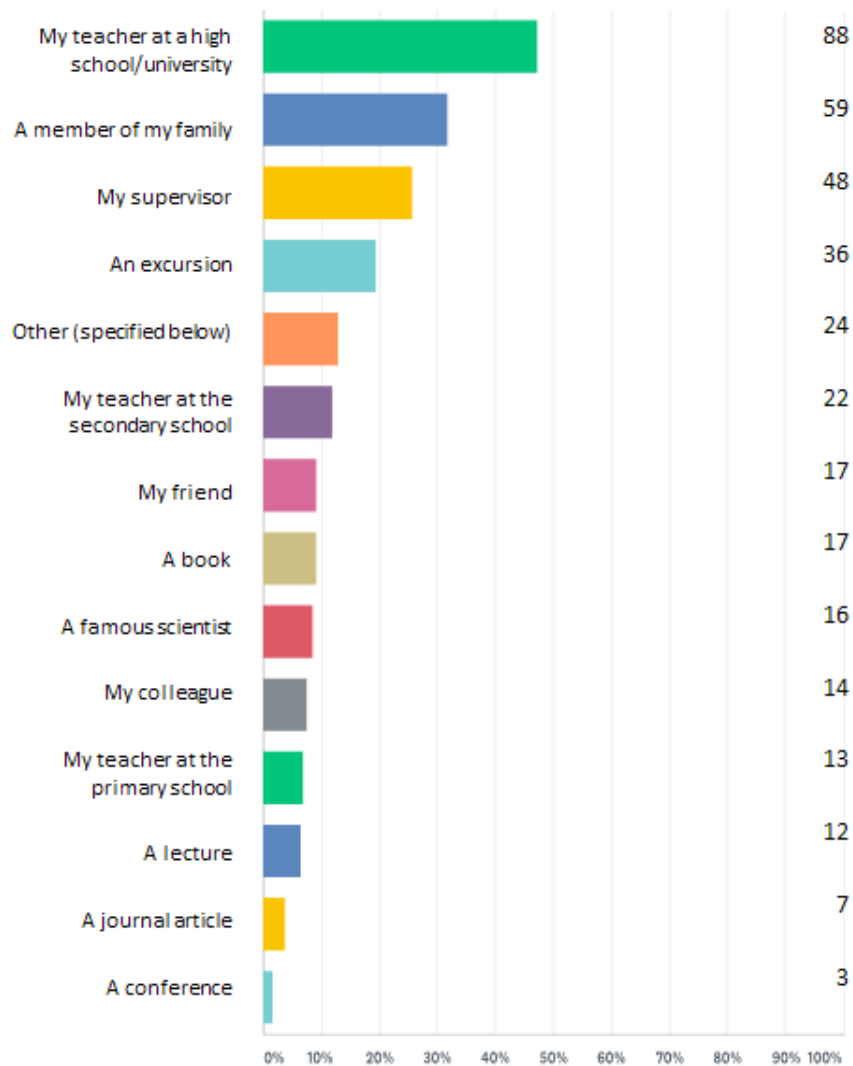
Answered 186



Other: Biologist in nature conservation administration, I love working in plants and vegetation science, Professional nature conservationist, Restoration ecologist and conservationist, Conservationist, Nature conservationist, University teacher, Company scientist, Person who loves nature.

## Q7 The person/event/moment that inspired my interest in plants/vegetation was:

Answered 186



Other:

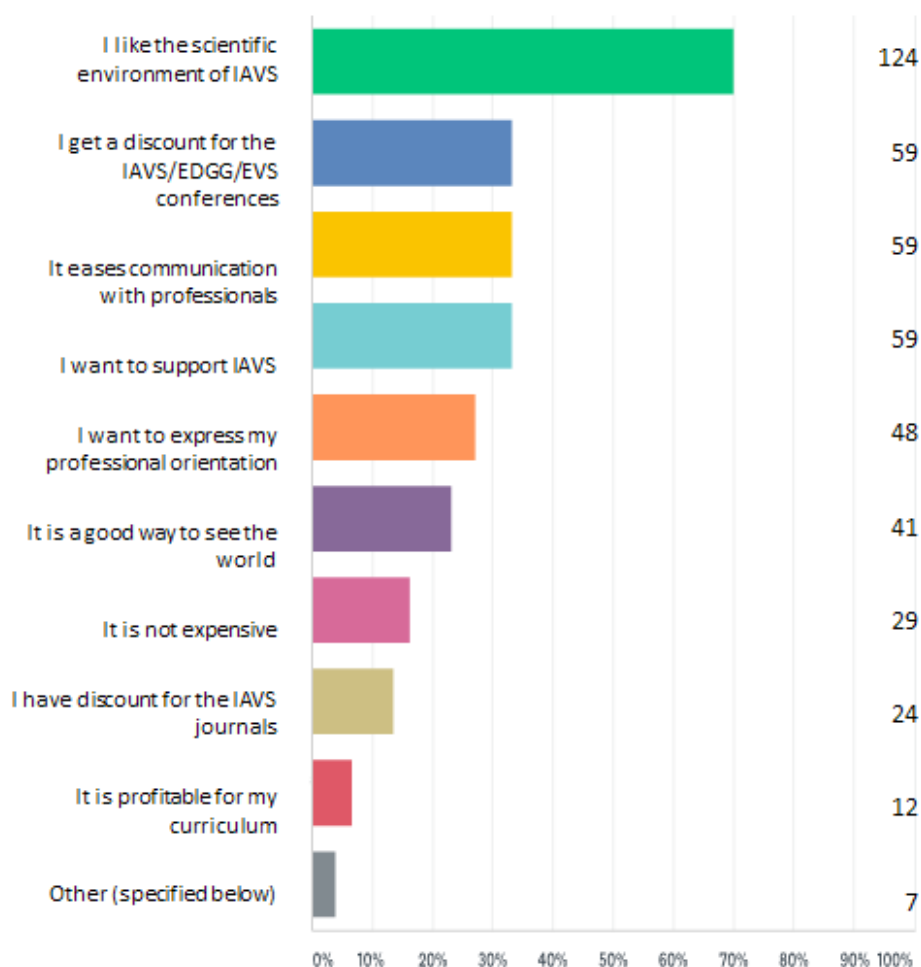
- Harper: "Plants stand still and wait to be counted"
- First of all: my mother and the floras in my childhood home
- I do not know!
- Independent research on birds and their impacts on vegetation. At that time I was more interested in ornithology
- An association of naturalists (the Linnaean Society)
- A booklet about nature conservation organizations in Germany
- Growing awareness of plants while mountaineering
- Getting a faculty position
- Urban area expansion and associated semi-natural grassland destruction in my hometown
- Michael Pollan
- A naturalist association
- Being in nature
- Myself
- When I figured out that one could collect much more data about plants than animals
- Finding my mothers college herbarium in my grandma's attic
- My father and my own solo mini-explorations



- It just happened, by chance
- Practical field course in vegetation ecology
- Playing in the forest as a child
- Many excursions in the nature
- Whole new perspective I've gained studying Landscape Architecture and Horticulture (especially Landscape ecology)
- It's a whole bunch of person/events/moments ... just like a puzzle
- My family's garden when I was a child

### Q8 I am a member of the IAVS because (non-members skip to question 10) :

Answered 177



Other:

- I joined after participating in EVS meetings for several years
- I wanted my country-region to be represented in the IAVS
- I want to learn and enhance my skills more about the vegetation science
- Although I have access to the main journals via my university library, membership provides me with access to IAVS Bulletin.
- I used to participate in discussions (methodology, multivariate analysis) in the past
- IAVS symposiums travel-awards
- Because it happened this way





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Above: During the Pre-Symposium Excursion in Estonia.

Below: Pre-Symposium Excursion in Mata Atlantica, Brazil.

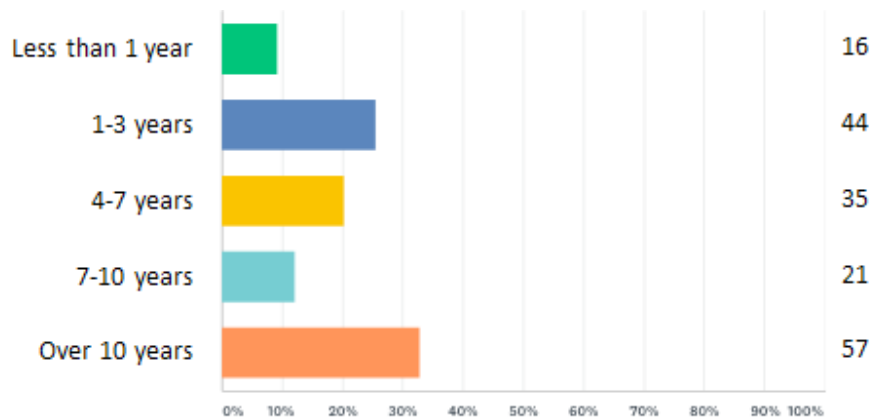


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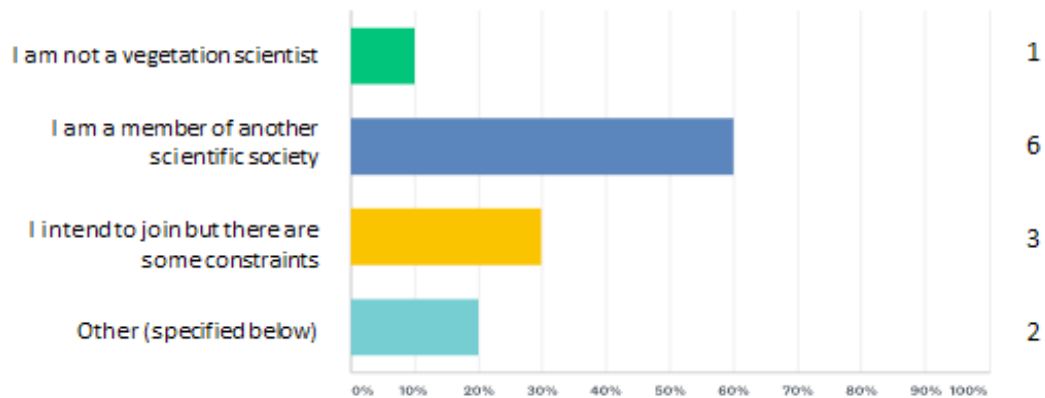
### Q9 I have been member of the IAVS:

