Alexander von Humboldt Medal 2014 to Sandra Lavorel

By Sandra Díaz

Dear colleagues

The Alexander von Humboldt Medal for Excellence in Vegetation Science is awarded by the International Association for Vegetation Science to scientists who have contributed greatly to the intellectual development of the field. It is my great pleasure to summarize the background and academic achievements of the recipient of the award for 2014, Sandra Lavorel.

Sandra Lavorel received her PhD in Ecology and Evolutionary Biology in 1991 in Montpellier, France, under the supervision of Francesco Di Castri. The subject was the mechanisms of species coexistence in Mediterranean grasslands, with emphasis on seed regeneration traits, although these were not called 'traits' yet at the time. She then moved to a postdoc in the Australian National University (Canberra), where she further explored coexistence mechanisms and started to think about plant functional types, under the influence of the pioneering work by vegetation modellers, and especially Prof. Ian Noble. These years in Australia were to have a deep, long-lasting impact on her life. In 1994 she returned to France and joined the Centre National de la Recherche Scientifique (CNRS). After a highly successful career at CNRS, she became a First Class Senior Research Scientist at the Laboratory of Alpine Ecology at the University of Grenoble. The career and life of Sandra Lavorel are inextricably linked to France. This is not only because France is the country in which she was born and grew up, and where she did a good proportion of her field work, but also because she embodies some of the best attributes of the French scientific tradition.

She has a vast international experience, having coordinated primary research consortia involving other European countries, Latin American countries, and South Africa. She has served in leading positions in a number of major international research networks, such as the International Geosphere-Biosphere Programme, the Global Land Project, and DIVERSITAS, where she became well known for her intellectual leadership and capability in creating highly stimulating, productive networks. She is one of the founders of TRY, the Global Communal Plant Trait Database (Kattge et al. 2011; www.try-db.org). She has also served in some major

national and international assessments related to biodiversity and global environmental change, such as the Millennium Ecosystem Assessment, where she was a review editor, the French National assessments of climate change impacts on biodiversity and ecosystems, on the links between agriculture and biodiversity, and on ecosystems and ecosystem services. More recently, she has participated in the Intergovernmental Platform on Biodiversity and Ecosystem Services and chairs the scientific committee of the French National Ecosystem Assessment.

Her main research interests center around plant functional trait ecology, disturbance ecology, rural landscapes, biodiversity and global change ecology, and more recently, inter- and trans-disciplinary research on ecosystem services. She has made outstanding contributions to conceptual functional ecology that are being widely applied by other scientists. She has also made major empirical contributions to our understanding of how the functional composition of herbaceous communities relates to ecosystem processes and how this translates into different ecosystem service tradeoffs in the ancient managed landscapes of Europe, particularly in the Alps.

Although her scientific career is not yet very long in years, she has produced an impressive body of work, having authored more than 170 publications, several of them highly influential. In 1997, in collaboration with Sue McIntyre and other colleagues from Australia and the U.S.A., she published a pioneering conceptual piece on plant functional classifications with reference to disturbance, in which she highlighted the importance of considering growth form (Lavorel et al. 1997). Five years later she published, in collaboration with Eric Garnier, what is her most cited first-authored article so far, a conceptual review article on plant response and effect functional traits (Lavorel and Garnier 2002). She has co-authored two highly cited articles on the impacts of climate change on plant diversity and ecosystems of Europe, with Wilfried Thuillier, Dagmar Schröter and other European colleagues (Schröter et al. 2005, Thuiller et al. 2004a). She is also a major author of an influential article linking different aspects of functional diversity with ecosystem properties and services (Diaz et al. 2007). Most of her publications are in the area of plant ecology, and she continues this line of work, but in the past few years she has ramified into trophic levels other than plants (Lavorel et al., Grigulis et al., Moretti et al.), and also into interdisciplinary ecosystem service research (Lamarque et al., Felipe-Lucia et al.). Along her career her scientific interests have changed and diversified, but there is a common pattern in all the publications she has lead: their focus is at the ecosystem – community interface, they tend to be built on the basis of explicit, solid conceptual models, and they are supported by detailed empirical field data.

For her contributions, Sandra Lavorel has received several prestigious awards, including the Bronze (for junior scientists - 1998) and Silver (for mid-career scientists - 2013) Medals of Centre National de la Recherche Scientifique, the Foulon Prize in Biology, of the French Academy of Sciences (2006), the Cozzarelli Prize of USA National Academy of Sciences (2007), the Sustainability Science Award of the Ecological Society of America (2008), the Jean Dufrenoy Prize of the French Academy of Agriculture (2009), the Chevalier de la Légion d'Honneur of the French government (2012), and the Médaille d'argent du Centre National de la Recherche Scientifique (2013). In 2013 she was elected member of the French Academy of Sciences.

But there are some remarkable aspects of Sandra Lavorel that are not as easily found online as her publications and other academic achievements. Those of us who have known her for quite a long time could mention, for example, how committed she is to nurturing the careers of young scientists, including joining very demanding field work every year. She is known for her capacity to work extremely hard, for her fairness, and for her consistency and generosity. Her interests go well beyond ecology, especially in the area of the great outdoors. She is qualified in trekking, mountaineering, and sea kayaking, having moved skiing and climbing equipment and a sea kayak repeatedly around the world. And she is particularly qualified in skiing under challenging conditions.

I can say that Sandra Lavorel is one of the very few persons for which my admiration and respect, far from having faded, have increased with time. This goes well beyond her science. This is a case in which behind the remarkable scientist there is also a remarkable person, known for her integrity, generosity, fairness and intellectual courage. So please join me, on behalf of the IAVS Awards Committee, in recognizing Sandra Lavorel as the 2015 recipient of the Alexander von Humboldt Medal.

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A subalpine meadow landscape with flowering Allium victorialis paintied by the Dutch artist Ed Hazebroek and given to Sandra Lavorel by IAVS.

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