IAVS

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Subalpine pastures of the Monti Sibillini (Castelluccio di Norcia)

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Editorial

By Irena Axmanová

Shiwani, new chair of the Social Media Comittee

I have always been interested in the reasons or stories why people became members of IAVS. Some are driven by personal motivation, the desire to be a member of a recognised international society, and they actively find their own way to become part of it. For many, the turning point is their first IAVS symposium. Encouraged by a supervisor or upon recommendation of colleagues, they register and become members to get the reduced fee. After they experience the atmosphere of the symposium, they often realise that this is a community they would like to belong to long-term. However, I believe that for the majority of us, the key moment was when someone personally told us about IAVS, shared their enthusiasm, and simply inspired us. Do you remember someone like that? Find out who inspired John Rodwell in the following pages.

At present, IAVS has about 600 members from countries all over the world. But even more people are connected through working groups and sections, such as the European Vegetation Survey (EVS) or the European Dry Grassland Group (EDGG). Many of their members take part in the group events, but are not formal members of IAVS. I understand that membership fees might discourage someone. On the other hand, while many costs are rising, the IAVS membership fees have not increased in recent years. Perhaps the bigger issue is that we do not talk about IAVS enough, and our activity on social media is rather low.

Let us try to change this together so that more people learn about IAVS and its activities! We encourage you to share news from the different working groups and sections, workshops, and excursions. Any contributions related to IAVS can be tagged with #IAVS, making them easier to find. If you have a message that should be spread across several media channels at once, you can contact the IAVS Social Media Committee at socialmedia@iavs.org. They will ensure that your post appears in the members' newsletter, on the IAVS website, and on our social media accounts: Facebook, Instagram and Bluesky. If you want to receive updates and links to activities directly from the working groups, you can sign up through your membership account here: Select engagement with working groups.

Since this spring, we have had a new chair of the Social Media Committee, Shiwani. And I would like to wish her good luck with promoting the IAVS!

Biosketch of Shiwani

I am an Ecologist and fieldwork enthusiast pursuing a PhD in Human Ecology at the School of Human Ecology, Dr B.R. Ambedkar University Delhi, India. My research examines the dynamics of the social ecological systems and climate change within a high-elevation wetland ecosystem in the Trans-Himalayan region. I have been engaged in this research domain for the past six years. I earned my Master's degree in Environment and Development from Dr B.R. Ambedkar University Delhi, India and my Bachelor's degree in Zoology from the University of Delhi, India.

I commenced my career as a Research Assistant at the Centre for Urban Ecology and Sustainability, focusing on the restoration of an urban wetland in Delhi. I have also taught students at Ambedkar University Delhi in subjects such as mapping and visualisation as well as environmental issues and challenges. In addition to my academic responsibilities, I am interested in the study of ecological networks and climate change, which has prompted me to undertake freelance projects on network dynamics and volunteer for SemanticClimate, an international initiative promoting open data science principles as a pathway to climate solutions. Aside from research and academia, I enjoy dancing and hiking. I am a trained classical Kathak dancer. As a member of the IAVS and chair of the social media committee, my objective is to enhance the visibility and engagement of IAVS across platforms, extend the reach of IAVS initiatives to wider audience, and establish an active global network of members, particularly from underrepresented groups. After all, we are all six nodes apart.

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Call for Historical Photos

By Irena Axmanová

Do you have old photos of vegetation scientists taken in the field, during excursions, at IAVS or working group meetings?

We are looking for pictures from the previous century that capture the spirit of our community – whether it is sampling of vegetation plots, exploring interesting sites during excursions or enjoying lively conference moments.

These images are valuable not only as memories but also as a record of the history of vegetation science. Selected photos may be featured in the IAVS Bulletin, used in contributions about history of individual working groups and on our social media channels.

Please send your scans or digital files (with a short description, year, and names of people if possible) to me, the editor of the bulletin (email at the last page) or ask me for a link to our archive.

All pictures will be archived in the IAVS repository.

Help us preserve and share the history of vegetation science – and maybe spot a younger version of your colleagues (or even yourself)!

First European Vegetation Survey meeting in Rome, 1992.
Standing, from left to right: Giuliano Fanelli, Javier Loidi, unknown man, Victor Westhoff, Laco Mucina, Joop Schaminée, Emilia Poli, John Rodwell, unknown man, Helmut Lieth(?), John Hopkins, unknown woman.
Squatting: Francesco Macchia, Gioachino Ferro, Ayzik Solomeshch, Sandro Pignatti

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33rd Conference of the European Vegetation Survey

28th April – 2nd May 2025, Perugia, Italy

By Corrado Marcenò on behalf of the organising committee

Introduction

The 33rd European Vegetation Survey (EVS) Conference was held in Perugia, Italy, from 28 April to 2 May 2025, under the overarching theme: "Vegetation of Europe: Diversity, Dynamics, Conservation, and Restoration." The conference took place at Hotel Giò (Via Ruggero D'Andreotto 19, Perugia), and was organized by the Local Organising Committee led by Corrado Marcenò and Roberto Venanzoni. The event officially began on 28 April with participant registration, followed by Welcome Party — the traditional "Porchettata" — held at the Hotel Giò Wine e Jazz Area.

Opening Ceremony and Keynote speakers

The Opening Ceremony, held on 29 April, featured welcome addresses by Corrado Marcenò (Chair of the Local Organising Committee), Milan Chytrý (EVS Secretary), Jorge Capelo (EVS Conference Coordinator), and Alceo Macchioni (Director of the Department of Chemistry, Biology and Biotechnology, University of Perugia).

The scientific program of the conference featured six plenary talks:

- Sabina Burrascano (Sapienza University of Rome, Italy), who opened with a talk titled "Beyond trees: the multi–taxonomic diversity of European forests."
- Josep Padullés Cubino (Autonomous University of Barcelona, Spain) presented on "Community Phylogenetics in Vegetation Science: Past, Present, and Future."
- Gianluigi Ottaviani (National Research Council, Iret, Porano, Italy) followed with "Ten years of plant functional biogeography: what are we gaining?"
- Zdeňka Lososová (Masaryk University, Brno, Czech Republic) delivered a compelling presentation on: "Cities as a human contribution to the diversity of nature."
- Ladislav Mucina (Murdoch University in Perth, Western Australia) introduced his "Zonobiome System for Europe."

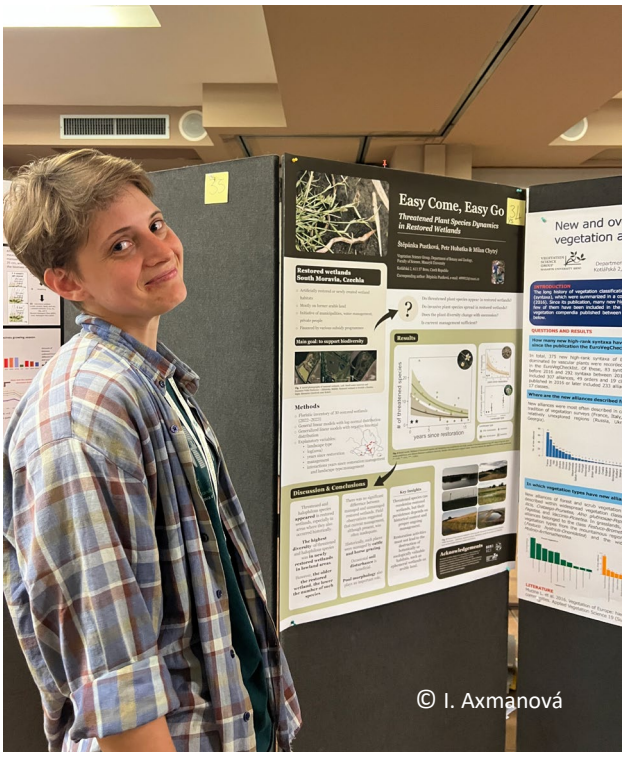
- A special plenary session was dedicated to conferring the EVS Honorary Membership to John Rodwell, in recognition of his outstanding contributions to vegetation science and European vegetation classification. The session was preceded by an Introductio et Laudatio by Joop Schaminée, and concluded with John Rodwell's Honorary Speech, titled: "Aftermath."

Talks, poster sessions, Best Oral Presentation and Poster Award

The conference featured a total of 53 talks and 61 posters, organized around five main themes: Patterns and Dynamics of European Vegetation, Vegetation Classification of Europe, Invasive Species: Challenges and Impacts on European Vegetation, Vegetation Monitoring and Mapping, and Biogeographic Patterns of European Vegetation.

A total of 158 participants from 28 countries attended the event. The most represented countries were Italy (36 participants), the Czech Republic (22), Hungary (10), Ukraine (9), and Poland (8). To support the nine Ukrainian participants residing in Ukraine, their conference fees were waived. Additionally, ten participants received support through IAVS travel grants, including: Bulgaria (2), Ukraine (2), Bosnia & Herzegovina (1), Croatia (1), Germany (1), Serbia (1), Slovakia (1), and Spain (1).

During the 2025 European Vegetation Survey (EVS), a competition was organized to recognize outstanding



The winner of the Best Poster Award Štěpánka Pustková

The winner of the Best Oral Presentation Award Kryštof Chytrý together with main organiser, Corrado Marcenò

contributions by young scientists. The winner of the Best Oral Presentation Award was Kryštof Chytrý (University of Vienna). As a prize, Kryštof received a free registration fee for the next EVS congress. Honorary Mentions were given to Lucia Čahojová (Slovak Academy of Sciences) and Giacomo Quattrini (Marche Polytechnic University). The winner of the Best Poster Award was Štěpánka Pustková (Masaryk University). Štěpánka was awarded a free article processing charge (APC) for publication in Vegetation Classification and Survey (VCS), offered by Pensoft Publishers. Honorary Mentions were given to Martina Biagioli (University of Perugia) and Natalia Mazurek (University of Wrocław).

EVS Business Meetings and Invitation to the 34th EVS Conference — Clermont-Ferrand (France)

On Thursday, May 1, the Business Meeting of the European Vegetation Survey (EVS) took place. During this meeting, the Steering Committee and other colleagues informed participants about past, ongoing, and upcoming activities. Gilles Thébaud and Frédéric Bioret officially invited all participants to the 34th EVS Conference, which will be held in Clermont-Ferrand (France) from 7 to 11 September 2026.