Answered 173



### Q10 I am not an IAVS member (members, skip to question 11) because:

Answered 10

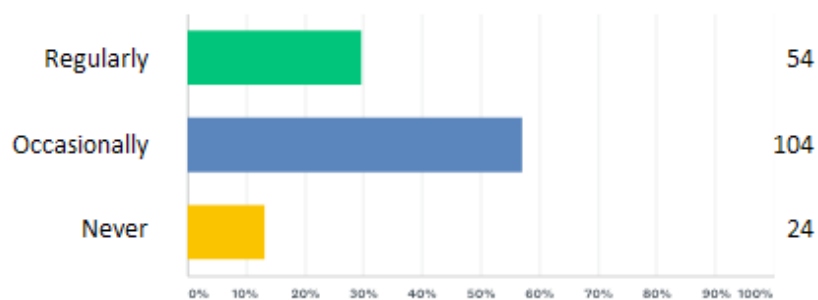


Other:

- I cannot afford to be in very many organizations unfortunately
- I was a member in the past

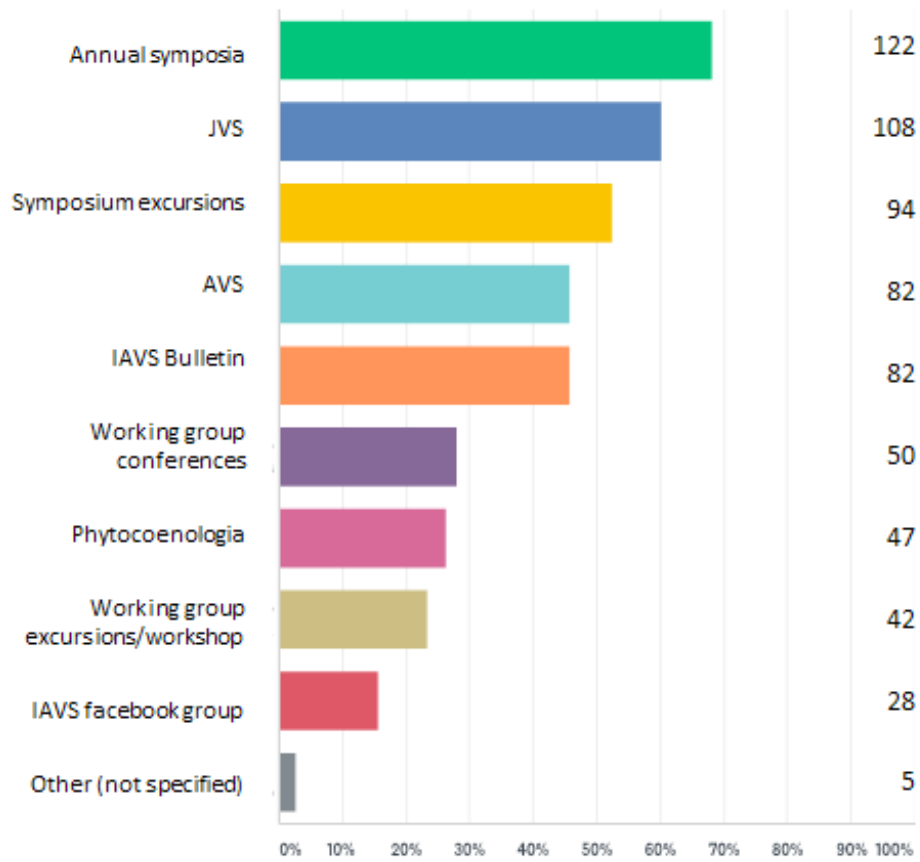
### Q11 I participate at the IAVS activities:

Answered 182



## Q12 I especially appreciate the IAVS activities/media:

Answered 179



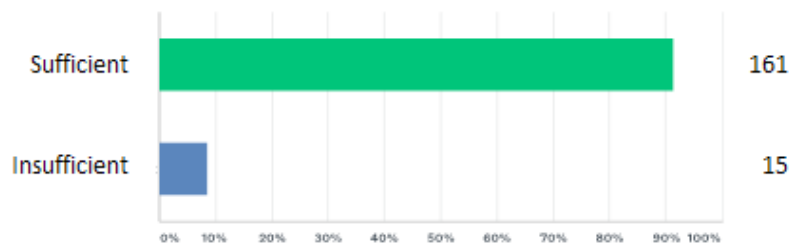
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In Serra de Baliza during the Post-Symposium Excursion in Brazil.



## Q13 I consider the recent IAVS activities to be:

Answered 176

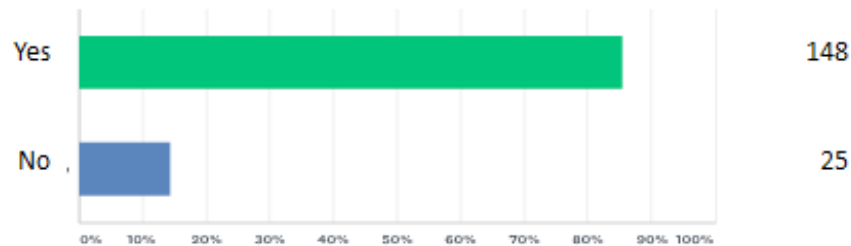


Some ideas for improvement:

- Discuss deeply the peer review procedures, thinking on valid alternatives that could promote rapid spread and share of scientific advances.
- More cooperation with other scientific societies in the field (e.g. ecological societies)
- i) Be far more active in gaining new members, particularly outside the developed countries; ii) Transfer Phytocoeonologia to IAVS ownership and Wiley as publisher to translate the recent reputation gain of this journal into easily accessible benefit for all members; iii) Improve the IAVS website, its functionality and up-to-datedness; iv) Regular collaboration of IAVS with the national geobotanical/phytosociological societies around the world
- I expect more specific workshops and excursions by WG in the future
- Most of IAVS conferences/workshps are located in the Europe/North America, Brazil. I suggest organizing some activities in Asia (Central & East), Mideast, Africa, Argentina, etc.
- Although I work with vegetation analysis for more than 25 year I did not know about the existence of IAVS until recently. I do participate and attend events from ESA, SBC, ATBC and others have read papers on the field in a daily basis. I would be interested in an effort to inform researches about the association a bit more. For example, my institution is the largest research agency in the country (Embrapa, Brazil) - with a branch dedicated to forestry - but I do not remember receiving any info from the IAVS. Maybe an effort to increase the participation of more people from different nationalities engaging potential institution/researchers directly. I've noticed that there are only 2 researchers from Brazil (Professor and his pupil) participating consistently in the IAVS.
- A symposium on Páramo vegetation and ecology with field excursions would be an eye-opener for the IAVS community. I will be happy to co-organize this in Colombia.
- Activities focused on highly diverse but underrepresented geographical regions are quite urgent.
- I would have liked to attend the various symposiums in recent years but the cost of the trip has become too expensive for me. The difficulties of travel unfortunately no longer allow me to attend the conferences but I try to follow via the internet the latest news and I wish you a good continuation to all.
- I have problems in reading the journals of the IAVS, due to lack of signature on the university. This influences visibility, citations rates, etc.
- Need to be better aware of progress in vegetation science
- I hadn't realized how quickly the pre- and post-symposium excursions filled up.....
- More public activities (or support of activities) to address decrease of biodiversity (i.e. scientists and IAVS are addressing, supporting, pointing out, etc.)
- Our working groups definitely needs more "active" members, however it is difficult to motivate people to do additional work without having an obvious gain from it. I feel that many people act more like consumers.
- Could be more involved in policymaking, nature conservation and similar

## Q14 The IAVS helped me to get to know/contact people important for my scientific career:

Answered 173



Shared details:

- Project partners
- No official scientific cooperation until now, but new contacts to many wonderful scientists and great friends in the meantime, sharing inspiring discussions and good beers with them (especially during field trips)
- Co-authors, project partners
- Networking
- Project partners who became co-authors, ... and friends
- It was a great chance for me to see and talk with some big ecologist such a J.P. Grime, Eddy van der Maarel, Christian Koerner, etc. in IAVS conferences
- I have first met project partners and coauthors at IAVS meetings
- Via EVS annual meetings
- IAVS has supported me financially to go to a EVS Symposium in Ljubljana (SLO) in 2015. If there were no support from IAVS I would have not been able to participate. There I got to know many people, share ideas and learn many new things. Among others, I met a professor (vegetation scientist) with whom I developed a study project and now that is my PhD study. It was just great - I am deeply thankful to IAVS.
- Coauthors
- I would like to participate in a project on the forest and steppe vegetation of Algeria or North Africa or the Mediterranean because it is my field of research, it is interesting to exchange points of view and specialists from our region. Indeed the problem of the erosion of biodiversity is important in these ecosystems.
- Not for career - for positive interaction with science colleagues
- The companionship I received was heartwarming and beneficial to my studies
- Close relationship to Mike Dale, Orłóci, Otto Wildi, Prof. Grabher, L. Mucina, E. van der Maarel etc.
- Colleagues from the other countries
- Coauthors, collaborators
- It was great to find project partners and generate quite a lot of new Ideas





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Above: Alessandro Chiarucci, Jürgen Dengler, Milan Chytrý and Helge Bruelheide with a termite mound.

Below: Elegance in the Atlantic Rainforest.

