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SANDRO PIGNATTI AND THE EUROPEAN VEGETATION SURVEY

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Abstract – This article traces the origins, development, and scientific impact of the European Vegetation Survey (EVS), highlighting the pivotal role of Sandro Pignatti in shaping its vision and collaborative ethos. Founded in the early 1990s, the EVS emerged as a pan-European initiative to advance phytosociology through coordinated vegetation surveys, standardized data practices, and integrative classification systems. The paper outlines three foundational objectives: promoting national vegetation survey programmes, establishing common data and software standards, and developing a unified European syntaxonomy. Key achievements include the creation of large-scale vegetation databases such as the European Vegetation Archive (EVA), the development of analytical tools (e.g., TURBOVEG, JUICE), and contributions to major classification frameworks like the EUNIS Habitat Classification and the EuroVeg Checklist. The EVS also played a central role in informing European environmental policy, notably through the Red List of European Habitats. Beyond its scientific outputs, the article emphasizes the importance of intellectual exchange, mentorship, and enduring professional networks fostered within the EVS community. Overall, the EVS is presented as a model of collaborative, data-driven ecological research with lasting influence on vegetation science and biodiversity conservation in Europe.

Keywords: European Vegetation Survey; phytosociology; vegetation classification; Sandro Pignatti; biodiversity databases; European Vegetation Archive (EVA); EUNIS Habitat Classification; EuroVeg Checklist; habitat conservation; ecological data standards

At the 12th Workshop of the European Vegetation Survey in 2003, held that year in Naples as part of the parent International Association for Vegetation Science conference, Sandro Pignatti opened our sessions, devoted to wetland vegetation, with the following words: 'Chiare, fresche e dolci acqua', in English 'Clear, fresh and sweet waters'. It is a line from one of the sonnets of Francesco Petrarca, the 14th century Italian man of letters and humanist: an allusion typical of Sandro, the godparent of our scientific community, that he should set our environmental quest in the wider frame of letters and humanist sensibility. Sandro was a man who, taking you to his apartment to share a lunch of *pastasciutta*, would remind you that walking through the gardens of the Orto Botanico you were treading in the footsteps of our scientific forebears who had strolled through that very same place when it was the garden of the Palazzo Corsini.

And it was there that we began, of course, in the Orto Botanico in March 1992 under the patronage of Sandro. Two years before he had published a paper (Pignatti 1990) in the *Journal of Vegetation Science*, 'Towards a prodromus of European vegetation types' and at the 1991 IAVS Symposium in Eger in Hungary, he convened a discussion to give a formal blessing to such a venture. A first workshop was proposed for the following spring, invitations went out and thus the European Vegetation Survey was born.We were few in number at that first meeting and the papers were rather informal, but the mood was enthusiastic and the commitment to a developing task was clear. That first meeting was also

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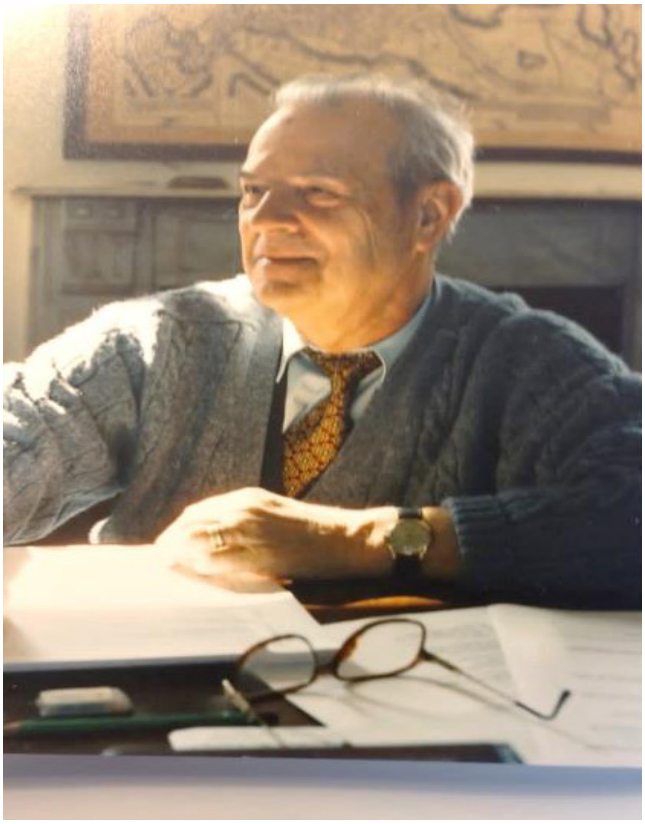