Mid-Conference Excursions

On Wednesday, April 30, two excursions were held. The first one explored the Colfiorito wetlands and the high plains of the Monti Sibillini (Castelluccio di Norcia), and was led by Alessandro Silvestre Gristina, Riccardo Guarino, Corrado Marcenò, and Salvatore Pasta.

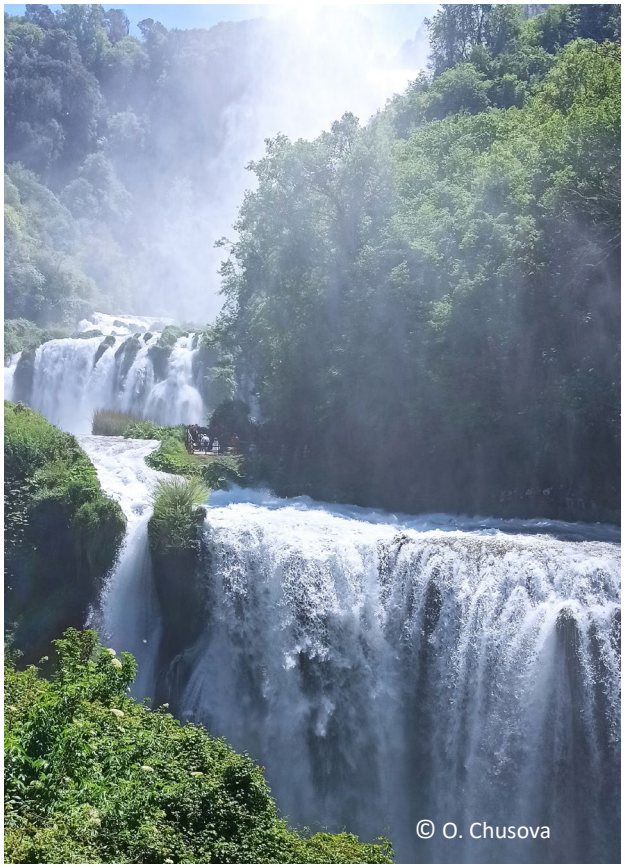
The excursion included a visit to restoration sites of *Eriophorum latifolium* populations and a walk around the marsh, observing hydrophyte communities of the *Potamogetonion* and *Ranunculion aquatilis*. Participants also had the chance to see the helophyte communities of the *Phragmition communis* and *Glycerio-Sparganion*, as well as nitrophilous vegetation of the *Balloto-Conion maculati* alliance.

The excursion then moved towards the Monti Sibillini. As we ascended, we observed forest communities dominated by *Quercus ilex*, gradually replaced at higher elevations by communities of *Ostrya carpinifolia*, and finally by beech forests. The excursion concluded in the subalpine pastures overlooking the Pian Piccolo plateau.

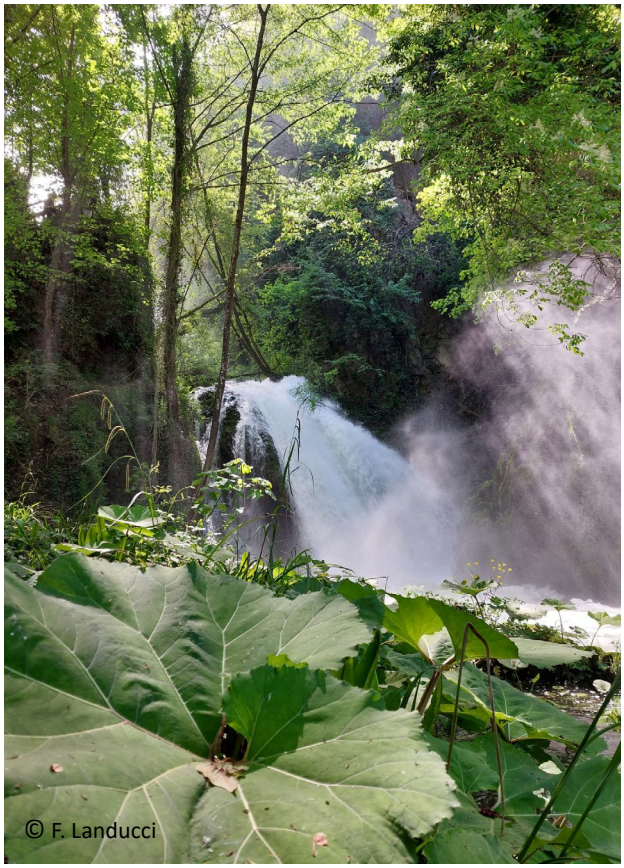
The second excursion was at Marmore waterfalls and Piediluco Lake, led by Roberto Venanzoni and Flavia Landucci. In the morning, the participants could explore the area around the spectacular Marmore waterfalls, the tallest artificial waterfall of Europe, created during the Roman period. There, the participants could observe one of the most extensive Italian tufa formations dominated by the vegetation of the alliances *Cratoneurion commutati* and *Adiantion*.

In the afternoon, the excursion moved to Piediluco Lake, where the participants could see aquatic and wetland communities that are rare in central Italy, such as those with *Cladium mariscus* or *Nuphar lutea*.

Participants of the mid-symposium excursion at high plains of the Monti Sibillini (Castelluccio di Norcia)



Marmore waterfalls



Marmore waterfalls

Piediluco Lake

Beech forests of the Monti Sibillini (Castelluccio di Norcia)

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Laudatio for Professor John Rodwell. The first honorary member of the European Vegetation Survey

By Joop H.J. Schaminée

Once upon a time… is a well-known phrase in the title of several classic movies, *The times they are a-changin'* is a famous song by Bob Dylan, and when John Rodwell entitled his speech at the 2025 EVS confererence *Aftermath*, I was somehow prompted to reflect on the inevitable changes in our lives: we all start at a certain moment, do the best we can, and finally it stops. In the Oxford English Dictionary, there are two meanings of the word *Aftermath*: (1) a second crop or new growth of grass after the first has been mown or harvested, and (2) a period or state of affairs following a significant event, especially when that event is destructive or harmful. We have heard more about this in John's speech. And finally it stops. In my laudatio, I hope to make clear that this is a much too negative perspective: it really depends on your achievements.

I want to address some of John Rodwell's contributions to our *scientia amabilis*, making clear that it was an inevitable decision to appoint him to become the first honorary member of the European Vegetation Survey. But before that, I will shortly dive into history, starting with a meeting at the University of Lancaster in the autumn of 1991, when five people sat together and discussed the possibilities of a new initiative, creating a European framework of dedicated vegetation researchers. Apart from John Rodwell and myself, Sandro Pignatti, Hartmut Dierschke and Ladislav Mucina took part in that meeting. It was decided to come together, for the first time, in Rome in March 1992, in the *orto botanico* in Trastevere, where Sandro was our host. There is a historic picture of the group of about twenty people at the Forum Romanum, with Sandro Pignatti sitting on an old stone a bit to the right and John Rodwell standing in the back with his characteristic bow tie. *Editors note: this photo is reprinted on p. 3 of this Bulletin.*

From that start, John has been one of the driving forces of our initiative, creating attention and recognition, among others by a number of articles in various journals. In this respect, I would like to cite from an article in the *Journal of Vegetation Science* from 1995, where the abstract summarizes our goals. It was mentioned that at that time already 25 countries were represented in our European network and were committed to common data standards in phytosociological survey, the development of compatible software for data analysis and mapping, the encouragement of national programmes, and the development of an overview of European plant communities. Also plans for the future were outlined, most notably the production of a book *The Vegetation of Europe*. There are still dreams to be dreamed!

In November 1989, the fall of the Berlin Wall started the destruction of the Iron Curtain between western and eastern Europe. One of the great moments in history. In the same period, the Brown Blanket between Britain and the continent was torn into pieces. At that time, national vegetation programmes were running in countries like Germany, Austria and the Netherlands, all building on old and long traditions. In the United Kingdom, this was quite another story, without hardly any tradition in vegetation classification. Here, John Rodwell and his Unit of Vegetation Science carried out the *National Vegetation Classification*, not only resulting in a series of five books, but also creating a national vegetation database, compatible software and nation-wide application of the classification system. The first volume appeared in 1991, celebrated at the memorable meeting in Lancaster, the fifth and final volume in 2000. John invited Stephan Hennekens to support him in the digital world, speaking about crossing borders. They together set up the Darwin Initiative and organised workshops to initiate related projects and programs in eastern Europe, which became a great success.

We all know the EuroVegChecklist and its accompanying 'Hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities', comprising — with regard to the vascular plants — 109 classes, 300 orders and 1108 alliances, that was published in 2016 in *Applied Vegetation Science*, under the leadership of Ladislav Mucina. But also this milestone, as mentioned before, one of the goals of our European Vegetation Survey, has its history and precursor. And... John Rodwell was the initiator. In an attempt to develop a more coherent picture of vegetation across the whole of Europe, he challenged Ladislav Mucina, Sandro Pignatti and myself to gather for a couple of days at Sandro's office in the *orto botanico*, to compile such a preliminary overview, based on available literature and our expert knowledge. This resulted in The *Diversity of European Vegetation*, published in 2002 by the Dutch government, featuring 80 classes, 233 orders and 928 alliances.

The third major achievement I want to address is the bridge that was made between the European Vegetation Classification and the policy makers in Paris, Brussels and Copenhagen. And again, John Rodwell was one of the initiators. In *The Diversity of European Vegetation*, a link was provided between the European classification system and EUNIS, the European Nature Information System. Cross references to vegetation types provided floristic and ecological content to the EUNIS types, and as such, a foundation for European nature policy. This approach was further elaborated through projects from the European Environmental Agency and linked to the Habitats Directive of the European Union. It ultimately also evolved in the *Red List of European Habitat Types*, commissioned by DG Environment of the European Union, under the guidance of John Rodwell, John Janssen and (for the marine habitat types) Susan Gubbay.

Summarizing, without any doubt, we may state that John Rodwell has strongly influenced the development and status of vegetation science in Europe, and therefore — to paraphrase a famous Dutch soccer player — "it is logic" that he becomes the first honorary member of the European Vegetation Survey.