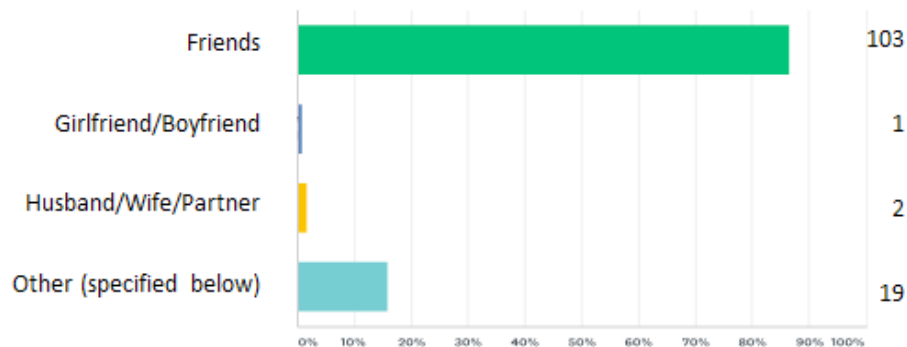


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## Q15 The IAVS helped me to get to know/contact people important for my personal life:

Answered 119



Other:

- Vegetation scientists are special people with whom it is very easy to make good friends!
- Contact with scientists from different countries and from different scientific schools
- Colleagues, working groups
- IAVS has not reached to my personal life yet, I am looking forward to the activities upcoming
- Colleagues
- Best ever opponents to my conclusions, who became my best friends later

## Q16 I would characterize the role of the IAVS in science as follows:

Answered 79

Responses:

- It plays a big role in vegetation science, evidenced in the amount of top scientists that are members of the IAVS
- Opening up the eyes of lab-work orientated people for the real world of plant life and co-existence; what may be missing: a stronger impact on society and decision makers e.g. on the issue of biodiversity
- It brings together people with similar interests and different skills
- It is the only vegetation science association
- Easy communication of scientific findings and activities to general public
- Make relationship with other disciplines such as landscape ecology and humanities
- Pillar of strength
- Leading platform for vegetation ecologists worldwide
- An important venue for vegetation science
- IAVS has the leading role in the scientific topics of vegetation
- Important for publishing journals and encouraging scientific communication via journals and meetings
- Complementary to my professional field of expertise
- An important anchor point and bridge to scientists in other countries
- Advocates and professional learned society for vegetation science
- Exchange and networking + visibility of our field of research
- As a solid pillar that supports vegetation science anywhere
- Promotion of plant ecology worldwide and connecting vegetation scientists from different parts of the world
- A linkage between theoretical, statistical and field ecology.
- IAVS gives the possibility to inform people about new scientific results and new researches
- Raises the visibility of vegetation science, publishes journals



- Forum to discuss and promote activities and science related to vegetation
- Very important
- Hegemonic
- Absolutely necessary to focus the attention on and stress the importance of vegetation science for the questions of biodiversity and nature conservation
- Putting together people during symposia, providing publication platform
- Important for studying vegetation in an international context.
- Still a lot has to be achieved in our world. IAVS is the key organization for world's vegetation
- It is the hub of all interested in vegetation ecology
- Networking of people focusing on same topics
- As a Union of Scientists that aids the practical aspects of vegetation science and also is a good place for new researchers to learn and develop
- IAVS joins vegetation scientists of the world
- Vegetation itself is the most evident trait in almost every terrestrial ecosystem, the scenario for all physical and living interactions. Society and even colleagues misunderstand the huge importance of vegetation and its role. It's the mission of the IAVS to generate and promote this kind of knowledge.
- Promote and fund vegetation science. Facilitate international collaborations through symposia. Publish scientific work on vegetation science through their journals.
- The source of vegetation science
- An authorized organization at vegetation science
- A unique organization for international collaboration and information exchange by vegetation scientists
- Worldwide vision, inspire for science, Interaction between scientists and development of their research
- Enhancement of knowledge through communication in the field of vegetation science
- IAVS allows plant scientists to think about new methods to better understand vegetation and find solutions in the short, medium and long term. Its role is strategic in the world because the conferences organized each year make it possible to update the research in the floristic diversity and the pressures which weigh on it.
- Essential
- Connects and inspires
- Indispensable
- Updating gaps and issues related to vegetation science
- Very important, essential for various fields of knowledge in interface disciplines (ecology, taxonomy, biogeography)
- Great scientific society but also friendly
- An important medium for developments in vegetation science
- Important scientific community which covers the entire fields of vegetation ecology
- Paramount
- To support and encourage members at every level
- Emphasis on quantitative vegetation data in relation to ecological concepts
- Central in the communication in vegetation science
- Small but meaningful
- It just is the main/only International association of that respective field
- Good platform to stay updated
- Bring together open-minded scientists of vegetation ecology in a broad sense and provide a medium for them to publish their research
- Promotes research on vegetation and contact/collaboration among vegetation scientists.
- As a young scientist the participation at the conferences broadened by horizon so much. Getting to know people from all around the world was great, learning about their environmental and scientific challenges and seeing their ecosystems with my own eyes was amazing!
- As any other scientific society
- As the source of knowledge by vegetation scientist for developing vegetation science





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Above: Jalil Noroozi taking a photo of *Saponaria sicula* on Mt. Etna in Sicily.

Below: Gabriel Sabino taking a photo in Mata Atlantic near Cunha, Brazil.



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- A major institution publishing scientific knowledge to assist the human race in preventing total destruction of our living environment
- Connecting ideas
- Good group of good people, who like the nature
- Putting the vegetation scientists together, sharing ideas and research experience
- A constant reminder of the importance of plants for sustaining life on the planet
- An important international scientific society
- I think that IAVS is the leading organization that collect and share all vegetation related data
- Umbrella enabling plant scientists to meet and exchange ideas
- Keeping the flag flying for the discipline
- Good place for new researchers to learn and develop
- IAVS joins vegetation scientists of the world

### Q17 I would characterize the role of IAVS in my scientific career and personal life as follows:

Answered 75

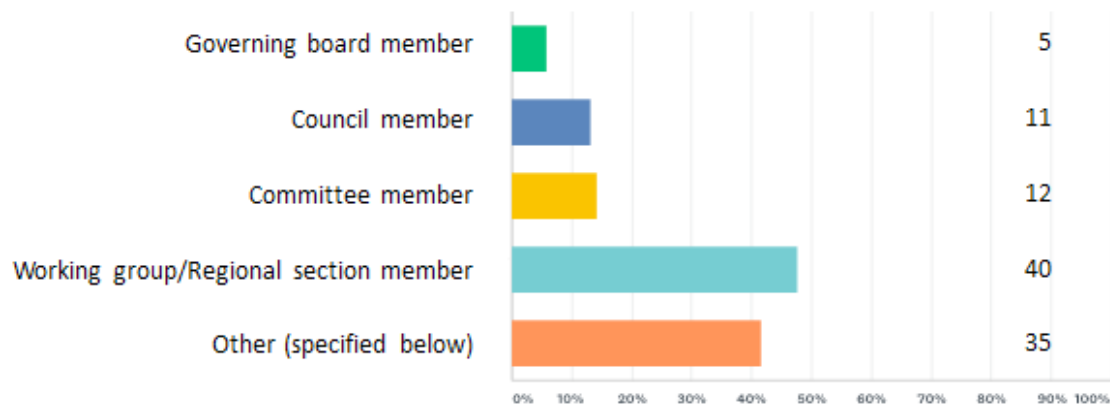
- Very fruitful and stimulating
- It helps me build connections with scientists from countries I would normally not come into contact with. It also brings like minded people with similar interests together, where friendships are inevitable.
- Also definitely relevant, for the contacts and people met, as well as their lessons and shared ideas, even during meetings and congresses.
- Getting contact to scientists with many innovative ideas on botany - how to see plants and their environment; getting the chance to see important habitats and their plant communities worldwide
- It helped me a lot to get contacts to people who are working on similar topics
- I have enjoyed many IAVS and EVS meetings since I have had the opportunity to join very good scientists. Now some of them are good friends
- At the moment it is a good reliable source of information
- To me, the IAVS symposia are the most important scientific events every year
- I use and publish in JVS.
- The working group of EDGG where I belong helped me a lot in scientific issues related to my professional life in Academia.
- I read JVS, which I find to be a very useful journal, and I have published a few papers in JVS.
- Enlightening and very appropriate for my professional development
- Useful
- Publishing JVS/AVS
- Minimal - other societies are more central to my research
- It expanded my horizons
- IAVS gives me prestige and confidence as vegetation scientist
- The association where I can share my own work and the work of other vegetation scientists, which is very stimulating, open-minded and gives a lot of ideas. This is part of my scientific career, but also people I like to share something else with beyond professional issues.
- A place to meet scientists from different countries of the world and share experiences. I love the field trips (mid conference excursions) and conference dinners.
- IAVS gives me the opportunity to contact people having a high scientific level and to know many interesting scientific results
- Secondary
- Stimulating
- Essential
- I am a late member, so IAVS was not important for my scientific career. Vegetation science has always influenced my personal and professional life.

- At IAVS symposium, my first (or one of the first) international scientific talk happened
- IAVS - A Home for Vegetation Scientists of the World
- Enrichment and insight in foreign vegetation communities through well-organized excursions. Enduring relations to other vegetation scientists, personally and professionally.
- At IAVS meetings I made new friends and the talks and discussions drove my interest in specific aspects of vegetation ecology
- To contact and meet people with the same scientific focus and learn about their new findings
- As a student-member of the IAVS I have been promoted via IAVS in many ways in my yet junior- career.
- IAVS helps me to find directions of the research and methodology
- IAVS is a great tool for transforming the knowledge on vegetation into applications for the real life. For the sake of the people. For the sake of the environments themselves.
- IAVS enables me to publish my research and present it to an international audience and find collaborators.
- A good indicator and reference for my research
- A scientific "home"
- To improve scientific community research
- Annual events/customs, my growth as a researcher and as a human
- Advancement of knowledge
- The IAVS has made it possible to know many flora specialists and to exchange views on the state of the ecosystems of the other regions of the world. This enriched me in the knowledge of the flora of the planet.
- Very important
- Inspiring
- Important
- Facilitative to young scientists as they contribute in advancing vegetation science
- Extremely relevant to perceive the future direction of vegetation science, new concepts and methodological approaches
- A highly significant role in developing my own contributions to vegetation science
- Important as a forum for scientific exchange
- Feel others share my vocation
- Very encouraging.
- Highest concentration of friends and people doing interesting research than any other scientific meeting I attend.
- Broadening my horizons
- Small but meaningful.
- It helps to meet friends regularly. It helped to get collaboration for larger projects.
- Structuring my research and teaching activity
- A great way to meet peers and colleagues in a relaxed atmosphere at the annual symposium.
- Gave me the opportunity to meet fellow vegetation scientists, to become involved in reviewing and editing for journals, and to travel to many countries and see the vegetation.
- Today, I feel more like a citizen of the world than of my birth country. This is at least partly due to the international scientific community of the IAVS, which is so open-minded and friendly.
- Helps to realize some of my professional goals
- Absolutely crucial, especially at the beginning of my scientific career
- A source of information on modern research in the vegetation sciences
- Meeting with really good botanists, ecologists and scientists
- Window to the world of vegetation science, contact with the community of vegetation scientists
- A constant reminder of the importance of plants for sustaining life on the planet
- Interesting science, good journals, valuable scientific contacts
- Identity catalyst
- A load of information I pulled out from JVS and AVS, in the first place. Attending conferences helped to affirm myself in the field of vegetation
- My intellectual home



