

Restoring and maintaining biodiversity in semi-natural open landscapes: bridging the oceanic divide

the opening address for the Open Landscapes 2013 conference in Hildesheim, Germany.

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Semi-natural open landscapes, the theme of this conference, provide an opportunity for us to collectively re-examine one of the most profound issues facing humanity—how to maintain and expand the habitat for the many wild species with which we share Earth. How do open landscapes fit into a world which varies along a continuum from dense cities to strict wilderness? We need to look carefully at both the science that we have done, and the attitudes with which we apply that science. How we might do better in the future? A particular challenge is to restore natural driving forces that create open non-forested landscapes, such as natural water level fluctuations in lakes and floodplains.

I will begin by exploring some of the attitudinal differences between North America and Europe, to wild areas, at least as I have experienced them in writing and in travel. I will describe the problems this dichotomy creates, and then suggest how they can be transformed into opportunities. Some examples will likely include Great Lakes wetlands, Gulf coast pine savannas, and European limestone grasslands.

In a more technical section I will present a short list of the models we have for managing and enhancing biodiversity, and some of the observational and experimental data that support them. I will suggest that we already have many of the tools we need, and the challenge is to accelerate the application of existing knowledge.

I will close by reemphasizing that the rules of science do not change from Sicily to northern Germany, nor from Louisiana to the Great Lakes, so we can share the same principles wherever we live and whatever language we speak. If we take the right view (general models with regional calibration) and the right action (applying a consistent set of management tools based upon rigorous science) we should be pleasantly surprised by the many wild places we can create, restore and maintain.

Some suggested background reading

Foreman, D. 2004. *Rewilding North America: A Vision for Conservation in the 21st Century*. Washington, D.C.: Island Press.

Noss, R. F. and A. Y. Cooperrider. 1994. *Saving Nature's Legacy*. Washington, D.C.: Island Press.

Olson, D. M. et al. 2001. Terrestrial ecoregions of the world: a new map of life on Earth. *Bioscience* 51: 933–938.

Some suggested readings by the author:

Keddy, P.A. 2005. Putting the plants back into plant ecology: six pragmatic models for understanding and conserving plant diversity. *Annals of Botany* 95(9): 1-13.

Keddy, P.A. 2009. Thinking big: A conservation vision for the Southeastern coastal plain of North America. *Southeastern Naturalist* 8: 213-226.

Keddy, P.A., L.H. Fraser, A.I. Solomeshch, W.J. Junk, D.R. Campbell, M.T.K. Arroyo, and C.J. R. Alho. 2009. Wet and wonderful: The world's largest wetlands are conservation priorities. *BioScience* 59(1): 39-51.

Houlahan, J., P. Keddy, K. Makkey and C.S. Findlay. 2006. The effects of adjacent land-use on wetland plant species richness and community composition. *Wetlands* 26: 79-96.

Keddy, P. 1994. Reflections on the 21st birthday of MacArthur's *Geographical Ecology* - applications of the Hertzprung-Russel star diagram to ecology. *Trends in Ecology and Evolution* 9: 231-234.