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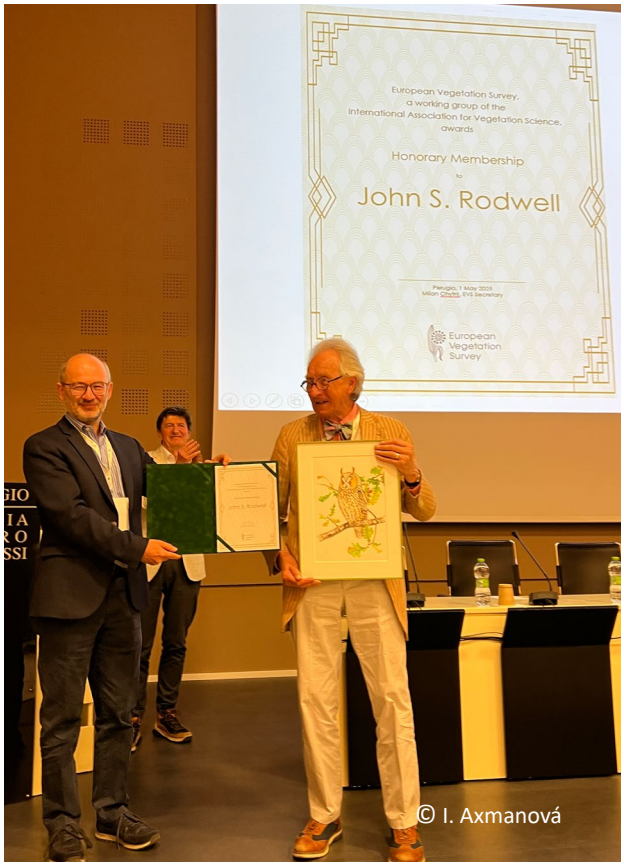

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Meeting John Rodwell

By Irena Axmanová

Department of Botany and Zoology, Faculty of Science, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic

John Rodwell is a prominent British vegetation scientist best known for his leadership in developing the UK National Vegetation Classification (NVC) system. As the editor of the five-volume British Plant Communities, John Rodwell played a key role in standardizing the classification and description of plant communities across the UK. His work has had a lasting impact on ecology, conservation, and land management in Britain but also across Europe since he had been for a long time the secretary of the European Vegetation Survey (EVS), working group of the International Association for Vegetation Science (IAVS). He widely promoted standardized vegetation survey methods across Europe and inspired many colleagues. He had been awarded the Honorary Membership of the IAVS (2010) and EVS (2025).

I had the pleasure of meeting him and asking him a few questions.

John, since when are you a member of IAVS and EVS? Who or what motivated you to become a member?

I should start really with EVS rather than IAVS because that for me came earlier. Maybe you do not know, but this morning Sandro Pignatti has died. Sandro was hugely important in inviting me and other people to start the EVS. I was in, from the beginning, 1992, when we had, I think about 12 or 15 people only, an amazing gathering in Rome, to think about what Sandro called a new spirit in phytosociology. So, I, and we owe a great deal to him. Of course, he was a key member of IAVS before that. And EVS was an IAVS initiative which was discussed among the council. And then, Sandro took it forward. So, that started for me in 1992. And I managed to go to all but two EVS meetings since that time. I had become sort of secretary of the coordinating committee early on and was doing that for quite a long time until Milan Chytrý took over. I have been really encouraged by my own opportunities in the EVS to meet so many interesting people. So that was my start. And then I got involved in IAVS and my group here in Lancaster hosted a meeting of IAVS in 1997. And in those days IAVS was a very different institution, really still basically phytosociological in its focus and very much European with some wider participation from America, South Africa, for example, but not so much Australia and the Pacific. So not very huge meetings and very much a traditional gathering of phytosociologists. But since then, of course, it has become transformed.

I do not go to symposia every year anymore. Of course, now it is more difficult for me because I do not have a position. So, the cost is considerable. But I keep a watching eye, and I am always grateful for whatever help I can get to go. I have become an old guy, you know, I mean, I am not just famous as these people like Sandro, but I have become now an older member of the IAVS and I am greatly encouraged by the young participation.

And it was very generous of IAVS to make me a life member at Lyon conference 2011. It should have been


© M. Chytrý

earlier in Mexico, but, you may remember there was a huge volcanic eruption just before the Mexico meeting. So very few people flew across the Atlantic, and the award had to be postponed. Initially, IAVS was European focused in its meetings, but it is very nice now that it is both inside Europe and outside Europe.

Do you think it is important to have an international vegetation science society?

Britain is a very insular country. You know, even before Brexit, we have been pretty insular and we have a very thriving British ecological society. In my younger days there was almost no interest in having a wider European or worldwide conversation. Among British ecologists, individual scientists had collaborations with particular

people elsewhere in the world, but there was not a kind of awareness of the need to talk internationally. And that is not really changed anyway, because almost no British ecologists go to IAVS meetings. I am the only one in the EVS initiative, sometimes there were two, and previously there have been two or three. But it is extremely difficult to persuade British ecologists just to look a bit more widely, to consider themselves even European, you know?

And I think partly with the EVS, and in a way with IAVS, the supposition was that they are phytosociological. So, there is a kind of deep, emotional or psychological, antipathy to phytosociology and non-British ecology. They think it is, French and German in particular, rigid, preoccupied with syntaxonomy and so on. So that put people off. But, it is not the case now, it has completely changed. Nowadays all types of vegetation ecology are considered and the focus is much broader, you have got people really at the cutting edge of different kinds of science, and that is really healthy. And I think it is very sad that British ecologists do not see it. We fit into this new frame. And the opportunity to travel and just to meet other ecologists and to go on wonderful excursions, just to broaden people's minds would be great. And I think now IAVS really has an international character. The idea of having somebody from any country just to talk openly with us, talk across the Atlantic, and across the Pacific. So that is, I think that for me, that is one of the real appeals.

Would you encourage young scientists to become part of the IAVS society?

What I like about IAVS is that it is cross generational. So you get fogies, you know, the English word fogy, it means a dory old guy, you know, you get old, older people from the older generation, most of whom have died off, of course, that, I mean, people like Sandro, people like Matuszkiewicz from Poland, Georg Grabherr, Rivas Martínez and so on. Almost all of these have died. But there are also young people. And it was always possible within the IAVS frame to meet young people. And also, one of the things that was very striking about both EVS and IAVS is that nobody had a false sense of respect for older people. You know, the idea that you must not ask a question of somebody very famous, because, you know, what they say is gospel truth. IAVS and EVS are completely free of that. So, anybody, even from the beginning of EVS, could stand up and ask Martínez some question. They might be a bit surprised actually, that there is an upstart youngster with no experience or a first-year PhD student asking. But they could ask the question.

I got to know Milan Chytrý and his group because of this Darwin project when they came to, and that was, that was already in 1995. So, I mean, that was only five years after Czech and Slovak Republics became young democracies again. And it was great to be in from the beginning and see people grow and mature and acquire huge confidence. I mean you Czechs are extraordinary. The creativity was obvious. So I think that it is great that IAVS has been a sort of hatching ground for this sort of thing. And I hope it goes on.

Which topics of vegetation science are most interesting for you?

I am not a phytosociologist, by instinct or training, actually, because we did not do that sort of thing here. And when my team produced *British Plant Communities*, the description of the syntaxa here in Britain, it was quite clear from the brief we got that it should be an ecological book, an ecological system, which was to help people understand patterns and processes. And that is where I began as an ecologist, thinking about the structure of plant communities, how they relate to the environment and how they change with shifts in climate, or changes in management for example. So that has been my focus and the spirit of my work, together with one of the supervisors of the project, a guy called Donald Pickett, who has now died. He was the world expert on *Tilia* actually so he had a taxonomic interest, but he was a terrific field ecologist as well. So we wanted to produce a book which was useful for practicalities, the management of vegetation and the protection of vegetation by designation, understanding what vegetation types there were, of course. So that is one mainstream.

But the other real interest I have is in the relationship between vegetation and culture. Because a lot of my work outside *British Plant Community* producing have just been concerned with traditional hay meadows for example. All our grasslands are more or less anthropomorphic. They are affected in one way or another by human intervention. I mean, our mountains are very puny. The biggest mountains we have only just reach a thousand meters. So, we have got some arctic alpine grasslands, but even these are grazed by wild mammals or farm animals. I am very interested in how people have managed vegetation, both traditionally and of course now much less so. And so that interests me greatly. And of course, it is hugely important for nature conservations too. Also, in our group we were always preoccupied with projects which were about nature conservation and protection.

One of the examples I used in Perugia was this question of the intricate relationships between grazing and the survival of something like the marsh fritillary butterfly which depends on the very particular structure and composition of vegetation that is dependent on grazing by particular kinds of animals. So that is, I think that kind of intricacy I like, and that has a kind of artistic side too, really, because I am very interested in the way people relate to vegetation, you know, for aesthetic reasons. And there is a historic aspect.

Maybe too much to manage in one head, but it means you can shift your interest. Of course, now I am not paid to do anything, so I am a bit free to think about anything, even if I do not get research funding to do things.

How do you see the future of vegetation science in Britain?

Maybe it is difficult for us in this country to pass our knowledge on, really, because there is much less interest now in the sort of ecology that I like. As it shifted into all sorts of other realms. And I worry about the future of vegetation science in that respect, actually from the British point of view. As a young boy, I went out with amateur people who taught me things. And I had a very traditional kind of university training in botany and then a good PhD supervision. But it is now hard for schoolchildren to have the sort of natural history training and interest that I had, or to go on and do a degree in botany. Of course, they see television programs with the wonderful David Attenborough. And many kids are very alert about the importance of climate change and get worried about it. But you cannot do a degree in botany again. You can do a degree in biological sciences and not see any live plants at all, except those used in the experiments. And also, there is another preoccupation with health and safety that is, you cannot risk taking students out to look up karstic landscapes in case they fall down the cracks, and then the university gets sued for, because they have got a broken leg or something. So that has become really limiting in being a bit adventurous. The other problem is, will there be jobs? Many graduates come out of the universities with a degree in biological sciences, and there is nothing for them to do. Because the number of jobs relevant to their training is limited. And of course, we are not part of the Natura 2000 habitat scheme anymore, although we still have this inherited administration since being part of the European Union.