## Q18 I work actively in the IAVS as:

Answered 84



Other:

- Editorial Board member of AVS, Editor of Phytocoenologia, Executive Committee, member of two Working Groups
- A supporting member
- JVS board member
- Supporter, manuscript reviewer
- Member
- JVS associate editor
- Editorial board member
- Scientist
- Interested follower
- As GrassPlot Consortium member, and EDGG member
- Associate Editor for JVS / AVS
- Former North American Business Manager
- Editorial board member
- Attending symposia
- Editor
- Submitting manuscripts
- Corresponding editor
- In the past I was council member and organized meetings
- Former JVS Associate Editor
- Work for the journals



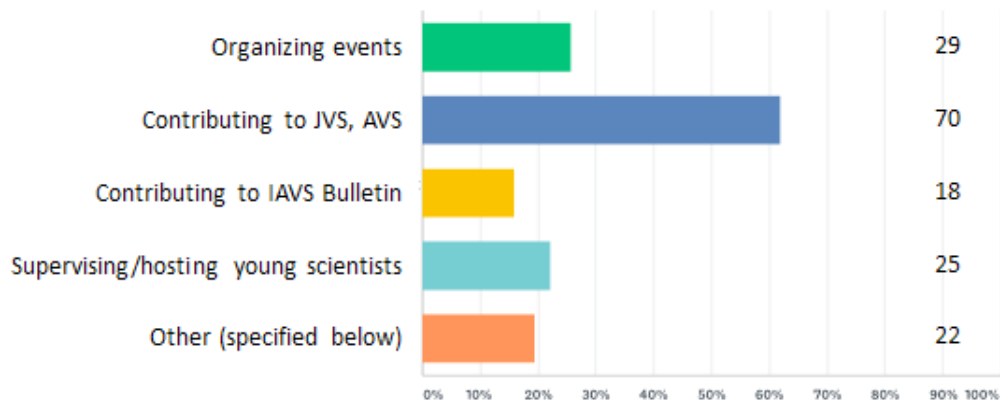
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On the slopes of Mt. Etna during the Post-Symposium Excursion in Sicily, 2017.



## Q19 My preferred contribution to the IAVS activities is:

Answered 113



Other:

- Attending meetings
- Membership
- Contribute to committees and working groups
- Participate, if I can, in annual Symposium
- Contributing to working groups
- Organizing an event in Colombia
- EVS
- My preferred contribution will be (I'm still not included in activities) to cooperate in activities connected to areas of Croatia, Bosnia and Slovenia and in supervising young scientist, or helping in organizing events, and contributing (as reviewer or paper coauthor, project collaborator)
- Participating in symposia and workshops
- Advertising vegetation science to other scientist
- Excursions, learning
- Connecting plants and people



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Valley of the Giants in Western Australia during the Post-Symposium Excursion.



## Q20 And finally, would you like to share a nice memory, experience, moment related to vegetation science/IAVS? You are welcome to do it here:

Answered 58

Responses:

- As a young scientist, I was confused about my career and whether to continue with research or start working in the private industry. The IAVS Symposium in Sicily, motivated me to continue with my research career after being inspired by all the scientists from around the world, and of course the added benefit of traveling to unique destinations. Everyone was so friendly and welcoming, it made me feel that vegetation science can really be a fantastic career, especially if so many vegetation scientists are so friendly and happy.
- At the beginning of my PhD, I had the opportunity to participate in the IAVS annual meeting at Lisbon (2005), where I met Dieter Muller-Dombois. I keep in memory great and funny moments, shared with him and other friends, like, while resting, he stopped us using his walking stick (for fun), and would only let us pass after we answered correctly some interesting questions he posed about vegetation or the environment. I keep those moments affectionately in my memory.
- Campo rupestre during the 2016 IAVS post-symposium excursion in Cerrado
- Each of the eight IAVS or working group activities I attended during the last years gave me experiences and memories, I will never forget
- Thank you :) I will hope to have possibilities to be more present and active with you in the future
- As local organizing committee chair, I organized IAVS annual meeting at Mokpo, Korea on 2012.
- I have been to only one meeting -- way back in 1997 (I think) in Czech and that was very nice.
- All grasslands party I have participated were excellent!
- To be aware about the participation of scientists from many countries with the sole purpose in mind: A better awareness the contribution of vegetation!
- My first meeting in the field in the autumn 1966 of the ecological polymath Derek Ratcliffe. That changed my life and my way of doing fieldwork
- My memories of the Symposium at Porto Allegre, Brasil, which was an excellent one.
- I remember my first experience as IAVS member participating in the Lapland pre-excursion and in the Uppsala meeting (1989). Was so exciting both experiences, in the field working with young and senior colleagues and in the meeting knowing personally a lot of prestigious plant scientists from many countries... was an unforgettable scientific experience in my incipient research life!!!!
- The 2000 IAVS meeting in Japan! At that time I was a young scientist who knew almost nobody within the IAVS. We felt so isolated in Nagano and so disoriented that people got closer to each other, spent some time in bars for long and fascinating discussions all the evening long, with young scientists (like me at this time) and confirmed scientists around the same table, sharing a lot and much more than science! I will never forget (and we almost all kept in touch since that time) and this is also a strength of the IAVS: to bring people from very contrasted horizons together, allowing them to share science but also culture. Aside, a special mention to some symposium excursions that were particularly well organized and allow to share a lot (Brazil 2002, New Zealand, South Africa...).
- In IAVS, Napoli, Italy (2002), I was going to present results of a glasshouse experiment on " Effects of competition and resource availability on arid-land plants". Before my talk, during the coffee time, I met Professor van der Maarel, had a short talk and asked him to participate in my presentation. After the talk, I asked his opinion on my work; he said " a nicely designed and well performed research but with unrealistic results, because it is too hard to use results of glasshouse experiment for explaining vegetation changes under the real field condition". When I came back to my country, I shifted my research work from laboratory to the natural fields (rangelands and desert areas). Now I believe that field research is so hard, as it is time consuming and complicated. Nevertheless, it is more satisfactory when you are able to understand vegetation changes in the nature.
- The IAVS in Brazil on 2016, very good.
- A deep homage to my dear supervisor and wonderful friend, the late Juan Pablo Lewis (PhD at Cambridge, UK), member of the IAVS and one of the pioneers of Argentinian vegetation science.
- Field excursion in South Africa 2008





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Playing during the Pre-Symposium Excursion in Estonia.



- I remember my first EVS Workshop (Vienna, 2012). For a young scientist from a small country it was amazing. All talks, ideas, conversations, all people I have met... I used to say to my students - it is more valuable to visit a workshop like this one than to read paper alone and try to get inspiration.
- Being a young student, I donated my first pair of worn out tracking boots, to the “god of vegetation”, then situated on a rock in the Central Alps, with *Androsace chamaejasme* and other beautiful alpine plant species, - instead of simply throwing them away...
- Protecting environment-concern to save planet
- The IAVS excursion to Japan in 2000 was one of the highlights in my career: perfectly organized, wonderful people and an incredible variety of plants and vegetation.
- Not yet, maybe in the future
- Because of vegetation science I have been selected to study Colombian paramos since 1971. A wonderful personal and professional experience!!
- I really like the pre- and post symposium excursions where people across all career stages sit in one bus and walk the same paths. Although I attended rather few I really felt science and passion for nature during those excursions.
- Veselo se prisjećam krasno organiziranog kongresa i ekskurzije u Smolenicama, Slovačka (2010), kao i krasnog druženja u Ljubljani (EVS 2014)! :) [I am happy to recall a beautifully organized congress and excursion in Smolenice, Slovakia (2010), as well as the lovely social gathering in Ljubljana (EVS 2014)!]
- Proud to represent my region, my mountains. But there's a lot of work to do before IAVS gets well-known and represented in some of the most megadiverse regions of the world. Awaiting for you, guys! It will be awesome to work together...
- The field trips at the New Zealand meeting were fantastic!
- I really love with the warm and friendly people here
- I will never forget the IAVS meeting in Uppsala Sweden, an idyllic experience in so many ways, and one I was able to share with my family!
- The IAVS is an important global platform to share and to receive the knowledge, advancement on the vegetation science and its associated
- I will never forget the beautiful landscapes that I have had the opportunity to see thanks to you in different countries (Estonia), thank you very much and I wish one day to be able to expose the problems of desertification and human pressure that weigh on North Africa in general and on Algeria in particular. The steppe has almost disappeared, biotopes are disappearing and we are helplessly watching this disaster. Animals have already disappeared before we study their behavior ...
- Meeting with big Botanists!
- I felt so complete and with a sense of belonging in the *Xanthorrhoea* habitat, Western Australia that I embraced one plant, as it was a pet or a person. And it is prickly!
- I got to visit actual biomes not just in picture or video from the internet.
- The Sonneveld talk based on photographs from the top of an electricity pylon in Uppsala 1998 brilliant and very funny
- Toledo, Spain. My first ever conference.
- I am member since 1978 and I had a lot of nice experiences during that time.
- When I saw a plant community in the field I only knew the table, like the score to music.
- Various music performances by JVS members at meetings
- 1987 June - IVAS Workshop Methods in Vegetation Science in Galanta, Czech Republic: We “Germans” organised a Improvisational theatre: Rumpelstiltskin: why “classification” is pretending that we have power over “nature”, but “ordination” not. Some East German colleagues attended too and they were afraid to play game with West-Germans because they assumed a Spy in their rows.
- Visiting South Africa and Australia. Unforgettable
- On the annual EVS workshop in Ioannina, Greece, we had a wonderful excursion in Albania, just beyond the border. We were filmed by the camera crew of the national, if I remember well, television so the accompanying foresters and nature guards were more or less trying to be ‘in the picture’. Our guide told about the problems with deforestation, and that the foresters and guides were essential in preventing un-allowed wood-cutting. The tv crew was filming him, and the foresters at his back, all looking in the camera, when in the background, behind the camera, a local young girl with a donkey stepped out of the woods, her donkey fully packed with timber. She passed unnoticed by the officials, because they were too busy with the tv crew... I had a marvelous day...





