

The European Native Seed Conservation Network – progress towards target 8 of the Global Strategy for Plant Conservation

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The diversity of plants is essential for human well-being. However, this diversity of plants is under serious threat for many reasons. One reason with great immediacy is climate change; predictions say that the Mediterranean and Alpine floras of Europe will be particularly affected by climate change.

There is some realisation that it is much cheaper to take preventive action than to repair the damage afterwards, and the importance of saving plant diversity rather than living without it are internationally recognised (the Convention on Biological Diversity in 1992 and the Global Strategy for Plant Conservation (GSPC) in 2000). Target 8 of the GSPC requires “60 per cent of threatened plant species in accessible ex situ collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes”.

Seed banks and other *ex-situ* conservation methods play an important role in overall plant conservation strategy. They act as an insurance policy against the extinction of natural populations (and, ultimately, species) and they provide material for bolstering or replacing those populations and for conservation research.

The European Native Seed Conservation Network (ENSCONET, www.ensconet.eu), is funded to 2009 by the European Commission. The main purposes of the network are a) to improve quality, co-ordination and integration of European seed conservation practice, policy and research for native plant species and b) to assist EU conservation policy. It was initiated and is co-ordinated by the Royal Botanic Gardens, Kew (United Kingdom). It is the first time that seed banks and botanic gardens all over Europe are working together to bank the continent’s native wild plant species. ENSCONET is directly relevant to both the CBD and to the GSPC’s target 8.

In essence, the network co-ordinates conservation activities of its members, it reduces duplicated effort in establishing and improving seed conservation methodologies, and the network members share knowledge and technologies with the aim of helping less experienced members.

Its 24 full members are active in 17 European countries and cover all but one of the bio-geographical regions in Europe (Figure 1). In addition, several associate memberships are being arranged. The network activities are organised within four activity groups: Collecting, Curation, Data management and Dissemination.