Many people of my generation have disappeared now because they have retired from nature conservation. This means that the lack of expertise is really worrying. There is a lack of knowledge, or data knowledge wisdom, whatever the wisdom is. That sort of instinctive accumulation of experience. This is very hard to find. And I meet youngsters working for nature conservation, who are just like you say, they would like to get out, but they do not have a chance. And if they do get out, they do not have the accumulated field experience to know what to do apart from what is on the piece of paper to check. Everything has to be evidence based. Well, of course, that is really important. But what counts as evidence, and I mean, when I was young, you would meet conservation managers who did things by instinct. When you asked, why are you doing that? They would say, well, I just know that it is the right thing to do. You would not get away with that now.

I have gone through several generations of the conservation staff since my time, but they often have to relearn the same things again, you know, start with the same problem again. One really good example of this is that we have a problem with the regeneration of *Juniperus communis* in high altitudes. While in rather different situations, in the lowlands, it is a sort of invader of that sporadically grazed grassland on limestone, and there are real problems about it. But we know all about this. We went through it sort of 30 years ago, and then another 20 years ago. More recently, people said, what is the problem with *Juniperus*? Well, you know, just go back to the old papers and, and see what the old guys and girls said about it, and you will find out.

So, I think this kind of institutional knowledge is a problem with us, actually. I have found when I left Lancaster, there was quite an inherited accumulation of information there, data and also experience, even though the group were dispersed. But there was no interest at all. And they could not make money from it, you know? I mean, many people, many universities want to make money out of their science, but they could not make money out of it. They were not even interested from that point of view. And it is the same when Eddy van der Maarel, who was one of the older generation, left Uppsala University, the university said, no interest. What are we going to do with this library? And Udo Bohn who was the head of the project, which began in Czechia actually with Robert Neuhäusl, was the coordinator of the European vegetation map. Huge project, a very great interest. And when Udo Bohn retired, Bundesamt für Naturschutz said no interest. So, you think, institutions have very poor memories and that kind of change is very sad when institutions lose their libraries, they lose their sort of memory. I do not mean to celebrate people, I am not bothered about that, but this is sad. And you want to make sure you have got another generation, Irena, to follow you and carry on.

How much has the vegetation science changed during your scientific life?

It is very striking that IAVS has changed from being primarily sociological as it was in the fifties and sixties, into a much broader organization now. And the big shift from my point of view is towards informatics, of course, the way in which data can be handled. When I did my PhD at Southampton University, I had a data set of 200 relevés, and I entered the data on 80 column punch cards, which we will never see again except in a museum, on a punch card machine the size of this desk. And I wanted to do an association analysis, a kind of syntaxonomic classification. So I had to hire the single mainframe computer in the university, all night to analyse the data. And now you can just do it in under 15 seconds! Yes. And that sort of change, that speed of change has taken people of my generation, I think, by surprise. And, and also we are not so adapted as you youngsters are. And wonderful people, you know, like Stephan Hennekens, have this extraordinary skill in producing Turboveg program, and Luboš, from your group, Cocktail and Juice. Which is terrific for us. I have grandchildren and they are so adapted! Asking me, oh, grandpa, look, why are you so stupid with your mobile phone? And correct me with the television.

I think it is good, of course, to be able to handle data so much, but provided we do not get preoccupied with just

the speed and the skill and turning it all into numbers. You know. It has to come out, at the other end looking like vegetation and something which we appreciate and know, and like to look at, with all its features, so I think that certainly will not change. And, I think, a beneficial change has been the way in which IAVS now has many more meetings that have many more papers about complicated processes in ecology and dependence upon environmental change.

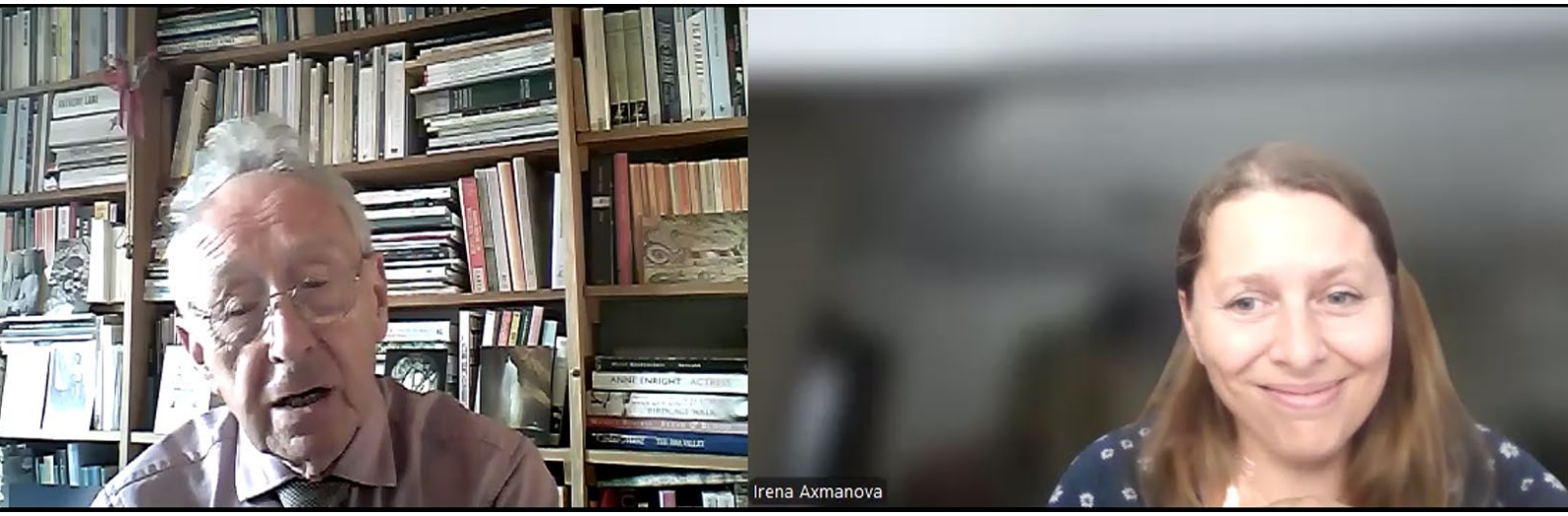
Would you encourage young scientists to go in the same direction?

Well, climate change is hugely important. It is conditioning in what sort of world we live in, quite apart from complicated political situation. I think it is a time of fear and anxiety. And, you know, to be able to continue working with confidence and feeling that the future is assured, I think that is difficult for youngsters.

My grandchildren are 13 to 19. So, some are coming to the start of their university career. And none of them are interested in botany and they are not interested in languages, which is my wife's area of expertise, either. But, you know, I do wonder what sort of world it is, but I still would encourage young scientists to go on.

And the big thing for me was, when I was growing up, how wonder changed into science. That is how it worked, you know, wonder, the intricacies of the natural world, the beauty of the natural world, birds and butterflies. But to be able to change that sense of wonder into science, I think good quality science is hugely important. I like talking to young people. I have just had an invitation to go to the primary school, which is next door to home, to talk about why I am a scientist. And, I mean, there are kids of eight, nine, so I like that. And, you know, to try to inspire them. That is how it worked with me. I was nine and somebody came to my school, with this ant's nest in between two sheets of glass, a sort of thing about a picture size. And inside was a nest with the queen and the workers all working around. She was a student teacher, and she was lovely, and the ants were so interesting. We would say in English, I sucked up to them because she let me go in before school began to give the sugar syrup to ants, which we did by removing a little plug of cotton, putting the sugar and putting it back. I was absolutely fascinated. I got my chair, in Lancaster, and became a professor of ecology. I thought about this woman, and I knew she had come from a particular part of Britain, a particular town. And so, I took the risk of writing a letter to the local paper. Yes. And I sent a photo to the paper, and I said, this woman was hugely important to me as a child of nine. And I wonder if anybody knows who she is and four days later, I got a letter from her and she said, I am that woman. And how wonderful it was she inspired me.

And I think it is important to pass on your enthusiasm to another generation so that there will be vegetation scientists, however difficult the world is in terms of climate change or political situation. That there will still be people willing to try and treasure the variety of the natural world and ensure that the bits of it survive to inspire us and feed us and just make life more interesting and cheerful.



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In memoriam. Sandro Pignatti (Venice, September 28, 1930 – Rome, June 13, 2025)

By Riccardo Guarino

Department STEBICEF, University of Palermo, via Archirafi 38 – 90123 Palermo, Italy

Sandro Pignatti was not only a distinguished botanist but also a profound thinker. He united scientific thoroughness with philosophical depth, offering a vision of nature that transcended data analysis and classification, reaching into the very meaning of our relationship with the natural world. His leadership in research was inspiring not only for its scientific value but for the reflective, almost meditative quality that he brought to his work.

From his earliest analytical studies, Sandro dedicated himself to uncovering the order and repeatability expressed in natural vegetation — one of the ways in which life organizes itself across time and space, right "at the edge of chaos". It is in that liminal space between order and disorder that plants (and life itself) find both the regularity necessary to endure and the irregularity needed to evolve.

In much the same way, Sandro's scientific work reflects the enduring tension between *vita activa* and *vita contemplativa*; between the academic duty to teach "what we know" and the philosophical impulse to question the very foundations of that knowledge.

Throughout his career, Sandro's exploration of the natural world was accompanied by a deep awareness of the limitations inherent in traditional scientific approaches to plant science. Much of his work was dedicated to developing tools, techniques, and descriptors that would allow for a more holistic and integrative method of scientific investigation on plant ecology and species assemblage rules.

Yet, this active pursuit of new methodologies never fully satisfied him. Even after seven decades of scientific activity, the youthful energetic curiosity that led him to become a vegetation scientist remained the same as when, at the age of 23, he became the first Italian to publish a phytosociological paper (Pignatti, 1953a), followed two years later by the first vegetation map ever published for the Italian territory (Giacomini & Pignatti, 1955).

Sandro's career and oeuvre can be broadly divided into three distinct periods. The first was his early academic phase, when he served as an assistant professor in Pavia and Padua, with short research stays in Barcelona and Montpellier.

