

# Preface

This volume describes the fruits of the International Expert Workshop on Nitrogen Deposition, Critical Loads and Biodiversity that was held on 16-18th November 2009, in Edinburgh, UK. The need for the workshop emerged as a result of discussion within the International Nitrogen Initiative (INI)—a joint project of the International Geosphere Biosphere Programme (IGBP) and the Scientific Committee on Problems of the Environment (SCOPE). The INI highlighted that, while there was a wealth of evidence on the magnitude, components and effects of atmospheric nitrogen deposition on floral biodiversity in Europe and North America, there was an obvious lack of information on impacts on above- and below-ground fauna and all impacts in other parts of the world, with no clear overview of how the different strands of evidence fitted together.

Building on underpinning funds from the Packard Foundation, INI therefore joined forces with several other initiatives—the COST 729 and Nitrogen in Europe (NinE) programmes of the European Science Foundation (ESF) and the European Union Integrated Project NitroEurope, together with the US Environmental Protection Agency, the Ministry of Infrastructure and the Environment (Minienm; formerly VROM), the Netherlands, the Stockholm Environment Institute (SEI), and the Centre for Ecology and Hydrology (CEH). The result was the basis to invite the world's leading experts on nitrogen deposition and its effects to Edinburgh to share experience and debate the future challenges.

It is important to recognize, however, that this could not be a purely academic endeavour. As has been shown by the Expert Workshop, atmospheric nitrogen deposition represents a major threat to the biodiversity of many of the world's most precious ecosystems. With this in mind, it was essential to place the workshop in the context of international actions to manage air pollution and biodiversity. The leading agreements of the United Nations in this regard are the Long-Range Transboundary Air Pollution (LRTAP) Convention, under the United Nations Economic Commission for Europe (UNECE), and the Convention on Biological Diversity (CBD), which has a global coverage. Although each Convention is highly relevant, they have very different ways of working, and, until the Edinburgh meeting, there had been insufficient working contacts between them. The Workshop therefore included a specific objective to bring together leading experts from both Conventions as a ba-

sis for improving cooperation and mutual understanding. At the same time, the policy drive of the Conventions would feed back to inform the future scientific agenda.

The outcome was a joint workshop between experts from both the LRTAP Convention and the CBD, together with many other leading experts globally. In total, 140 experts from 30 countries participated, representing most continents and regions of the world. The proceedings and conclusions of the Expert Workshop are reported in this volume, while selected papers (see Appendix) are further developed in a Special Section of the journal *Environmental Pollution* (Goodale et al. 2011). In parallel the outcomes have been reported to the LRTAP and CBD processes (UN-ECE 2009).

We take this opportunity to thank the members of the Organizing Committee: Albert Bleeker, Roland Bobbink, Mercedes Bustamante, Tom Clair, Frank Dentener, Nancy Dise, Jan Willem Erisman, Jean Paul Hettelingh, Duan Lei, Annika Nordin, Till Spranger, Wim de Vries, Zifa Wang and, last but not least, Jim Galloway who originally proposed the workshop. The Organizing Committee was co-chaired by Kevin Hicks and Richard Haeuber, while Mark Sutton acted as workshop host. We thank the Centre of Ecology & Hydrology (Edinburgh), and SCOPE, which together provided the secretariat prior, during and following the workshop, held at the George Hotel in Edinburgh. In this regard, we extend our special thanks to the key individuals who provided the organizational foundation for the success of the workshop: Clare Howard, Agnieszka Becher (CEH), Susan Greenwood Etienne (SCOPE) and Allison Leach (University of Virginia, USA). We would also like to thank Bill Bealey (CEH) for master-minding the electronic registration process, Richard Clay (SEI) for his work on the flyer and other materials for the workshop and Steve Johnson at the University of Virginia for his assistance with the workshop website. Special thanks are also due to Henk Strietman at Minienm in the Netherlands, Sjamsudin Chandrasa at COST 729 and Ellen Degott-Rekowski at ESF for their advice and support. The European Union kindly provided supporting funds allowing completion of this publication under the frame of the ÉCLAIRE project (FP7) and we gratefully acknowledge the encouragement of José M. Giménez Mingo of the European Commission. Finally, we would like to thank Tamara Welschot and Judith Terpos at Springer for their patience and advice.

Mark A. Sutton, Kate E. Mason, Lucy J. Sheppard,  
Harald Sverdrup, Richard Haeuber and W. Kevin Hicks  
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## References

- Goodale, C. L., Dise, N. B., Sutton, M. A. (Eds.). (2011). Special Issue Section: Nitrogen deposition, critical loads, and biodiversity. *Environmental Pollution*, 159(10), 2211–2299.
- UNECE. (2009). Links between air pollution and biodiversity: Main conclusions from the International Nitrogen Initiative (INI) meeting of experts of the Convention on Biological Diversity (CBD) and the Convention on Long-range Transboundary Air Pollution (LRTAP) on “Nitrogen deposition, critical loads and biodiversity”, held on 16–18th November 2009 in Edinburgh, United Kingdom. Inf. Doc. 21, 27th Session of the Executive Body of the LRTAP Convention. [www.unece.org/env/lrtap/executivebody/welcome.27.html](http://www.unece.org/env/lrtap/executivebody/welcome.27.html).

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