Figure 1. Sandro Pignatti.

distinctive in that it brought together pioneers of an earlier generation like Sandro himself, his wife Erika Pignatti-Wikus, Hartmut Dierschke, Jean-Marie Géhu, Georg Grabherr, Frank Klötzli, Jaroslav Moraveč, Władysław Matuszkievicz and Victor Westhoff, and newcomers like Laco Mucina, then working in Vienna, Joop Schaminée from The Netherlands and me too from the United Kingdom. We last three, together with Pignatti and Grabherr, quickly constituted a committee, with Mucina as Secretary, which gave a core organisational shape to what became a new Working Group of the IAVS. At the subsequent annual spring workshops, again in Rome, increasing numbers of participants and countries were present, including further luminaries like Eddy van der Maarel, Attila Borhidi, Salvador Rivas-Martinez and Franco Pedrotti as well as many younger men and women. From the start, we were concerned to encourage participation from right across Europe and, in the early workshops, there were already representatives from eastern Europe, Russia and Scandinavia.

Local excursions were a feature from the start, giving us an opportunity to share our understanding of forest, grassland and ruderal vegetation, wetlands, dunes and coastal cliffs, everything managed for maximum enjoyment by the home team - Andrea Savoia, Francesco Spada & Emiliano Agrillo. There was usually a cultural strand in the workshops: at our first meeting, Sandro took us for a walk through the historic heart of Rome, past the Area Sacra to the Capitoline Hill and the Forum, stopping on the way, of course, for a coffee and *sfogliatella*. On other excursions he guided us through the Villa Adriana, the Villa d'Este and the Etruscan tombs of Parco di Veio. And that early mixture of deeply experienced vegetation scientists and young researchers was to remain a feature of the EVS in an atmosphere that demanded no deference from the veterans. This was a reflection of the kind of leadership which Sandro gave us, never a man himself expecting that crippling kind of *rispetto.* From the start we aimed to publish papers from the workshops, beginning in *Annali di Botanica* and we now have an impressive record of individual and collaborative publications in a variety of high-impact journals. Entering our second decade, we devoted the 10th meeting to saline vegetation, published as a Festschrift to Sandro, celebrating what he called 'A New Spirit in Phytosociology' (Pignatti, 1995, Schaminée et al., 2003). We also adopted a logo, inspired by an idea of Anton Stortelder of The Netherlands and based on the illustration of *Allium neapolitanum* in Sandro's *Flora d'Italia*.

In 1998 we saw 87 participants from 28 countries at the annual Rome workshop**.** Avoiding the busyness of Rome in the Millenium, we moved to Erice in Sicily and thereafter to a wide variety of locations in Italy and elsewhere. Generous hosts have now welcomed us in 17 locations, giving us a chance to share stunning landscapes and rich hospitalities in Greece, Spain, Czechia, Slovenia, Poland, Slovakia and France, our hosts each time organising busy schedules of lectures, posters, an excursion and a social programme. By 2008, our meeting in Brno swelled to 200 participants gathered from 32 countries. Some years, a small group of participants enjoyed a minibus post-workshop excursion of some days to the Gargano Peninsula, the Maremma and biancane fumarole landscape around Sasso Pisano in Tuscany and, from Erice, to Etna, just three weeks after a major eruption.



Figure 2. Lively conversation at coffee break outside the Arancera, Orto Botanico.