The second, spanned from 1962 to 1982. During this time, he became full professor in Trieste, where, starting from scratch, he succeeded in building a distinguished school of botany, marked by a spirit of innovation and strong international engagement.

The third period corresponds to his mature years, when he moved to Rome, on the chair once held by his former mentor, Valerio Giacomini, the very man who had guided Sandro through his early academic journey and encouraged him to learn the phytosociological approach under the guidance of Reinhold Tüxen and Josias Braun-Blanquet.

For the young Sandro Pignatti, Valerio Giacomini was undoubtedly a "man of destiny." Originally intending to study geography at the University of Pavia, Sandro was soon captivated by Giacomini's personal charisma and intellectual influence, which persuaded him to redirect his passion toward botany.

It was again, through one of Giacomini's unintended influences, that Sandro met Erika Wikus — at the time, "an energetic Austrian young researcher" — who would become his wife in 1956. They met in Montpellier; the legend says while doing phytosociological relevés in two adjacent plots that were assigned to them by Josias Braun-Blanquet!

When Sandro Pignatti moved to Trieste in 1960, it was only eight years after the city had been reintegrated into Italian administration following the Second World War. The Faculty of Sciences was still in its infancy, and the Botanical Institute amounted to little more than a single room, one table, four chairs, and three people: Sandro himself, a volunteer assistant, and a technician. In just twenty years, the "School of Trieste" grew into one of Italy's foremost centers of botanical research, with significant achievements in the following fields:

- Algal syntaxonomy and distribution: Sandro was the first to apply the phytosociological sampling method to Mediterranean benthic communities (Pignatti, 1962a,b). He initiated and promoted several large-scale field campaigns to collect data along the Adriatic coast of Italy and around Sicily (Pignatti, 1966), paving the way for a new understanding of marine vegetation through a structured, community-based perspective.

- Vegetation studies in Eastern Alps: Together with researchers from Ljubljana and Klagenfurt, Sandro was a co-founder of the Ostalpin-Dinarische Gesellschaft für Pflanzensoziologie, an international association that, beyond its scientific importance, played a key role in fostering dialogue and collaboration among scientists who, at the time, were separated by the political divide between Eastern and Western Europe. In the field of descriptive vegetation science, one of Sandro's notable contributions was the development of the concept of *vegetation complexes* and the corresponding sampling techniques. This innovative approach was first presented in Rinteln in 1977 (Pignatti, 1978) and has since become a valuable reference in the field. In 1960, Sandro and Erika published the first contribution on the vegetation of the Dolomites, a lifetime project concluded in 2014 with the publication of three authoritative volumes on *Plant life of the Dolomites* (Pignatti E. & S., 2014).

- Computer applications in data processing: Sandro was also a pioneer in applying computer technology to Vegetation Science, beginning with a groundbreaking study on the phenology of European beech forests in 1962 (Mengarda & Pignatti, 1962). In 1969, the *Working Group for Data Processing* of the International Association for Vegetation Science was established in Trieste under his initiative. This group became a hub for innovation, testing and developing numerous methods (Cristofolini et al., 1970), databases (Pignatti et al., 1984), and applications of multivariate analysis for vegetation data — many of which would later become standard tools in the field.

- Taxonomical studies on the Flora of Italy: Building on his early interest in coastal vegetation, Sandro became a leading specialist in the taxonomy of Mediterranean coastal flora. He devoted particular attention to the complex genus *Limonium* (Pignatti, 1953b,c; 1955; Desole & Pignatti, 1960; Pignatti, 1960b; 1961; 1962; 1963; 1968; Dolcher & Pignatti 1971a,b), becoming its curator for *Flora Europaea*. That foundational work marked the beginning of a deeper engagement with plant taxonomy and led him to collaborate with other experts in critical taxa. This long-standing commitment culminated in the publication of *Flora d'Italia* (Pignatti, 1982), a landmark achievement in Italian botanical science. The first edition of *Flora d'Italia*, rooted in Adriano Fiori's analytical approach and iconography, reinterpreted in line with the new model introduced by *Flora Europaea*, left Sandro rather dissatisfied. As a result, he began gathering material for a second edition almost immediately. In about two decades, he amassed a large collection of taxonomic literature, organized by plant family. The task of systematizing this impressive miscellaneous collection was entrusted to me in 2002. The challenge was issued half-jokingly, in the spirit of friendly rivalry between Borromeans and Ghislerians (we had both studied at two of Pavia's historic colleges: Sandro at Collegio Ghislieri, I at the Almo Collegio Borromeo). But I took it very seriously. Together with my friend Marco La Rosa, I began almost immediately to design digital photo archives and an interactive identification tool. By 2006, the systematic revision of the first edition's texts was started. This long work, culminated in the second edition of *Flora d'Italia* (Pignatti, Guarino, La Rosa, 2017-2019), deepened my personal bond with Sandro. The countless hours spent compiling floristic, iconographic and taxonomic data gave me the opportunity to know Sandro not only as a scholar but as a person. His miscellaneous notes and the thousands of emails exchanged are among my most treasured memories.

Soon after the publication of *Flora d'Italia*, Sandro moved to Rome, where he expanded his research into new areas, focusing primarily on ecosystem functioning and the impacts of human activity on natural systems. These were the years of his passionate search for a new theory that would interpret natural vegetation as the outcome of self-organizing processes shaped by ecosystem constraints. At the same time, Sandro put considerable effort to provide the Italian scholars with authoritative monographs on plant ecology (Pignatti, 1994a), on landscape ecology (Pignatti, 1994b), on urban ecology (Pignatti, 1991, 1995b, 1996), on the wood-types of Italy (Pignatti, 1998), on the dualism ecology-economy in the frame of the general systems theory (Pignatti & Trezza, 2000). During this prolific "Roman period," the following areas can be added to Sandro's major achievements:

- Urban Ecology: Rome has been a city for over twenty-five centuries, and its flora, vegetation, and biotopes have long been the subject of scientific investigation (Cignini et al. 1995). Building on this legacy, new methods for data analysis and innovative perspectives in landscape ecology were developed and presented in the frame of several international meetings.

- Ecosystem functioning: the functional role of the vegetation, as the living and ever-changing interface between the physical matrix of ecosystems and man, is still incompletely known. Sandro provided the scientific community with new descriptive tools for vegetation analysis, like the application of the circuit theory to interpret the ecosystem functioning (Pignatti, 1995a), and the extension of the Ellenberg's indicator values to the whole flora of Italy (Pignatti et al. 2005).

- Mediterranean ecosystems: Sandro's time in Rome reignited his deep interest in Mediterranean-type ecosystems. His research took on a broader comparative dimension, focusing on vegetation structure and plant functional traits across the Mediterranean Basin and SW Australia (Pignatti et al. 2002). Together with Erika, he conducted twelve extensive field campaigns in Australia, along

with three expeditions into the Australian deserts (Pignatti et al. 1993; Pignatti & Pignatti, 1994a,b, 1997, 2005, 2021). Drawing on these observations — later partially extended to other Mediterranean-type regions such as California, Chile, South Africa, and the Canary Islands — Sandro developed the hypothesis that the remarkable biodiversity of Mediterranean ecosystems is, in part, the result of a long-standing co-evolutionary relationship between humans and plants (Pignatti, 1986; Pignatti & Pignatti, 1987; Pignatti 1991).

- Environment and civil society: Together with economist Bruno Trezza, Sandro explored the relationship between human activities and the degradation of the biosphere in a theoretical essay titled *Assalto al pianeta* (Assault on the Planet). In this work, the authors contrast the steady-state equilibrium of the biosphere with the relentless expansion of industrial production (Pignatti & Trezza, 2000). The book was recognized for its significance in ecological thought and awarded the prestigious Gambrinus Prize for ecological literature.

Sandro's philosophic interest is essentially addressed to the phenomenology of the relationship man-biosphere. On the side of plant taxonomy, he discussed with Ivar Segelberg (1914–1987) the principles of scientific classification, and his rigorous philosophical thinking helped making him the taxonomical expert he became. On the side of plant ecology, Sandro's holistic approach to scientific investigation recalls the Schweitzer's "Reverence for Life", an universal ethical philosophy, anchored in a universal reality, where humans are seen as an integral part of the ecospheric whole.

In his "dissidence" from the excesses of capitalism, Sandro formulated an ethic of personal commitment in the civil society. This commitment was reflected not only in his scholarly work but also in his active service to the scientific community. He served as associate or chief editor of many scientific journals and held key leadership roles: president of the Ostalpin-Dinarische Gesellschaft für Pflanzensoziologie, of the Italian Botanical Society (1966–1972), and of the International Association for Vegetation Science (1989–1995).

Sandro was a fellow of several prestigious institutions, including the Accademia Nazionale dei Lincei, the Istituto Veneto di Scienze, Lettere ed Arti, the Academy of Córdoba (Argentina), the European Academy of Bolzano. His contributions were recognized with numerous honors: the Order of Merit of the Italian Republic, the Gold Medal of the Organization for Plant Taxonomical Investigation in the Mediterranean Area (OPTIMA), the Prize of the Academy of Sciences of Turin, and the Reinhold-Tüxen-Preis of the City of Rinteln. He was also awarded honorary doctorates from the University of Uppsala (1991) and the University of Palermo (2005). These accolades reflect not only the value of his scientific achievements, but also the depth of a man who united vision, intellect, and humanity in lifelong dedication to ideals and to great undertakings.

However, beyond his official roles and participation in various commissions, Sandro's most enduring contribution to the cultural and scientific dialogue was expressed through his generous availability and the informal, inclusive spirit of his "social creatures." Among them was the European Vegetation Survey, a working group he founded in 1992 to promote shared data and standards in phytosociology. It was — and remains — a joyful blend of young and senior scientists, friendship, and self-organization. It was there, in 1996, that I met Sandro for the first time. During that meeting, he quoted a line from Villars: "*La botanique vous procura partout des amis et des connaissances agréables" — "Botany will bring you friends and pleasant encounters everywhere*." And indeed, we became friends!

Sandro began his scientific journey by taking phytosociological relevés. Each relevé is a small brick. Modest in scale, yet essential to the edifice of knowledge in Vegetation Science.