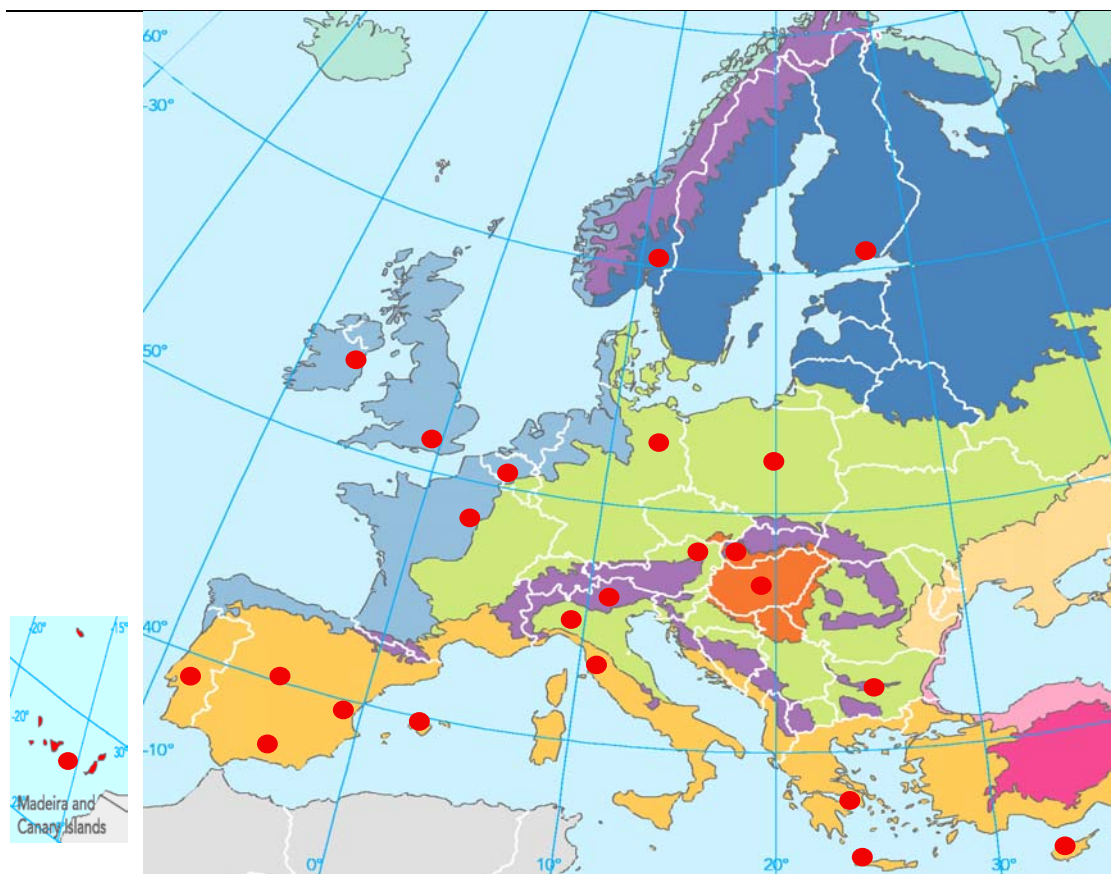


Figure 1: Red dots show the locations of the 24 full network members from 17 European countries. These 24 institutions cover 9 bio-geographical regions in Europe (map basis: EEA map of Biogeographical regions, version 5, 2001)

ENSCONET promotes and develops common high standards for seed collecting and a co-ordinated, prioritised seed collecting programme for the European spermatophyte flora: in 2008, the network will publish a best-practice seed collecting protocol on the internet. Currently, the network members are comparing national and European flora checklists with the lists of holdings in the network's seed banks, and some other, non-ENSCONET seed banks. This comparison is done separately for each of the bio-geographical regions in Europe and will lead to updated target lists for new seed collections of wild plant species. Already, the network's seed banks hold 36600 accessions, representing 5200 European taxa (4500 species and 700 subspecies). Furthermore, 1770 species are provisionally listed in one of the IUCN Red List categories. That means that ENSCONET holds samples of 35% of the total European flora (excluding the Canary Islands), and of more than half of an estimated 3500 threatened plant species in Europe. While good news, there is still much to be done. However, as the project is only half through its first phase, these numbers should rise steadily in future as members target new collections.

Target 8 of the GSPC requires 10% of the stored species to be included in recovery and restoration programmes. Such programmes are not part of the network for financial reasons, but fall to each network member. However, it is anticipated that co-ordinated recovery and restoration programmes might be part of a future development of ENSCONET, from 2009 on.

The activities of the curation activity group complement those of the collecting group. One of the first activities in the curation activity group was to gather data on European seed conservation facilities and resources. In total, more than 200 researchers and technicians are directly involved with the network activities. The partner institutes are using 12 cold rooms and over 100 temperature and light controlled incubators. As part of their research activities, 13 seed banks perform regularly seed germination tests. Based on this information, the network aims to: look for resource gaps across the continent; produce guidance on curation protocols; and share expertise and facilities.

All data on banked species (including data on sampled locations, germination data and storage conditions), are being assembled within an ENSCONET database. The structure of this database was finalised at the end of 2006 and has already been populated with data from two partners; the other partner's data should be assembled by the end of March ready for tidying. The idea is to have a virtual European native species seed bank ready by 2009, not only for use for the member institutes but linked to other external databases, and available online for researchers and other interested people all over the world.

Finally, the dissemination activity group aims to provide a better public understanding of seed banking and its importance for conserving native plants. Two key vehicles for this are an annual publication, ENSCONEWS and its website.

In summary, the major outputs of ENSCONET are:

- common high standard of collecting and curation across Europe
- established and running seed collecting programme for all bio-geographical regions in Europe
- database, with access from outside the network, including information on dormancy and storage behaviour of European species and availability of seed for research and restoration purposes
- long-term relationships among the network members
- new programme of work beyond 2009.

We hope that existing regional networks for banking wild species will find the ENSCONET protocols and data to be useful and that new networks will be stimulated by the European experience.