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Above: Laco Mucina explaining the fire regime in kwongan near Kalbarri, Western Australia

Below: Greg Keighery spraying our shoes in the Stirling Range Mts as a prevention of dieback caused by the root-rot fungus *Phytophthora cinnamomi*.



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- Pre-conference trip in IAVS Stellenbosch was very interesting. It was the first time I saw a penguin in wild, and also the first time I visited actual desert (Namib). And it happened that these two things occurred simultaneously!
- Excellent organization
- I met my wife at an IAVS symposium in 1995.
- It is huge impression when coming to the first 60th IAVS symposium. I am the only one using veil that everyone will recognize what my religion is and came from far far away country, Indonesia where the place was like isolated. I was little bit afraid to talk to scientist, because I was thinking I am still not having great knowledge and still in a master degree program. One thing I believe that everyone will be kind. Yeah, everything changed while the symposium started and it was not what I was afraid of. Everyone in IAVS symposium was very welcome and even gave me courage and more knowledge about anything related vegetation. It amazed me and It was lovely. I was really really love in this warm environment. Everyone respect each other included me. It touched me a lot and I will never forget this feeling then always hope for their best. Their dedication to vegetation science become my big courage to be as professional as them in the future.
- I attended the IAVS symposium in Palermo and that was very interesting for me because I met a lot of specialists in vegetation science in the symposium
- Every sunny day I love to lie amongst vegetation examining the botanical components and watching the animal life, making notes and just enjoying being alive.
- During my first experience in the EDDG meeting in Halle I rediscovery my passions!
- The best events use to be the excursions, to share the knowledge in field
- Best memories are my lovely student textbooks in vegetation science and ecology, which have turned into the great people, who wrote them, when I became a member of IAVS
- I suppose putting faces on names i.e. meeting important vegetation scientists who have advanced the field over the years



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Walking towards the mangrove forest during the Pre-Symposium Excursion in Brazil, 2016.





# Y oung Scientist Awards 2017

Each year IAVS recognizes the young scientists (students, or graduates within three years of completion of a degree) who have presented the most outstanding oral presentation or poster at the annual meeting of the Association. The first-prize-winners are awarded 1000€ to be used to attend one of the subsequent two annual meetings of the Association. At the IAVS Annual Symposium in Palermo eight young scientists were awarded for their outstanding presentations; this included honorable mentions awarded to four authors of oral and two authors of poster presentations, in addition to the main awards. We are pleased that these young people agreed to share details of their research topics, favorite ecosystems and their experiences and impressions from the Symposium with readers of the IAVS Bulletin.

## Young Scientist Oral Presentation Awards

### Francesco Petruzzellis (Italy)

**First prize for Oral Presentation:** *Sampling intraspecific variability in leaf functional traits: practical suggestions to maximize collected information* (Co-authors: Chiara Palandrani, Tadeja Savi, Roberto Alberti, Andrea Nardini, Giovanni Bacaro)

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Plant functional traits have been widely included in ecological studies in the last decades because they could provide direct and indirect link between plant physiological and ecological functions. Despite the large use of functional traits, there are still some open issues to be solved, related to the cost-benefits of different sampling strategies to capture the variability of functional traits between and within communities. At the 60th IAVS Symposium in Palermo, I presented a study started at the beginning of my PhD, where I was interested in finding the best sampling strategy to capture mean values of functional traits for a species/population, while maintaining information about traits' variability and minimizing the sampling size and effort. We selected one species (*Quercus ilex*) and two functional traits: specific leaf area (SLA) and the osmotic potential ( $\pi$ ). After an intensive spatially-explicit sampling of the two foliar traits, we decomposed the variation in

traits across different spatial scales and compared the precision and accuracy of measurements made using different sampling strategies.

We found that the two traits differed in how they varied across spatial scales: variation in SLA was most pronounced within individuals, while differences of  $\pi$  values were higher between individuals. When testing for different sampling strategies, we found agreement in sampling effort with results presented in previous studies. However, in most of them, only "sun leaves" (leaves in the outer canopy) were collected, and we demonstrated that this procedure could lead to underestimation of mean values and variability in both SLA and  $\pi$ , thus possibly leading to incorrect evaluation of leaf processes that change as a function of leaf surface such as transpiration rate, gas exchanges, and photosynthesis rate.

My study ecosystem is the Karst region located in northeast Italy. The complex geomorphology creates discontinuities in the regional climate. The resulting complex and fragmented microclimates host multiple plant and animal communities, which makes this region ideal for ecological studies. In addition to natural heritage, the Karst region encompasses battle fields from the First World War, and thus it is valuable also from a cultural point of view.



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I really liked the Symposium in Palermo, as it was my first time in an international congress. I was really impressed by the number of good scientists present at the Symposium and I really appreciated the constructive atmosphere during the sessions and, of course, during social events. I hope to come to IAVS in Bozeman next July and I am really looking forward to attending this meeting.

## Manon Hess (France)

**Honorable Mention for Oral Presentation:**  
*Microwave soil heating for controlling invasive plant species germination* (Co-authors: Mélissa De Wilde, Hugo Fontes, Loïc Willm, Nicole Yavercovski, Elise Buisson, François Mesléard)

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My presentation in Palermo was about the results of experimental studies realized in the framework of a project aiming to develop a microwave-based method to control the soil propagule bank of invasive plant species. The first experiment was conducted to determine the more effective combinations of power (2, 4 kW) and duration (2, 4, 8 min) to decrease seedling emergence of three invasive plant species in Europe (*Fallopia × bohemica*, *Datura stramonium*, and *Solidago gigantea*). We also assessed the effect of soil humidity (10, 20, 30%), seed depth (2 cm, 12 cm) and soil compaction on the effectiveness of microwave treatments. The most efficient treatments were 2kW8min and 4kW4min. While their effectiveness decreased with increasing

soil humidity, it increased with soil compaction. In some cases, effectiveness also decreased with depth. In a second experiment, we assessed the effectiveness of four microwave treatments (2kW4min, 2kW8min, 4kW2min, 4kW4min) to destroy a complex seed bank as well as the capacity of treated soils to allow germination and survival of newly arrived seedlings with restoration goals in mind. The Poaceae were more sensitive to the treatments than dicotyledons, and particularly than Fabaceae. There was no effect of microwave treatments on soil recruiting capacity. These first results are encouraging and studies are on-going to determine the effect of soil texture on treatment efficacy as well as treatment effect on soil properties. My current PhD research focuses on invasion resistance of restored plant communities. Through experimental approaches, I am trying to better understand the mechanisms underlying invasion resistance to ultimately improve restoration practices. No stunning natural landscapes for me, but plastic pots and commercial plant varieties! Working on invasion resistance is however really exciting, obviously because of the potential positive impact on biodiversity, but also because it is really stimulating to study mechanisms of plant coexistence and plant communities assemblage.

Presenting my MSc's work at the Palermo symposium was a very rewarding experience. I had a real pleasure to attend the inspiring talks and





share and discuss about the diverse aspects of vegetation science. Unfortunately I will not be able to come to the 2018's IAS symposium, but I hope I will be able to participate in the following years.

## Maria Májková (Czech Republic)

**Honorable Mention for Oral Presentation:** *Temporal fluctuations and functional traits in high-diversity plant communities* (Co-authors: Francesco de Bello, Alena Vítová, Jiří Doležal, Jan Lepš)

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At the IAVS in Palermo I presented a collaborative project from my PhD and post-doc in the Czech Republic. In the project, we aimed to advance our understanding of temporal stability in both populations and communities by using functional traits as proxies for species strategies. We used data from a long-term (over 10 years) experiment in a highly diverse oligotrophic wet meadow community. We demonstrated that higher values of leaf dry matter content, i.e. plants with tougher leaves, were consistently associated with greater population temporal stability. This indicates that slow-growing species with more conservative strategies respond less rapidly to environmental changes, and are thus generally more stable over time. This relationship provided empirical evidence linking trait trade-offs to different species' strategies in a fluctuating environment, specifically the different abilities of species' populations to buffer against unfavourable conditions. Knowing that some species in a community are more variable and others more stable over time, we explored whether temporal fluctuations of functionally more similar species are more synchronous, i.e. whether similar species fluctuate together as a response to environmental fluctuations. Interestingly, we found the partial synchronization to prevail, with functionally similar species fluctuating more synchronously.

Our study system for the temporal stability project

presented in Palermo is the beautiful wet grassland in the Czech Republic. What I appreciate about it is its diversity—it is fascinating how many plants can coexist at such a small scale. I recently moved from a wet to an extremely dry ecosystem – into the world of winter annuals in the desert and the Mediterranean Middle Eastern region in Israel. Here, I have experienced the wonderful sudden emergence of the carpets of the flowering annuals followed by the 'emergence' of research ideas and questions worth exploring.

I liked the Symposium in Palermo very much with its excellent scientific talks, relaxed atmosphere, nice people, beautiful nature and agreeable climate. Not to forget to mention the deliciousness, abundance and richness of the local cuisine. It was also fascinating to observe how everything worked out smoothly under the very characteristic Sicilian-style organization! Unfortunately I won't make it to Montana this year.