Brick by brick — and with more than a few cornerstones— he built a monumental body of work, for which we are grateful beneficiaries. Yet "monumental" is a word Sandro himself would never have used to describe his contribution to botany. Most probably, he would have preferred to echo the words of his favorite musician, Johann Sebastian Bach: "*What I have achieved by my work and dedication is within everyone's reach*".

Sandro was a teacher, a mentor, and a scientific guide of inestimable value to me. I will carry his memory with me, as I continue to observe and study nature. It feels like an honest and sincere way to honor him, just as he would have wished, when he once said: "*I am not, and do not feel like, a protagonist. The idea of competition, of being a leading actor or a fighter, is far from my way of thinking*."

Time, wrote Pindar, is the true guardian of virtues of men, of the arts, of studies, and of all that truly matters. One possible meaning (perhaps the only one) of the resurrection of the dead is that the living resurrect them at every moment, remembering their works and virtues, so that, without fanfare or final judgment, they may never cease to rise to life.

Humilitas alta petit et… fac bonum, Sandro! Semel, semper.

Portrait of Sandro Pignatti, Gravine di Matera, March 21, 2010

Portrait of Sandro Pignatti, Aliano, April 4, 2013

Riccardo Guarino and Sandro Pignatti herborizing at Monte Alpi, April 7, 2011

References

Pignatti, S. 1953a. Introduzione allo studio fitosociologico della Pianura Veneta Orientale. *Archivio Botanico* 28–29.

Pignatti, S. 1953b. *Limonium tunetanum* (Barr. et Bonn.) Maire ssp. eugeniae (Sennen) nov. comb. *Nuovo Giornale Botanico Italiano*, n.s. 60(1–2): 334–335.

Pignatti, S. 1953c. Su alcune plumbaginacee interessanti raccolte alla foce dell'Ebro. *Collectanea Botanica* 3(3): 377–383.

Giacomini, V. & Pignatti, S. 1955. Flora e vegetazione dell'alta valle del Braulio. *Memorie della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano* 11(2–3): 1–194.

Pignatti, S. 1955. Studi sulla flora e la vegetazione dell'isola di Mallorca (Baleari): 1) Contribuzione alla flora balearica; 2) I *Limonium* della flora balearica. *Archivio Botanico* 31: 46–58, 68–100.

Desole, L. & Pignatti, S. 1960. *Limonium tenuiculum* ssp. *hermaeum*, una nuova sottospecie endemica nell'isola di Tavolara. *Nuovo Giornale Botanico Italiano*, n.s. 67(1–2): 1–23.

Pignatti, S. 1960a. Proposta di un censimento nazionale degli ambienti e delle specie vegetali da proteggere e prima esemplificazione. *Nuovo Giornale Botanico Italiano*, n.s. 66: 340–344.

Pignatti, S. 1960b. Sulle sottospecie di *Limonium virgatum* ed in particolare sulla '*Statice dictyoclada*' di Boissier. *Nuovo Giornale Botanico Italiano*, n.s. 66: 560–563.

Pignatti, S. 1961. I *Limonium* della flora balearica (supplemento). *Archivio Botanico e Biogeografico Italiano* 36: 205–209.

Mengarda, F. & Pignatti, S. 1962. Un nuovo procedimento per l'elaborazione delle tabelle fitosociologiche. *Rendiconti Accademia Nazionale dei Lincei* 32(2): 215–222.

Pignatti, S. 1962a. Associazioni di alghe marine sulle coste veneziane. *Memorie Istituto Veneto di Scienze, Lettere ed Arti* 32(3): 1–134.

Pignatti, S. 1962b. Note sulla sistematica delle specie iberiche del genere *Limonium*. *Collectanea Botanica* 6(12): 293–330.

Pignatti, S. 1963. Ueber die Beziehungen zwischen italienischen und iberischen Arten der Gattung *Limonium* (*Plumbaginaceae*). *Webbia* 18: 73–93.

Pignatti, S. 1966. La crociera della motonave "Sea Queen" per lo studio della vegetazione bentonica del mare attorno al Gargano. *Giornale Botanico Italiano* 73: 210–211.

Pignatti, S. 1968. *Limonium calaminare*, un nuovo endemismo della zona di Cartagena. *Collectanea Botanica* 7: 939–944.

Cristofolini, G., Lausi, D. & Pignatti, S. 1970. Über statistische Eigenschaften der Charakterarten und deren Verwertung zur Aufstellung einer empirischen Systematik der Pflanzengesellschaften. *International Symposium Rinteln* 1966: 8–25.

Dolcher, T. & Pignatti, S. 1971a. Sulle specie di *Limonium* delle coste della Sardegna Settentrionale. *Bollettino della Società Sarda di Scienze Naturali* 8: 89–98.

Dolcher, T. & Pignatti, S. 1971b. Un'ipotesi sull'evoluzione dei *Limonium* del bacino del Mediterraneo. *Giornale Botanico Italiano* 105(2): 95–107.

Pignatti, S. 1978. Zur Methodik der Aufnahme von Vegetationskomplexen. *Bericht Internationales Symposium Vegetationskunde Rintel*n 1977: 77–82.

Pignatti, S. 1982. *Flora d'Italia*. 3 vols. Edagricole, Bologna.

Nimis, P.L., Feoli, E. & Pignatti, S. 1984. The network of data-banks for the Italian flora and vegetation. In: Alkin, R. & Bisby, F.A. (eds.) *Databases in systematics*, pp. 113–124.

Pignatti, S. 1986. Flora e vegetazione delle terre aride del Sud America e dell'Africa: analogie e differenze. *Rivista di Agricoltura Subtropicale e Tropicale* 78: 541–558.

Pignatti, E. & Pignatti, S. 1987. Mediterranean vegetation of SW Australia, Chile and the Mediterranean Basin: a comparison. *Annali di Botanica* 43: 227–243.

Pignatti, S. 1991. La città come ecosistema. In: Massari, G. (ed.) *L'albero urbano*, pp. 57–80. Tomo Ed., Roma.

Pignatti, E., Pignatti, S. & Lucchese, F. 1993. Plant communities of the Stirling Range, Western Australia. *Journal of Vegetation Science* 4: 477–488.

Pignatti, E. & Pignatti, S. 1994a. A survey of the Southwestern Australian vegetation classes. *Colloques Phytosociologiques* 23: 47–66.

Pignatti, E. & Pignatti, S. 1994b. Centrolepidi-Hydrocotyletea alatae, a new class of ephemeral communities in Western Australia. *Journal of Vegetation Science* 5: 55–62.

Pignatti, S. (ed.) 1994a. *Ecologia vegetale*. UTET, Torino.

Pignatti, S. 1994b. *Ecologia del paesaggio*. UTET, Torino.

Cignini, B., Massari, G. & Pignatti, S. 1995. *L'ecosistema Roma*. Palombi, Roma.

Pignatti, S. 1995a. A complex approach in phytosociology. *Annali di Botanica* (Roma) 52: 65–80.

Pignatti, S. 1995b. L'ecosistema urbano. *Atti XXI Seminario Evoluzione Biologica, Accademia Nazionale dei Lincei:* 137–167. Roma.

Pignatti, S. 1996. Ein dynamisches Modell für das urbane Ökosystem. *Schriftenreihe für Vegetationskunde* 27: 175–182.

Pignatti, E. & Pignatti, S. 1997. Southwestern Australian vegetation classes. *Rendiconti Fisici Accademia dei Lincei* 8: 273–293.

Pignatti, S. 1998. I boschi d'Italia. UTET, Torino.

Pignatti, S. & Trezza, B. 2000. *Assalto al pianeta. Attività produttiva e crollo della biosfera*. Bollati Boringhieri, Torino.

Pignatti, E., Pignatti, S. & Ladd, P.G. 2002. Comparison of ecosystems in the Mediterranean Basin and Western Australia. *Plant Ecology* 163(2): 177–186.

Pignatti, S., Menegoni, P. & Pietrosanti, S. 2005. Bioindicazione attraverso le piante vascolari. Valori di indicazione secondo Ellenberg per le piante della flora d'Italia. *Braun-Blanquetia* 39: 1–97.

Pignatti, E. & Pignatti, S. 2005. Ephemeral wetland vegetation of Western Australia. *Phytocoenologia* 35(2–3): 201–218.

Pignatti, E. & Pignatti, S. 2014. *Plant life of the Dolomites*. Vols. 1–3. Springer, Berlin & Heidelberg.

Pignatti, S., Guarino, R. & La Rosa, M. (eds.) 2017–2019. *Flora d'Italia*. Vols. 1–4. Edagricole, Edizioni Agricole di New Business Media, Bologna.

Pignatti, E. & Pignatti, S. 2021. *Botanical journeys into the Western Australian deserts*. Geobotany Studies 20. Springer, Cham.

Link to Complete bibliographical chronology of Sandro Pignatti's work

Sandro resurveying the vegetation of the lagoon of Venice, April 14, 2010

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Memory of Alessandro Pignatti

By Daniele Cicuzza

Faculty of Science, University of Brunei Darussalam, Brunei dcicuzza@gmail.com

Describing the multifaceted figure of Alessandro "Sandro" Pignatti is no easy task. We all know his extraordinary contributions to the study of the flora of Italy and Italian vegetation in all its aspects. While the IAVS celebrates vegetation studies in Europe and beyond, here I would like to focus on some of Pignatti's contributions to vegetation research outside the European region.

I must first recall that Professor Pignatti was my supervisor at the University of Roma "La Sapienza," together with Dr. Anna Testi. In fact, I was his last student before his retirement. After graduating in Italy, I moved overseas to pursue my interest in tropical flora, especially the forests of Southeast Asia. My career path has since taken me through the UK, Germany, and Switzerland, to China's Xishuangbanna Tropical Botanical Garden, and now to the University of Brunei Darussalam in Borneo. Throughout this journey, Sandro was always supportive and encouraging.

During his long and distinguished career, Pignatti, in collaboration with his wife Erika Wikus Pignatti, expanded his research from temperate vegetation to the Mediterranean Basin, and then to regions of Africa, Asia (including China and Japan), and Western Australia. When I was his student, the Mediterranean-climate region of Western Australia, particularly Perth and its surroundings, was a central focus of their work, with regular excursions undertaken by Sandro and Erika.