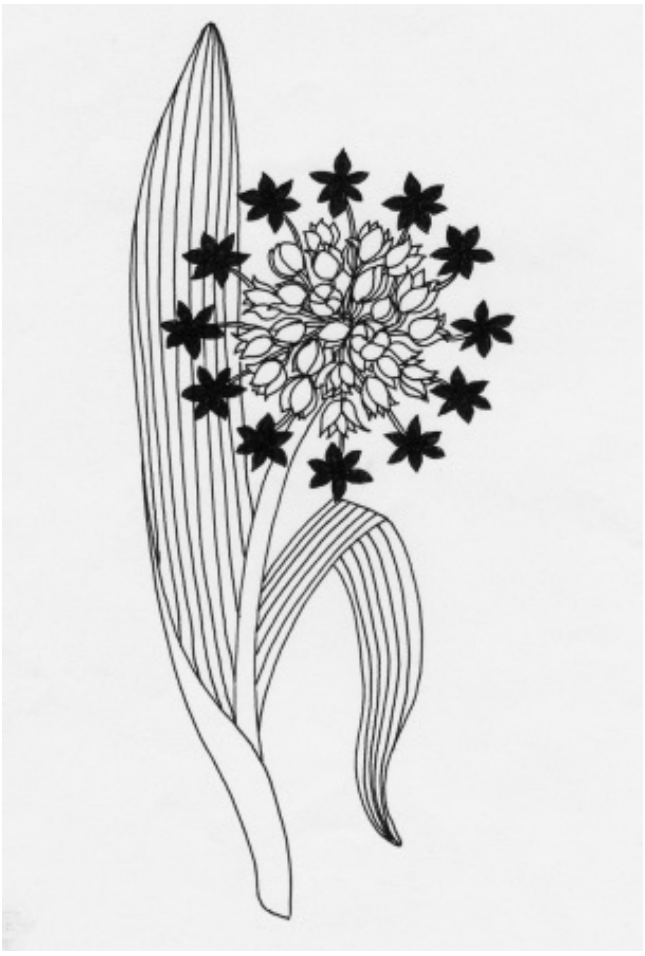


Figure 3. The original version of the EVS logo based on the illustration to *Allium neapolitanum* in Sandro's *Flora d'Italia*.

Promotion of national vegetation surveys

It was one of Sandro's mantras that the EVS should be 'self-organising', nourished by the traditions of vegetation science but finding its own momentum and direction. Three main aims quickly took shape from those early meetings towards realising our shared vision. First, we wished to foster and support national programmes of vegetation survey. Those early papers and posters provided the first Europe-wide exchange of information about the existing state of play of vegetation surveys in different countries, and current thinking on particular classes of vegetation. A questionnaire for participants at this time aimed to assess the extent of phytosociological data and the state of vegetation survey across Europe, and the extent of computerisation and receiving responses from 18 countries (Rodwell, 1995), this provided the first broad indication of progress and capacity. As an encouragement to the development of national vegetation surveys, 'European Vegetation Survey: Current state of some national programmes' (Mucina et al., 1994)



Figure 4. Sandro sharing his knowledge on an EVS workshop excursion.

aimed to show how such time-consuming and logistically intensive enterprises might be organised, detailing projects then coming to fruition in the UK (Rodwell ed., 1991 et seq.), Austria (Mucina et al., 1993) and The Netherlands (Schaminée et al., 1995). Supportive letters were also provided by the EVS to encourage funding for emerging national surveys in various other countries, such as those of the Czech Republic (Chytry ed., 2007-2011) and Slovakia (Valachovič ed., 1995, Jarolimek et al., 1997). Since those early meetings many other country overviews have been published, integrating rich ecological understanding of vegetation types within a phytosociological frame and with appealingly colourful presentation.

Common data and software standards

Our second commitment was to common data and software standards. Funding was obtained from the UK Know-How programme and Darwin Initiative to develop data-analytical and storage skills in the Czech Republic, Slovakia, Latvia, Russia and Albania. With the generous participation of Stephan Hennekens from The Netherlands, the foundation of a TURBOVEG network was established in these countries which subsequently spread right across Europe and beyond. Further software developments for data management and analysis, such as COCKTAIL (Bruelheide, 2000) and JUICE (Tichy, 2002) quickly followed and demonstrations and training sessions became a feature of EVS meetings. A new EVS review of phytosociological data revealed that there were over 1.8 million relevés across Europe, 75% of which were in centralised country or regional databases (Schaminée et al. 2009). A Czech team under Milan Chytrý began work on a European Vegetation Archive (EVA), in which such relevés could be located in a centralised pan-European database (Chytry et al., 2016). This now has over