## Morgan Raath (South Africa)

**Honorable Mention for Oral Presentation:** *Do positive plant-plant interactions expand the upper distributional limits of vascular plant species on Marion Island?* (Co-author: Peter C. le Roux)

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While the impact of the abiotic environment on species distributions has been well-established, the influence of biotic interactions, particularly positive (e.g. facilitative) interactions, on species ranges remains poorly assessed. Indeed, biotic interactions may strongly shape species' distributions as they contribute to determining species' realized niches, potentially either constraining or expanding the range of conditions under which species occur. As part of my PhD research, my supervisor, Dr. Peter le Roux, and I examined whether biotic interactions at fine-scales (i.e. plant-plant interactions) scale up to shape species distributions. We used *Azorella selago*, a widespread cushion plant (i.e. a compact, hemispherical plant that creates favourable



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Right: *Myosotis nemorosa*, Left: *Tulipa systola*, *Erodium crassifolium* on the N slope in the Negev desert (Israel).





microhabitats by ameliorating abiotic disturbances and stresses), and the rest of the vascular flora from sub-Antarctic Marion Island as a model system. The elevational distribution of vascular plant species when growing in association or away from *A. selago* was assessed to test how the interaction with this cushion plant species affect species' ranges. Preliminary analysis revealed that the upper distributional limits of most species did not differ significantly in the presence and absence of *A. selago*. However, *A. selago* had a strong positive effect on the upper range limit of one species, and a marginally significant positive effect on another.

Therefore, although *A. selago* strongly impacts the fine-scale occurrence patterns and performance of some species, these local impacts could only scale up to shape the distribution of a subset of vascular plant species on Marion Island. This suggests that plant-plant interactions have the potential to expand species' upper distributional limits, although the influence of these interactions may be species-specific.

My study system is the sub-Antarctic Marion Island. Alpine systems such as Marion Island encompass the cold-limited portions of mountain environments (i.e. areas above the treeline) and extend from the tropics to the poles. Not only are alpine systems extraordinarily beautiful, but they are generally also climatically extreme with frequent, strong winds and cold temperatures. Because abiotic severity generally increases with altitude in alpine systems, these habitats are ideal for examining the outcome of biotic interactions along stress gradients as well as the ecological impacts of climate change.

The IAVS 2017 Symposium was a fantastic experience for me - one that I'll never forget! I really benefitted from it because I was able to engage with other experts in the field who provided me with valuable insights and suggestions for improvement of my work. I especially enjoyed the symposium workshops which greatly assisted in developing my writing and communication skills. I was also excited to have met with other young scientists in the

field of vegetation science from all over the world.

I am very interested in attending the 61st Annual IAVS Symposium in Bozeman, USA, and hope that my application for a travel grant is successful. I am excited by the opportunity to present more of my PhD work at this year's conference and also to network again with other researchers.

### Stephni van der Merwe (South Africa)

**Honorable Mention for Oral Presentation:** *Do plant-plant interactions affect functional traits?* (Co-authors: Michelle Greve, Peter C. le Roux)

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Last year at the IAVS Symposium in Sicily, I presented the results from my MSc study on the effect of plant-plant interactions on functional traits, specifically using cushion plants as known facilitators and nurse plants. I presented the results from Marion Island (sub-Antarctic tundra) in the Southern Ocean, although my research also extended to the montane grasslands in South Africa. The effects of plant-plant interactions, especially facilitation, on functional trait



My study site at Golden Gate Highlands National Park in South Africa.





© S. van der Merwe

Above: My colleagues Izak Blom and Rabia Mathakutha on Marion Island (*Azorella selago* cushion plants underneath them).

Below: Me (right) and Mia Momberg in Golden Gate Highlands National Park, South Africa.



© S. van der Merwe



expression have been poorly researched and we tried to shed some light on the matter. I found some interesting results. Contrary to expectations, in both systems few functional traits of beneficiary species responded to the interaction with cushion plants, and traits also did not respond to elevation. These results show that plant performance, as assessed by functional traits, has a limited response to the interaction with these nurse species. The effect of biotic interactions on functional traits, which have been shown to affect traits in other systems, may therefore be context-specific. It will be interesting to know which plant-plant interactions may provide selective forces for which traits and under which abiotic conditions.

Both systems had breath-taking views (a common phenomenon in South Africa), which is a fantastic bonus when working in the field. Marion Island is very special because access is largely restricted to researchers, therefore it is still pristine and beautiful. However, it is the montane grasslands in particular that I appreciate. Montane grasslands have so many hidden curiosities still to be explored. Grasslands appeal to me, because of the overlooked biological diversity, ecological and economic importance and interesting species of which I believe there are many still to be discovered in South Africa. It is a fascinating system to work in, and when hiking in the mountains, the beauty seems unreal, as our Finnish collaborators (who I met at the symposium) will attest.

The IAVS Symposium was a very special conference. Being around so many like-minded scientists, motivated me to continue my research career. I also received invaluable feedback and insight for future studies, since my results were contrary to expectation. The symposium is very inviting and as a student, I felt welcome among all the top researchers from around the world. It was well organized, the food was delicious, the people were friendly and overall it assured me that research, although challenging at times, has many perks, like travelling to these unique locations. I will definitely be attending the IAVS Symposia in the future, as it is a great opportunity to network, share your work and get feedback from brilliant minds, while travelling to interesting countries.

### Malgorzata Radula (Poland)

**First prize for Poster Presentation:** *Topographic wetness index predicts soil moisture better than bioindication with Ellenberg's indicator values* (Co-authors: Tomasz Szymura, Magdalena Szymura)

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At the IAVS Symposium in Palermo I presented the results from my first publication. Together with Magdalena Szymura and Tomasz Szymura we compared the ability of different indices to explain soil



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#### The preparation for the fieldwork.

moisture (SM). We assessed SM using topographic wetness index (TWI, calculated by 10 different flow routing algorithms) and Ellenberg's indicator value for moisture (EIV). We also tested the potential heat load and soil water capacity as additional factors that could potentially improve the SM explanatory models. We found that TWI calculated by any of the flow routing algorithms remains a better explanatory factor of SM than EIV, even if the latter was enhanced by the additional factors. We also observed that the inclusion of additional factors considerably increased the EIV ability to explain SM. In our opinion, this confirms that EIVs represent the complex interaction of vegetation with different environmental agents. Our results suggest that in complex terrain, under a relatively uniform climate, EIV for moisture could be replaced by TWI, which seems to be more accurate and cheaper method of SM prediction. But we stressed that the superiority of TWI over bioindication based on EIV should be assessed in areas, which are different in terms of land relief and climate.

The studies on the TWI and EIV were performed on data from the central European acidophilous and thermophilous oak forests (Sudety Mountains, Poland). However, this research was kind of a prelude





© M. T. Szymura

Above: Thermophilous oak forests in Sudety Mountains (Poland).

Below: Semi-natural grasslands in in south-western Poland.



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to my PhD project. Now, I continue my research on semi-natural grasslands in south-western Poland. My PhD thesis is focused on the influence of environmental factors and landscape heterogeneity on species diversity patterns. In my PhD project, I appreciate field work but I am always excited when it comes to data analysis. I love to see all the outcomes from my studies.

The IAVS Symposium in Palermo was a new experience for me because I have never attended an international conference before. I appreciated the opportunity to meet vegetation scientists, who I knew only from scientific books and publications. The meeting was also a great opportunity to see presentations and posters and be a part of exciting discussions. The Palermo city itself was also amazing and I can definitely say that my stay on the beautiful Sicily was an unforgettable time. The award for the best poster enabled me to plan the next IAVS Symposium in Bozeman and I am looking forward to this meeting.

## Liis Kasari (Estonia)

**Honorable Mention for Poster Presentation:** *Good dispersers disappear from European calcareous grasslands following the payment of extinction debt* (Co-author: Aveliina Helm)

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My main research topic is focused on taxonomic and functional diversity of degraded semi-natural grasslands, and their conservation and restoration. My study ecosystem has been mainly dry calcareous grassland, also called alvar grassland in Estonia. They are characterised by very shallow (< 20 cm) soils and high small-scale species richness, consisting of calciphilous, light-demanding and stress-tolerant species. For centuries alvar grasslands have been more or less continuously mown and grazed, which has kept the shrub cover low or even entirely absent. After the intensification of agriculture they have been mostly abandoned and rapidly overgrown by pine and juniper. Fortunately the large-scale restoration project 'Life to Alvars' was funded in 2014 in Estonia, aiming to restore 2500 ha of alvar grasslands by 2019.

In my latest study, which I presented in the IAVS 2017 in Palermo, I found that cessation of traditional management of semi-natural grasslands, and loss of their area and quality might not lead to immediately observable changes in biodiversity or community composition, a phenomenon known as extinction debt. My results suggest that such a delayed response of species richness of grassland specialists and functional diversity to habitat loss exists in four (Estonia, Latvia Abava region, Swedish mainland and Gotland regions) out of ten grassland regions in central and northern Europe, whereas in six regions (Belgium, Denmark Jutland and Zealand regions, Finland, Germany and Latvia Zemgale region) extinction debt has apparently already been paid. Compared with the regions where extinction debt was found, grasslands without extinction debt had similar total taxonomic diversity, but importantly, they contained more generalist than specialist species. I also found that specialist species had, on average, considerably lower dispersal abilities in grasslands where extinction debt had been paid. This indicates that species with better dispersal ability are more prone to disappear from European semi-natural grasslands following the payment of extinction debt. It is imperative that the occurrence or lack of extinction debt and related changes in species trait composition is clearly and explicitly conveyed to both conservation managers and environmental protection agencies. In regions where there is still an extinction debt, conservation efforts should focus on preventing loss of susceptible species and colonisation of generalists. In regions where extinction debt has already been paid, it is more important to avoid further habitat loss and to improve the functional connectivity of habitat patches.

The first time I had an opportunity to participate in the IAVS Annual Symposium was in 2013 in Estonia, when I was at the beginning of my doctoral studies. I found the conference very useful and mind-broadening, and definitely worth participating in regularly. So far I have had a chance to attend four times and hopefully I will have an opportunity to participate also in the coming years. I like that the conference covers a wide array of topics in vegetation science and always has high-quality presentations from experienced, but also young, scientists from all over the world.