His publication record includes several works with a broad biogeographical perspective. In the 1950s, he published papers on the flora and vegetation of Lebanon near Beirut (Pignatti 1952a,b), halophyte communities along the Tunisian coast (Pignatti 1952c), and the arid shrub vegetation around Mogadishu, Somalia (Pignatti 1990a). These early studies exemplify Sandro's characteristic approach: comparing geographically distant regions in terms of their flora and vegetation. This comparative perspective culminated in his 1984 paper Flora and Vegetation of Arid Lands in South America and Africa: Analogies and Differences, in which he overcame the considerable challenge of uneven floristic knowledge between regions to correlate species richness, vegetation types, biological forms, eco-physiological traits, and biomass (Pignatti 1984).

In 1990, he published The Origin and Evolution of Austral Vegetation with the Accademia Nazionale dei Lincei, exploring connections between the floras of Australia, South Africa's Cape region, South America, and Antarctica (Pignatti 1990b). With his comparative approach, he even drew parallels between Mediterranean-climate southwestern Australia and the Italian island of Sardinia. These studies, though limited by the floristic information available at the time, remain fine examples of large-scale biogeographical synthesis.

After travels in Southeast Asia and Japan, Pignatti published a concise yet insightful account of key forests in Japan, Thailand, and Singapore (Pignatti 1990c). There, he noted the methodological challenges of applying phytosociology to tropical forests, where a single relevé of 1,000 m^2 can contain up to 100 mostly woody species. This observation remains valid today and helps explain the lack of comprehensive phytosociological treatments for tropical regions, where the taxonomic knowledge — especially for shrubs and herbs — remains incomplete.

Japan became an important focus in his later career, as he sought to understand the relationships between European beech forests and their counterparts in China (Pignatti et al. 1990) and Japan. This work culminated in a monumental study of East Asian beech forest phytosociology (Hukusima et al. 2013). I vividly remember his regular research trips to Japan, and the reciprocal visits of Japanese scientists to the "La Sapienza" Botanic Garden in Rome, where his office was located.

Pignatti and Erika also published extensively on the flora and vegetation of Western Australia, characterising its unique plant communities. Our private discussions on the similarities and differences between Australia's distant vegetation and that of Italy were always inspiring and intellectually rewarding (Pignatti et al. 1993, Pignatti & Pignatti 1994).

In conclusion, one lesser-known but defining aspect of Pignatti's work deserves emphasis: his commitment to studying vegetation through the integration of floristic, ecological, and eco-physiological data. Complexity was his guiding concept: ecosystems, and ultimately the Earth itself, represent the highest expression of life's complexity. It is our responsibility to build on his legacy, continuing to gather precise and detailed data, and to maintain a global perspective in vegetation science.

References

Pignatti S. (1952a) Una escursione fitosociologica sul litorale di Beyrouth (Libano). *Nuovo Giornale Botanico Italiano*, 55, 75–97, 1952.

Pignatti S. (1952b) Sulla presenza di Ambrosia hispida Pursh. Nei dintorni di Beirouth (Libano) *Archivio Botanico*, 38 (XII) 1–3.

Pignatti S. (1952c) Note fitosociologiche su alcune associazioni alofite del litorale tunisino. *Bollettino della Società Veneziana di Storia Naturale e del Museo Civico di Storia Naturale* Vol. VI (I), 77–94.

Pignatti S. (1984) Flora e vegetazione delle terre aride del Sud America e dell'Africa: Analogie e differenze. *Rivista di agricoltura subtropicale e tropicale* 78 (3,4): 541–558.

Pignatti S. (1990a) La vegetazione della boscaglia nell'area di Mogadiscio. *Biogeographia* 14: 61–66.

Pignatti S. (1990b) Origine ed evoluzione della vegetazione australe. *Contributi del centro linceo interdisciplinare "Beniamino Segre": Evoluzione biologica e i grandi problemi della biologia*. 47–61.

Pignatti S. (1990c) Le foreste del Sudest Asiatico. *Informatore Botanico Italiano* 22 (3): 287–290.

Pignatti E., Pignatti S., Huang C.C., Ding G.Q., Huang Z.L. (1990) Chorological analysis of the Ding Hu Shan Flora. Rendiconti Fis. *Accademia dei Lincei* 9(1): 465–472.

Pignatti E., Pignatti S. & Lucchese F. (1993) Plant communities of the Stirling Range, Western Australia. *Journal of Vegetation Science* 4: 477–488.

Pignatti E. & Pignatti S. (1994) Centrolepidi-Hydrocotyletea alatae, a new class of ephemeral communities in Western Australia. *Journal of Vegetation Science* 5: 55–62.

Hukusima T., Matsui T., Nishio T., Pignatti S., Yang L., Lu S.Y., ... Wang, Y. (2013) *Phytosociology of the beech (Fagus) forests in East Asia*. Berlin, Heidelberg: Springer Berlin Heidelberg.

Daniele Cicuzza with his supervisor Sandro Pignatti, personal archive

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EVA-MAP: An online application to visualize European vegetation data

By Adam Mertel, Ilona Knollová & Milan Chytrý

Masaryk University, Brno, Czech Republic

**Correspondence: Milan Chytrý, Department of Botany and Zoology, Faculty of Science, Masaryk University, Kotlářská 2, 611 37 Brno, Czech Republic; chytry@sci.muni.cz*

European vegetation-plot data have been integrated in a single database since 2014, when the European Vegetation Archive (EVA) was established (Chytrý et al. 2016). In 2022, EVA was expanded to include a European database of repeated observations from vegetation plots called ReSurveyEurope (Knollová et al. 2024). In March 2025, EVA consisted of 108 contributing national, regional or thematic databases, which together contained records from 2.1 million vegetation plots, and ReSurveyEurope included an additional 507 datasets with 439,663 observations from 121,407 plots.

The data from EVA and ReSurveyEurope have always been made available to various projects of basic and applied research (https://euroveg.org/eva-database/projects), but they have never been visualized in detail. For planning data analyses, however, it is helpful if researchers can see the contents of the database in detail and suggest the most appropriate data selection criteria for their objectives. For designing local and regional vegetation survey projects, it is important that they can see the locations of historical vegetation plots in the study area. Last but not least, researchers studying vegetation change need to identify the historical plots that are most suitable for resurveying. Therefore, easy access to the locations of historical vegetation plots and information on whether these plots have already been resurveyed is essential.

To promote a wider and better use of European vegetation-plot data, we have developed an online map application called EVA-MAP. The application allows exploring and searching the locations of plots from the European Vegetation Archive and ReSurveyEurope on an interactive, map-centred dashboard. The map shows the density of plots in different areas and, when zoomed in, the locations of each plot with a circle indicating the location uncertainty, if available in the source database. The plots can be displayed on the background of a topographic map (OpenStreetMap) or satellite images, which can be toggled using a button on the right-hand side of the map. Other buttons on the right allow displaying the current location of the application user, searching for a specific site by name, and changing the opacity of individual map layers to emphasize either the plot density or the map background.

Users can select plots located within a mouse-drawn rectangle, circle or polygon on the map. This selection can be combined with other selection criteria available in the panel on the left side of the screen. These criteria include the EUNIS habitat type (either a broad type at level 1 of the EUNIS hierarchy or a narrower type at level 3; Chytrý et al. 2020), country, bioregion (EEA 2016), altitude, year of sampling, time range between the first and the last sampling of the same plot, plot area, location uncertainty, author, ReSurveyEurope project (i.e., the code and number of the dataset in ReSurveyEurope) and source dataset (i.e., a contributing database, which can contain both non-resurveyed plots and some datasets from ReSurveyEurope). The filtering panel also allows the separation of plots that have been resurveyed from those that have not. For the resurveyed plots, it further allows distinguishing between non-manipulated plots and those that have undergone experimental manipulation, such as cutting or fertilizing. Users can also select all datasets that are simultaneously included in ReSurveyEurope and one of the three largest initiatives that collect specific types of resurveyed plots: forestREplot (Verheyen et al. 2017), GLORIA (Pauli et al. 2015) and LOTVS (Sperandii et al. 2014).

The selected plots are displayed in a table in the lower part of the screen. The left part of the table contains information for each plot that is common to all observations of this plot: Plot ID, country, bioregion, altitude, ReSurveyEurope project, dataset, range of years between the first and the last observation, total length of the time series in years, number of observations of the plot, and whether the plot was experimentally manipulated. The right part of the table (with a green header) contains information that may differ between the individual observations of this plot: Year, EUNIS habitat type at the third hierarchical classification level, phytosociological alliance, plot area, location uncertainty, author, reference and access regime according to the EVA Rules. For plots that have been surveyed more than once, information on the individual observations appears after clicking on the plot ID. This information also includes a graphical representation of the time scale with individual observations.

The information on the selected plots can be exported to an Excel spreadsheet. This spreadsheet contains selected fields of the so-called plot header data, i.e. the plot ID, information about the location of the plot, basic characteristics of the vegetation and the environment, as well as sampling details. The list of plot IDs in this spreadsheet can be used to specify the exact data selection when submitting a request for species data export to the EVA or ReSurveyEurope Coordinating Board.

EVA-MAP is optimized for both PC and mobile devices. When satellite positioning is activated on a mobile device, the location of the user is displayed on the map together with the locations of nearby vegetation plots, making it easier to find them in the field.

The application is available at https://evamap.eu. It was built using a mixture of technologies — React as a framework for client-side rendering, TanStack Query for managing the API layer and Node.js for processing data on the server. All data are stored in a SQLite database, and Prisma handles the data schema management, data migration, and further data manipulation. The map component was created using MapLibre, while the rest of the user interface is styled using Mantine and Tailwind libraries.