Figure 5. The EVS team working on The Diversity of European Vegetation in the Orto Botanico library: (from left) Sandro, Laco Mucina, John Rodwell, Julian Dring, Joop Schaminée

2 million relevés from 108 databases. ReSurvey Europe is integrated into EVA, providing time-series data on plots. Parallel to this, the Global Index of Vegetation-Plot Databases provided a wider integration of phytosociological and other kinds of vegetation plot data.

A European Syntaxonomy

At the very first EVS meeting Sandro invoked the notion of the *tabellarium*, an integrated hierarchy of biological information first described by Federico Cesi, the Prince of Acquasparta and founder in 1604 of the Academia dei Lincei, whose headquarters are in the Palazzo Corsini, adjacent to the Orto Botanico. It was a dream to which he often returned and one which found expression in the third of the EVS original goals. Using the 'Conspectus of Classes of European Vegetation' produced by Mucina (1997) as a frame, the EVS resolved to develop a draft list of alliances as a comprehensive framework for a classification of European vegetation. Funding from the European Topic Centre under contract to the European Environment Agency stimulated the development of a crosswalk between this list of alliances and the developing EUNIS habitat classification (Rodwell et al., 1998). This was subsequently published as the *Diversity of European Vegetation* with funding from the Dutch National Reference Centre for Agriculture, Nature and Fisheries (Rodwell et al., 2002), providing the first ever high-level overview of vegetation of the Continent.

A thorough revision of the overview of alliances was led by Laco Mucina who assembled an expert team from many countries, the fruits of their long and hard labours seeing the light of day in a comprehensive and inclusive hierarchical frame, the *EuroVeg Checklist* (Mucina et al., 2016).

A Crosswalk to EUNIS Habitat Classification

At the very first EVS Workshop in 1992, I asked the gathered participants how many of them had heard of CORINE. One hand went up, a fair indication at that time of the links between vegetation science and the developing frame of European environmental policy. However, the middle years of the EVS saw an opportunity to participate, first, in the revision of the CORINE Biotopes Classification and then of the EUNIS Habitat Classification which replaced it (Rodwell et al., 1998). Effectively, this meant that a phytosociological frame replaced the Palaearctic Habitats Classification as the scientific basis of what has become the standard frame of reference for the description and conservation of European habitats. The EUNIS Habitat Classification, the EuroVegChecklistand and the Euro+Med species list now form the structural frame for the online database EuroVeg.EU (Chytry et al., 2024).

Red Data Book of European Habitats

This €1.5M project funded by the European Commission DG (Environment) aimed to assess changes in the extent and quality of all natural and semi-natural terrestrial, freshwater and marine habitats across Europe and in its neighbouring seas. Over 300 experts including many EVS members from 35 countries across Europe, from the Arctic Circle to the Mediterranean, worked to produce an assessment of the level of threat of European habitats. Territorial assessments of changes in extent and quality were combined to yield a single International Union for the Conservation of Nature category of threat at two geographical scales, across the EU28 and the EU28+ (Janssen et al., 2016).
All outputs of the Red List are lodged with the European Environment Agency where they will be in incorporated into EIONET, accessible through links on the DG(Environment) website. There are pdf modular fact sheets for each habitat including a habitat description, species list, images, crosswalks to other habitat typologies including Annex 1 and a distribution map.

Un Quinto Quarto

Every scientific meeting offers a chance for networking but in the EVS it is deep and lasting friendships that have provided that Quinto Quarto, that Fifth Quarter of our meetings. From that very first workshop *osterie* such as 'Othello' provided evening refreshment and humour – and I have a bill from 1992 to prove it. Towards nourishing this friendship, Sandro Pignatti has given more than his share. At the close of that EVS meeting in Naples, Sandro quoted another favourite cultural inspiration of his, the

music of Bach, referring to Cantata 'Ich habe genug', I have enough. Sandro, you have given us all more than enough, an abundance of companionship, inspiration and achievement. Grazie mille!

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