## Francesca Jaroszynska (Norway)

**Honorable Mention for Poster Presentation:** *Shifts in biotic interactions with climate change in semi-natural grasslands in Western Norway* (Co-authors: Vigdis Vandvik, Siri Lie Olsen, Kari Klanderud)

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Is there any love lost between the dominant functional groups in Norwegian alpine grasslands? The answer – yes, and for some more than others! As you move from benign conditions at lower elevations to areas







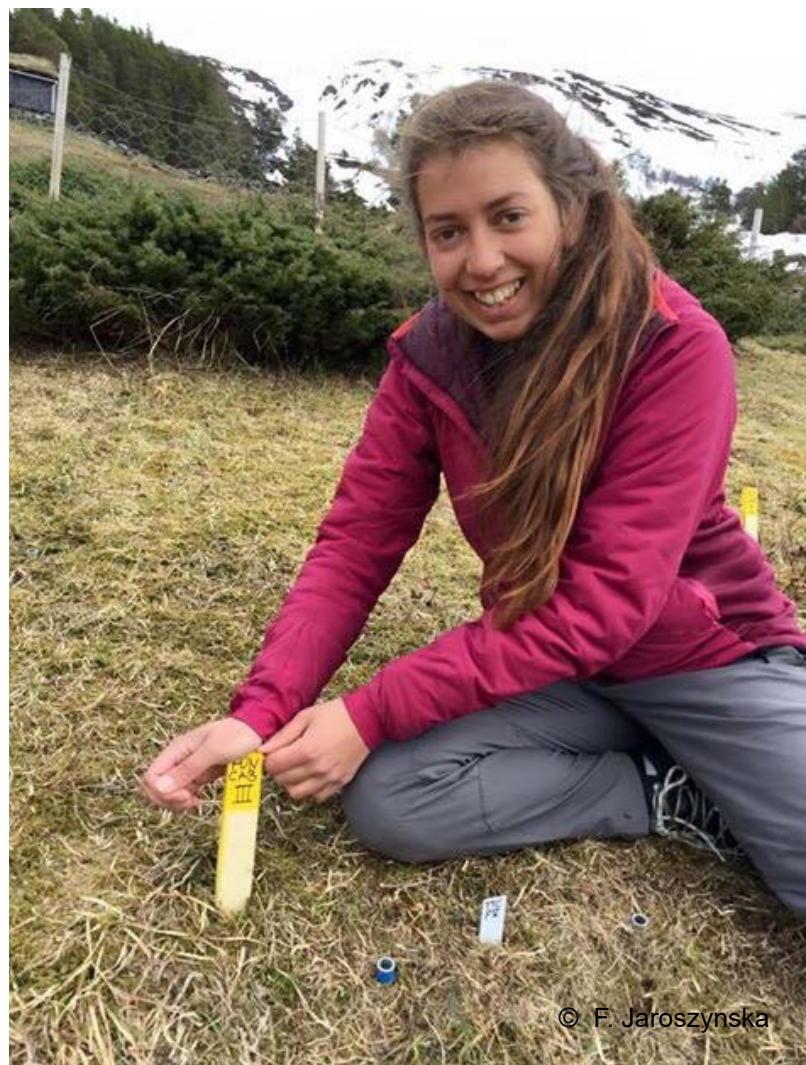
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Above: Well-preserved and continuously grazed Rajametsa alvar grassland in western Estonia.

Below: Setting up the first experiments at the beginning of my PhD.

of greater abiotic stress at higher elevations, the interactions between graminoids and forbs switch from competitive to facilitative. Using the large climate gradients available in the fjord landscape of western Norway, we manually (and annually) removed the dominant functional group, graminoids, and monitored the response of the forbs to test for the climate dependency of biotic interactions between these two groups. At warm sites, not only did forbs increase greatly in their cover when we took away their competitors, but they began to function more competitively. As the forb community reassembled after graminoid removal, it was those who are better competitors that increased in cover the most. On the other hand, at cold sites where abiotic conditions are more growth-limiting, forbs didn't increase in cover, and their functioning became more conservative. Thus, the love lost between the dominant functional groups is primarily under high abiotic stress.

I work predominantly in boreal and alpine grasslands in western Norway. These systems are extremely beautiful places to work, as I am often surrounded by steep-sided fjords and snow-capped mountains. However, I quickly learned why I am given heavy-duty oilskins before embarking on fieldwork campaigns – our wettest site gets ~3 m of rain annually! It makes me appreciate the sunny days all the more.



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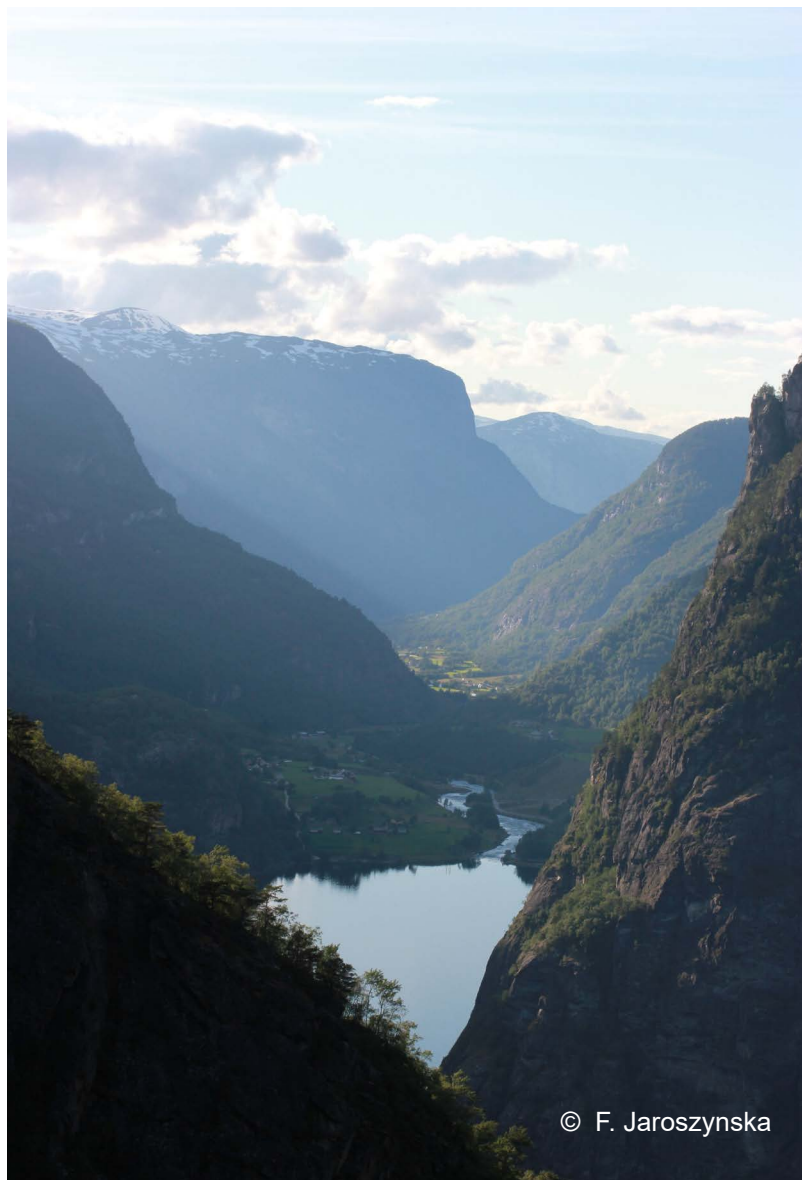


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Above: One of my twelve study sites in western Norway.

Right: Looking down into Aurlandsfjord.

The IAVS Symposium in Palermo was a great experience. It was a beautiful setting for a very stimulating meeting, and I particularly enjoyed being able to present my poster outside! I will not be attending this year's symposium (July is a busy time for fieldwork!), but I am looking forward to next year's.



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## Dedication to David Goodall (1914-2018)

By Andy Gillison and Ladislav Mucina

David William Goodall was born 4 April 1914 in Edmonton, England. So began the extraordinarily productive life of one of the world's leading scholars, practitioners and mentors. David graduated some 83 years ago and completed his doctorate at Imperial College of Science and Technology in 1939. Trained originally as a plant physiologist he was a senior lecturer in the School of Botany at Melbourne for four years (1948-1952) and moved to Ghana before taking up the Chair of Agricultural Botany at Reading University in 1954. He then joined the CSIRO as a Senior Principal Research Scientist in 1956 and around that time developed his initial approaches to numerically-based vegetation classification while with the CSIRO Division of Mathematics and Statistics from 1961-1967. David Goodall was one of the pioneers of quantitative plant ecology and much of his seminal work was based in Australia where he rapidly became a significant and leading figure, along with contemporaries Bill Williams and Peter Greig-Smith, in developing innovative, quantitative approaches to the analysis of plant patterns, resemblance, ordination and classification of vegetation. His passion for multivariate statistics fostered progress in ordination techniques and paved the way for its wide acceptance throughout the world of ecological sciences. From his early work on the adaptation of factor analysis and principal component analysis to ecological problems he continued to refine these techniques through non-linear approaches and the introduction of probability to provide a more realistic basis for the understanding of vegetation patterns. For those of us used to laptops, it has to be remembered that much of Goodall's initial research on numerical clustering and ordination was conducted on a hand calculator. This way, it took him several weeks to accomplish a simple-matrix PCA analysis, David once admitted.

