Editorial

The majority of papers in the present special feature of *Acta Botanica Neerlandica* deal with dispersal of diaspores and related discussions about re-introduction of endangered plant species. After having considered the criteria for the introduction of species, papers follow on seed bank characteristics at the plant community level, changes in dispersal processes with respect to changing land use, and dispersal characteristics. With a few exceptions, the majority of plant communities harbouring endangered plant species tend to contain a short-term persistent seed bank. This implies that restoration management cannot rely on the seed bank. There would, then, be no problem if dispersal was as accurate as assumed on the basis of the dispersal structures of seeds and fruits. However, even pappus-bearing fruits, such as those of *Arnica montana*, show poor wind dispersal. Moreover, those fruits that travel longest distances appear to be non-viable. Also, diaspore dispersal by machinery and livestock is much lower than it was in former centuries, in low-intensity farming systems.

So far we have considered the state-of-the-art about conditions for spontaneous re-establishment in western European grasslands, from the plant characteristic point of view. The next and indispensable step is to ascertain that the abiotic conditions (hydrology and nutrient availability) and biotic conditions (interactions with established vegetation) of the target site of re-introduction will turn out to harbour safe sites. This aspect, meanwhile, can be experimentally tested by artificial introductions.

The initiative for this special feature came from a meeting on 're-introduction of endangered plant species' under the auspices of the Dutch Flemish Ecological Society (NEVECOL), held on 2 April 1997, where management policy was discussed at the end of the meeting. The apparent discrepancy between progress in science and the reluctance of authorities in charge of nature conservation highlighted the tension between science and society. As it is impossible to predict how far the maximal distance is that a diaspore can travel, it can be recommended that we rely on the distance to which, e.g. 95% of the diaspores can be dispersed. Such an approach, applied for a brook valley system, revealed that deliberate introduction is indispensable if the objective is to get the target species to become established. It makes no sense to wait for spontaneous immigration, while the species may even become extinct in the meantime. This is a scientific result, waiting for application to be tested in practice. The latter is, however, waiting for other answers.

It is remarkable to see how species can become extinct, e.g. by the increase of a dominant species such as *Phragmites australis*, out-competing all the less tall species, thus also limiting re-introduction success. At the same time, new alien species such as *Senecio inaequidens* spread rapidly. It is to be seen in the future if and how these alien species may counteract restoration management of presently endangered plant species.

The editors are indebted to Jan P. Bakker for the organization of the meeting and his contribution to the editorial work for the present special issue.

THE EDITORS

Correspondence: Prof. dr Jelte van Andel, Dept of Plant Biology, University of Groningen, PO Box 14, 9750 AA Haren, The Netherlands.