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References

Chytrý, M., Hennekens, S.M., Jiménez-Alfaro, B., Knollová, I., Dengler, J., Jansen, F., … Yamalov, S. (2016) European Vegetation Archive (EVA): an integrated database of European vegetation plots. *Applied Vegetation Science* 19: 173–180. https://doi.org/10.1111/avsc.12191

Chytrý, M., Tichý, L., Hennekens, S.M., Knollová, I., Janssen, J.A.M., Rodwell, J.S., … Schaminée, J.H.J. (2020) EUNIS Habitat Classification: expert system, characteristic species combinations and distribution maps of European habitats. *Applied Vegetation Science* 23: 648–675. https://doi.org/10.1111/avsc.12519

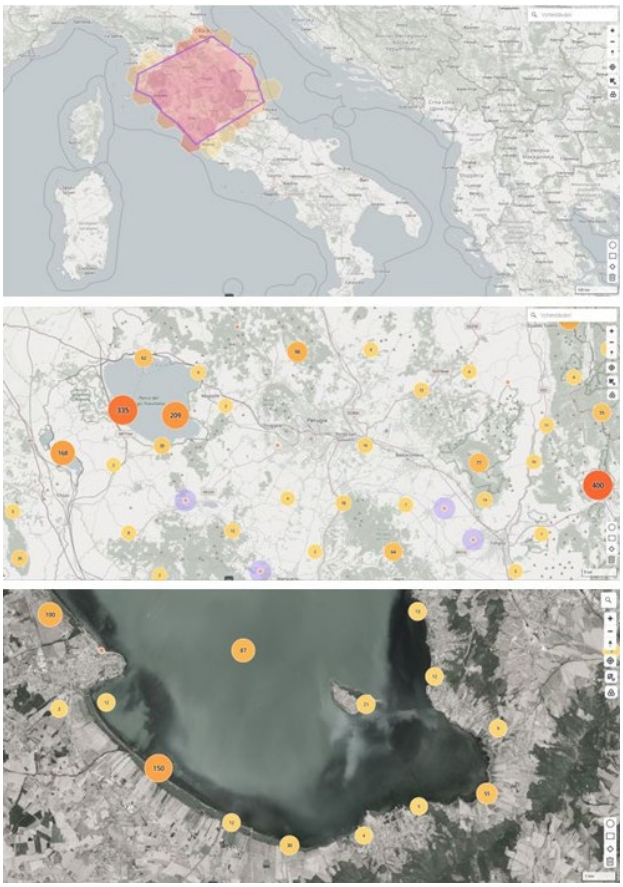
EEA (2016) Biogeographical Regions in Europe. Copenhagen: European Environment Agency. https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-2

Knollová, I., Chytrý, M., Bruelheide, H., Dullinger, S., Jandt, U., Bernhardt-Römermann, M., … Essl, F. (2024) ReSurveyEurope: A database of resurveyed vegetation plots in Europe. *Journal of Vegetation Science* 35: e13235. https://doi.org/10.1111/jvs.13235

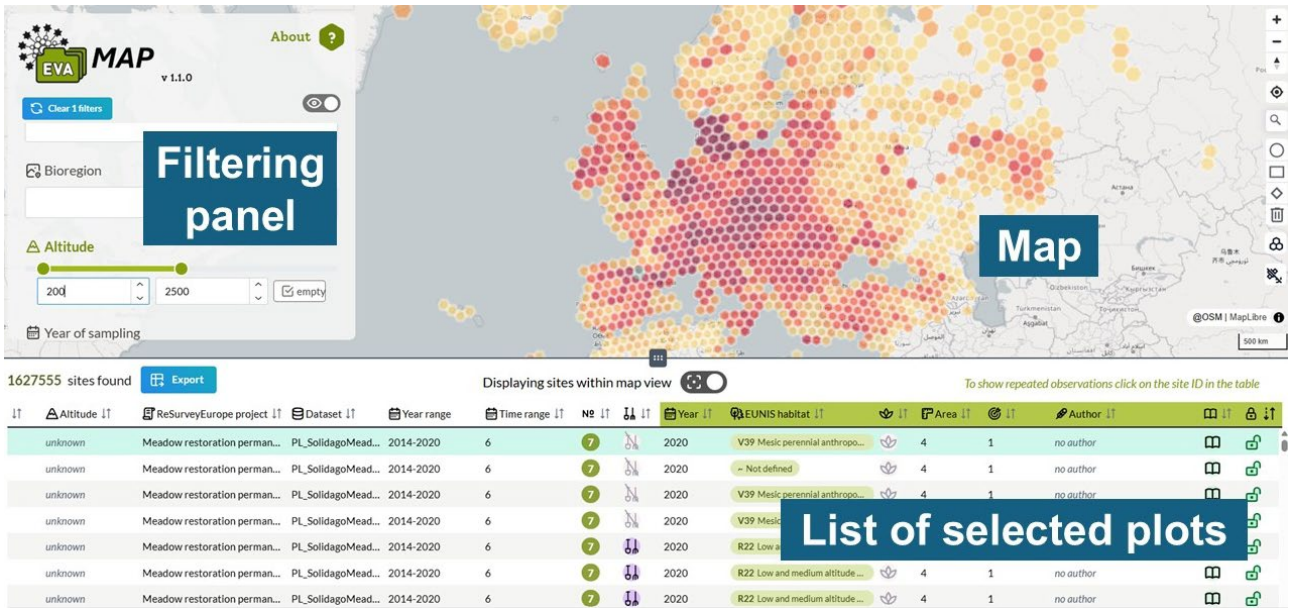
Pauli, H., Gottfried, M., Lamprecht, A., Niessner, S., Winkler, M., Steinbauer, K. & Grabherr, G. (2015) The GLORIA field manual. 5th Edition. Vienna.

Sperandii, M.G., de Bello, F., Valencia, E., Götzenberger, L., Bazzichetto, M., Galland, T., … Lepš, J. (2022) LOTVS: a global collection of permanent vegetation plots. *Journal of Vegetation Science*, 33, e13115. https://doi.org/10.1111/jvs.13115

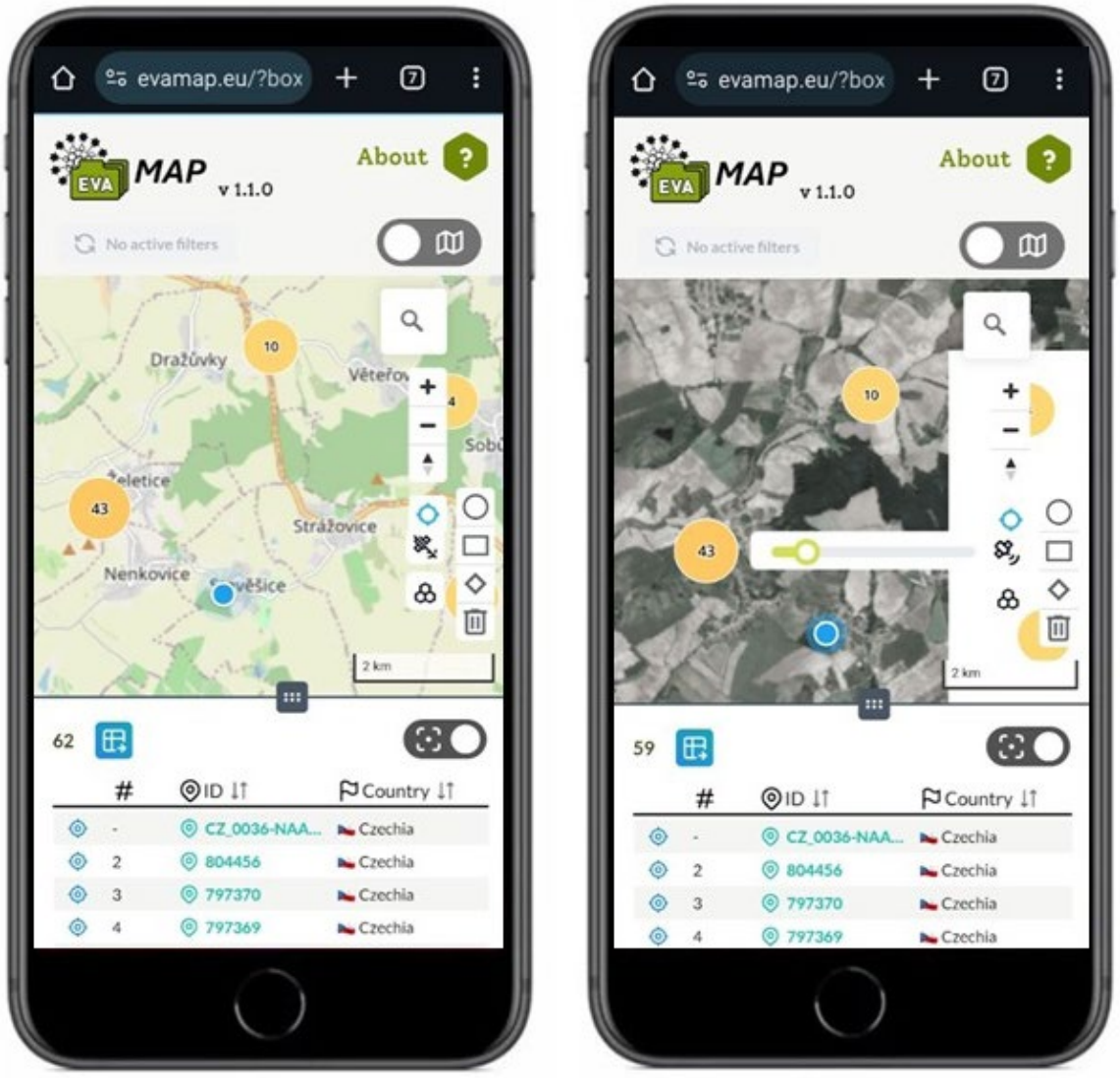
Verheyen, K., De Frenne, P., Baeten, L., Waller, D.M., Hédl, R., Perring, M.P., … Bernhardt-Römermann, M. (2017) Combining biodiversity resurveys across regions to advance global change research. *Bioscience*, 67, 73–83. https://doi.org/10.1093/biosci/biw150



Different map views in EVA-MAP: Top: Coarse-scale view with plot density in hexagons and selection of an area using a mouse-drawn polygon. Middle: Zoomed-in view with plot clusters (from clusters with a few plots in yellow to clusters with many plots in red) and individual plots and their location uncertainty in violet. Bottom: Zoomed-in view with a satellite map in the background.



Main screen of EVA-MAP with three basic panels: map, filtering and list of selected plots



Mobile view with a blue point indicating the current location of the observer and individual plots or plot clusters. The background can be switched between the OpenStreetMap (left) and a satellite image (right).

EVS mid-conference excursion in Colfiorito wetlands.

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