In effect, Goodall's Australian work set the research agenda for the next generation of vegetation ecologists. His modelling skills were recognized by the United States National Academy of Science which appointed him as the Director of the International Biological Program's Desert Biome Program from 1968-1974. Aside from his modelling expertise, David published (within period of 1936-2014) more than 130 scientific papers and became widely known as the Editor-in-Chief of the 38 volume "*Ecosystems of the World*" (Elsevier, Amsterdam) – a massive scholarly undertaking over 34 years. When his academic and administrative roles as a Professor or Honorary Staff member in several universities and as a leader in field-based research are taken into account, his influence on the discipline of ecology has



© L. Mucina

D. Goodall during a field excursion in South Africa, 2008.

been immense. David's field experience covered an extraordinary spectrum of vegetation that included among many others, detailed ecological studies of hot desert chenopods to lichens in Swedish Lapland. He was a member of 14 learned societies and his many prestigious awards included promotion to *Doctor Honoris Causa* at the University of Trieste, Italy in 1990. He received the Distinguished Statistical Ecologist Award from the International Association for Ecology in 1994, and in 1997 he was made an Honorary Member of the International Association for Vegetation Science (IAVS), the organization's highest award. ESA members will know that he received the Gold Medal of the Ecological Society of Australia in 2008. At all stages of his term in



Australia, David maintained close ties with the ESA and was a valued mentor to many ESA members. Goodall turned 100 in 2014 when a book of scientific contributions resulting from the Annual Symposium of the IAVS in Perth was dedicated to him and the following year was honoured in a special issue of the journal *Plant Ecology*. In the 2016 Australia Day Honours list he was made a Member of the Order of Australia for “*significant service to science as an academic, researcher and author in the area of plant ecology and natural resources management.*”

David was an outstanding illustrious member of the scientific scene of Western Australia for a long time. From his home in Yanchep and he edited the famous book series, and drove to work at the Edith Cowan University in north Perth almost daily for many years. A beacon of passion for science in service to the scientific community at large, he was an inspiration to all his colleagues and students alike. After his retirement he did exactly that what a scientist passionately in love with science should do ‘stay afloat’. A lesson for all to maintain a fresh and active mind after the pressures of academic life: challenge yourself, and keep an open mind to the changing world. David did exactly that... and still

was able to publish aged 100! What a remarkable role model! A family man, David was married three times and had four children and 12 grandchildren. In later life, Goodall advocated for the legalisation of voluntary euthanasia, being a member of assisted dying advocacy group Exit International for over twenty years. Aged 104, Goodall chose to end his own life with the aid of physicians in Switzerland. Euthanasia advocates said that his quality of life had deteriorated, and he publicly expressed regret about living to such an advanced age. Before the lethal injection ended his life on 10 May 2018, to an assembled international media and in a strong voice, he sang in German, a passage from Beethoven’s 9th symphonic version of Schiller’s ‘Ode to Joy’. Perhaps an enduring message to others, epitomising his unwavering attitude to life. Unlike old soldiers who “never die but only fade away” David Goodall went out with a characteristic bang.

**Andy Gillison**, *ESA President 1981-2, former colleague and friend*

**Ladislav Mucina**, *Professor at The University of Western Australia and a much younger old friend of David’s*



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David Goodall with WA Minister for DPAW Albert Jacobs May 2014.



# Exchanging vegetation data: developing tools for the ‘Veg-X’ standard and how you can help

By Miquel De Cáceres, Sebastian Schmidlein and Susan Wiser

There is currently an enormous amount of data about the vegetation found around the world. In many cases these are data from vegetation plots, established for specific studies or that are part of collective large-scale observation efforts, such as floristic or forest inventories (Wiser, 2016). As of March 2018, the Global Index of Vegetation-Plot Databases (GIVD; [www.givd.info](http://www.givd.info)) (Dengler et al., 2011) contained information about 260 vegetation databases. However, most of these (and others for personal use not included in GIVD) have their own vocabularies, definitions of fields and data, hence their own ‘idiosyncratic structures’. This is not an issue for studies drawing data solely from large vegetation-plot databases (e.g. VegBank, EVA, sPlot), as these require researchers to only understand a single data structure. Furthermore, some international plot networks have alleviated data exchange problems caused by sharing the same field sampling protocols and database structures (Condit et al., 2014). However, in many cases where a researcher wants to integrate a range of different data sources for new analyses, disparate structures and field protocols have to be unified, a time-consuming, error-prone and frustrating task. For biodiversity observations (e.g. from herbarium records) the Darwin Core data exchange standard (<http://rs.tdwg.org/dwc/>) has been key to successful data harmonization and reuse in combination with the GBIF ([www.gbif.org](http://www.gbif.org)). Clearly, analyses requiring the integration of vegetation data from several sources are currently hampered because there is neither an internationally recognized data exchange standard (analogous to Darwin Core) nor corresponding tools to easily use such a standard.

In 2003, the IAVS Ecoinformatics Working Group (EWG) decided to promote the development of a standard to exchange vegetation-plot data. An international collaboration produced a draft standard, Veg-X, for data exchange implemented in an XML Schema (Extensible Markup Language). Veg-X was designed to be compatible with the most commonly used vegetation databases (Wiser et al., 2011). The standard distinguishes between the observed entity (e.g. a tree or taxon) and the act of observation (i.e., the measurements), and can accommodate both data from individual plants (e.g. tree diameters, heights, etc.) and abundance data characterizing a taxon (e.g., the percent cover of a species), including the position of plants in vertical layers. The standard also supports the repeated sampling of

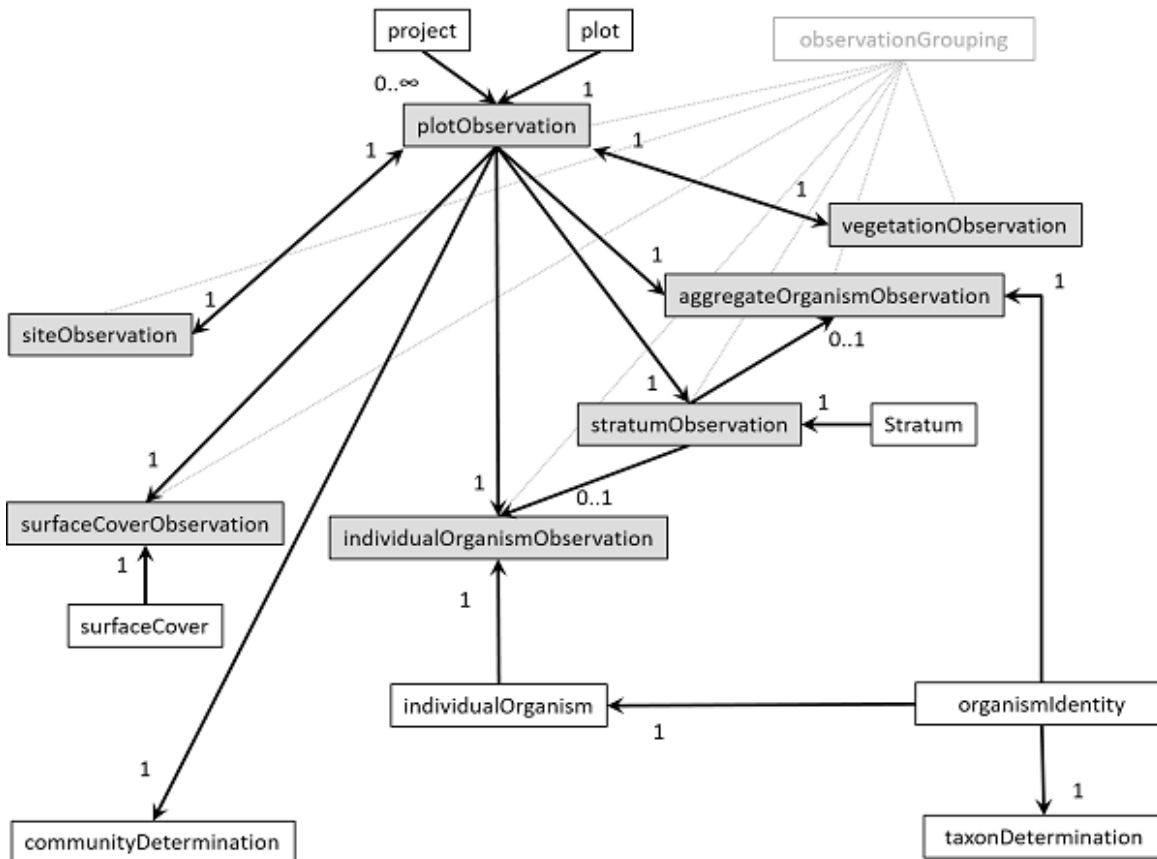
organisms and plots, and grouping of observations by non-temporal criteria (e.g., from defining sub-plots). All elements of the XML schema are clearly defined to facilitate interoperability via mapping fields from source data structures into Veg-X.

One of the impediments to the adoption of Veg-X has been its complexity, which is required to accommodate the wide variety of ways vegetation plot data are collected and stored. An analogous situation exists for the Ecological Metadata Language (<https://knb.ecoinformatics.org/>), where its sophistication has been a barrier to widespread use. To ensure that the Veg-X standard is adopted by a large community of users, it is important to develop tools to facilitate interoperability, the integration of documents, harmonization of units, etc. Thanks to support from IAVS, in 2018 we began to develop an R package to perform these tasks. It contains functions to import, integrate, harmonize and export vegetation data using the Veg-X standard. The development of the package, inventively also called *VegX*, has been carried out in parallel to a major revision of the standard itself to simplify it. The files conforming the Veg-X XML schema (version 2.0) and the R package *VegX* can be downloaded from a GitHub repository (<https://github.com/miquelcaceres/VegX>). A detailed description of the schema and a user manual of the package can be found at <https://miquelcaceres.github.io/VegX/>.

Although it is already functional, the *VegX* package is at a development stage where it is necessary to confirm its usefulness for importing and integrating different types of data sources. As such, we appeal to all of you vegetation scientists interested in testing the functions of the package to try and import your data (e.g. from Excel spreadsheets or ASCII text files). If you are interested in helping you can send us example datasets and R scripts, as well as descriptions of problems or doubts that may have arisen during the process of testing the data import, directly to us via email or by posting issues on the GitHub site. Example datasets can be very small, since we are only interested in their data structure. This information will greatly help us improve these tools.

Veg-X is mainly intended to ease direct data exchange but it could also facilitate data access on public repositories such as figshare (<https://figshare.com/>) or DRYAD (<https://datadryad.org/>) as a complement more centralized structures such as





Main Veg-X (ver. 2.0) elements and their logical relationships. Arrows indicate that an identifier of the origin element is referenced in the destination element. Accompanying numbers indicate the number of instances of the origin element that are allowed to be referenced in the destination element. Observations are in tinted boxes.

the large vegetation plot databases VegBank, EVA etc. (which could then be fed by the repositories). Both approaches together, the ‘grassroot’ public repositories and more administered databases, could further the long term objective of the Ecoinformatics Working Group to promote that vegetation data from scientific studies is archived and available for reuse. To promote the use of public repositories, we are also considering the development of interactive web applications in R Shiny (<https://shiny.rstudio.com/>), which would use the *VegX* package internally. Furthermore, software tools for collecting field data can include Veg-X as an export format. One such tool, an Android app called *Vegapp*, is about to be published on Play. Such applications facilitate the transformation of data in the Veg-X standard for users who are unfamiliar with R. We believe that a widespread adoption of Veg-X and the other tools mentioned here (the XML schema, R package, documentation, web-based applications and data collection tools with Veg-X export) could contribute substantially to the exchange, harmonization and reuse of vegetation plot data.

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