



Ashmolean Natural History Society of Oxfordshire

Oxfordshire Flora Group

Bringing Flowers Back -- Floral Recovery in Oxfordshire

By Camilla Lambrick

Introduction

Species loss in lowland England is taking place at about one species per year, and there is a considerable local extinction debt – the number of species likely to go locally extinct in the future if nothing is done. Proactive steps are recommended to halt this decline.

Background

As the publication *Oxfordshire's Threatened Plants* (2018) has shown, a total of some 80 native plants are reported to have gone extinct in the county. Moreover some 260 species that were once more common are now reduced to fewer than ten sites. The picture is similar all over central and eastern England, with many county populations down to a few plants. Species are continuing to be lost -- Sundew *Drosera rotundifolia* was last seen in the county in 2004.

No national or local organization currently attempts to carry out all the work that is needed. While the BSBI focus is on recording plant distributions, other national bodies Plantlife, the Species Recovery Trust and Natural England are concerned with nationally endangered species. Locally, the Wildlife Trust (BBOWT) mostly aims at habitat conservation and species on their own reserves. Local Flora Groups usually focus on the habitat management and monitoring of endangered plant populations in their native sites, but they can become more proactive.

The Case for Translocations

Very small populations are low in genetic diversity, and may consist of aging perennials, for instance Meadow Clary *Salvia pratensis*. In order to restore the genetic adaptability and floristic richness of the area, species can be propagated and translocated. Re-enforcement of small populations, re-introductions to extinct sites and the establishment of new ones in suitable places will all be important. To maintain the genetic diversity of wild species, and hence their adaptability to the changing environment, it will be necessary to bring individual plants from different sites together for cross-pollination.

Plant populations are also hosts to insects, and populations are being built up with plans for lepidopteran re-introductions or natural colonization.

An advantage of bringing plants into cultivation is that it is easier to do experiments on them, for instance of soil condition tolerance, and seed set, germination and seedling survival.

Making populations more resilient for the future will require a greater emphasis on experimental work and translocations. However translocations work best if a close eye is kept on the young transplants (Godefroid *et al.* 2011). This is best done on a little and often basis, and hence is ideal for local volunteer Flora Guardians.

Actions in Oxfordshire:

1. Introducing plants from outside the county to places where the species has gone extinct.

For instance Corn Cleavers, *Galium tricornutum* was (unsuccessfully) re-introduced to Wytham SSSI from Rothamstead Centre for Research.

2. Collecting seed for long term storage in the Millennium Seed Bank, Kew (MSB) and for local propagation.

Downy Woundwort,
Stachys germanica
a rare biennial.

Seed taken into
private garden from
a site now lost.

Photo Phillip Cutt.



Grass Poly,
Lythrum hyssopifolium

A sporadic annual of
flood-prone sites.
In 2008 there were
estimated to be about
100,000 plants, and
seed was collected
for the MSB. Other
years there have been
no plants.
Photo Frances Watkins.



Pheasant's Eye, *Adonis annua*.
The MSB collected seed
in 2013.

Photo Phillip Cutt.

3. Disturbing the soil at current or former sites so as to bring buried seed to the surface.

Digging a scrape in the meadow near Witney
where Creeping Marshwort, *Helosciadium repens*
had been known.

The vegetation was scraped off, the top soil was
heaped to one side, then subsoil removed, and
finally the topsoil spread back over the scrape area.

Sadly Creeping Marshwort did not reappear.
But it has recently returned to Walthamstow marshes
following further disturbance and appeared in Norfolk
after new disturbance.

Photo Camilla Lambrick.



4. Reinforcing populations by introducing plants propagated from the same locality.

This was done at Aston Upthorpe SSSI
to reinforce the Pasqueflower *Pulsatilla vulgaris*
population which had dropped to a very few plants.

Photo Frances Watkins.



5. Introducing plants to new sites to increase the connectivity of populations and to make species more secure (in case of loss of the original site) and more accessible to the public.

Pasqueflower plants raised from seed collected under licence in Bedfordshire were introduced in 1998 by BBOWT (the Berks Bucks and Oxfordshire Wildlife Trust) to Hartslock SSSI where Pasqueflower was not known, but the habitat was appropriate.

6. Introducing plants from different sites so that cross pollination can take place.



Meadow Clary, *Salvia pratensis*.

A few individual plants near Ardley appear to have survived nearly 30 years as they were mapped by Sue Everett in the 1980s. The population here has been reinforced both with plants originating here and also from Stonesfield.

Photo Rod D'Ayala.

7. Experimental Studies of Pollination.

Self pollination was compared with cross-pollination in Creeping Marshwort and Green Hounds-tongue, *Cynoglossum germanicum* using private gardens to grow isolated plants or pairs of plants.

8. Experimental Studies of Effects of Submergence on Creeping Marshwort.

It was found that, when grown submerged, the roots of Creeping Marshwort rotted and the plants floated to the surface, thus enabling them to land on a sand bank downstream.

9. Maintaining populations in semi-natural conditions.

At College Lake nature reserve the Berks, Bucks and Oxfordshire Wildlife Trust is maintaining populations of arable weeds in propagation units and in arable conditions.

These are just a sample of actions taken in Oxfordshire. In addition, Eared Willow, *Salix aurita* was propagated by cuttings and the population at Lye Valley SSSI was enlarged; Dark-leaved Willow, *Salix myrsinifolia* was propagated by cuttings and taken into cultivation at the Oxford Botanic Garden. Greater Water-parsnip, *Sium latifolium* seed collected from Wytham Ditches and Flushes SSSI and from Burnt Mill Meadow grown on by Oxford Botanic Garden, introduced at Milham Ford and Cutteslowe Ponds.

The Oxfordshire Fens Project and the Saving Oxford's Wetland Wildlife are collecting seed to be introduced to restored wetlands. Marsh Lousewort, *Pedicularis palustris* is especially important here as it is a semi-parasite on reeds and sedges and is being used as an ecological engineer to restore alkaline fens.

Introducing Lepidopteran food plants has also been undertaken for instance Devil's-bit Scabious, *Succisa pratensis* has been propagated and planted out by Butterfly Conservation with a view to Marsh Fritillary re-introduction, and Berberis, *Berberis vulgaris* has been introduced by the Radley Lakes Group, at a restored gravel pit site for two moths - the Barberry Carpet and Mottled Pug.

Conclusion

The Oxfordshire Flora Group considers proposed actions at the annual Flora Guardian Conference, and proposals are discussed with the landowners and with Natural England if it is a scheduled site or Section 41 species. Several species have Steering Groups that include the landowner, Plantlife and Natural England. This enables a thought-out programme of work to be followed. Careful records will be kept of any translocations that are made. In this way the native floral diversity of the county will hopefully be able to recover.

References

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