



SCARCE ARABLE PLANTS

1. INTRODUCTION

Arable plants have shown the greatest decline of any group of British plants over the past 25 years (Price, 2005). This is an inevitable process, as farming practices and the climate change. (Lockton, 2004).

This action plan discusses methods to preserve the scarcest of these plants and increase their diversity, while recognising that a balance needs to be kept between agricultural productivity and the potential harm caused by competitive plants. We need also to remember that arable plants do not only grow in arable fields but are to be found in small-holdings, roadsides, waste-places, allotments, parks and gardens.



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Many of our arable plants became extinct or declined when farming and horticulture became more intensive in the middle of the last century. The sub-region still has a moderately diverse range of these plants, comparing very favourably with other British counties in a survey of arable plant distribution in 1986/7 (English Nature).

Many arable plants have an impact on agricultural and horticultural operations mainly by their competitive growth. Perennial plants (couch grass, horsetails, creeping thistle etc.) compete particularly by their persistent root systems and are hard to eradicate by cultivation which often distributes them further. Annual plants compete especially during the germination of crops when their speed of growth and great numbers stifle the crop seedlings. Seed production of these wild plants can be prodigious and seeds may persist in the soil for many years ("One year's seeds are seven years' plants"). Their presence in a harvested crop can reduce the amount of money the farmer receives for grain and even small amounts can give the mills the 'excuse' for paying a reduced rate.

Nevertheless, the presence of a wide range of arable plants encourages a diverse population of associated mammals, birds and invertebrates. This diversity will have economic benefits, such as an increase in game birds, an increase in the natural predators of crop-destroying insects and an increase in plant pollinators. Without this mixed population of plants and animals, a monoculture of an agricultural crop may be more vulnerable to pest damage and disease.

Many of these familiar plants were once a food source for humans (e.g. corn spurrey, nettles), animal feed (e.g. fat hen, chickweed), remedies and folk medicine (e.g. feverfew, yarrow) and might become so used again. For many of those living in the countryside, as well as those who visit it, its beauty was enhanced by the flowers of the arable fields such as poppies, mayweed, and pimpernel.

2.	OUR OBJECTIVES & TARGETS	Target
A.	To survey and record changes in the populations and distribution of scarce arable plants within the LBAP region	2008
B.	To manage and maintain the extent of existing sites with scarce arable plants.	2010
C.	To increase the range by increasing the number of sites with scarce arable plants by 10% of the 2008 baseline figure.	2010
D.	To raise awareness of and promote practices that value a diverse arable flora.	2005-2015

ASSOCIATED HABITAT PLANS

- Hedgerows
- Lowland Grasslands (all types)
- Field Margins

ASSOCIATED SPECIES PLANS

- Farmland Birds

3. NATIONAL BAP OBJECTIVES & TARGETS

Spreading hedge parsley, *Torilis arvensis*

- Maintain viable populations at all extant sites.
- Achieve the natural colonisation of new sites.
- Establish populations of spreading hedge parsley at eight sites within the historic range by 2003
- Establish an ex-situ programme to protect genetic diversity, create a reserve population and provide experimental material.

Shepherd's Needle, *Scandix pecten-veneris*

- Maintain the range of shepherd's needle in the UK.
- Enhance the total population size of shepherd's needle in the UK.
- Achieve the natural colonisation of new sites.
- Establish an ex-situ programme to protect genetic diversity, create a reserve population and provide experimental material.

Narrow-leaved Hemp Nettle, *Galeopsis angustifolia*

- Maintain the geographical range of this species in the UK.
- Increase the total population size of this species in the UK.
- Achieve the natural colonisation of new sites.
- Establish populations at eight sites within the historic range by 2003
- Establish an ex-situ programme to protect genetic diversity, create a reserve population and provide experimental material.

4. CURRENT STATUS

The Warwickshire Biological Records Centre has records of arable plants which provide an indication of their previous distribution in the area but with a very patchy cover of reports. A more systematic distribution record is available from *The New Atlas of the British & Irish Flora* (2002) on a 10 km² distribution.

In 2002 the Habitat Biodiversity Audit identified 57000ha of land under cereal crops and a total of 77000ha of arable fields; in addition are smaller units of arable land such as allotments, smallholdings, parks and larger gardens. However, not all this area is suitable for the selected species. For example, light sandy soils, which are favoured by some of the arable plants, are mostly found between Rugby and Grandborough, up to the county border to the east, the A423 Southam to Coventry road to the west and the Blythe and Tame valleys north of Meriden.

Details of relevance are included in the Warwickshire, Solihull & Coventry Field Margin Action Plan concerning 'set-a-side' etc.

4.1 Legal and Policy Status

It is illegal to uproot any wild plant without permission of the landowner or occupier (Wildlife and Countryside Act 1981).

4.2 Current Factors Affecting The Species

The main factors that are influencing the distribution of arable plants of are:

- **The availability of agri-environment schemes** to promote the creation of cereal field margins, cultivated and fallow margins, conservation headlands etc is leading to an expansion of these species.
- **Intensive management associated with cereal production**, including the use of herbicides to ensure weed free crops, summer use of insecticides, increased fertiliser use and ploughing/cultivation up to the base of field boundary. Inputs have declined since the 1980's, but even with the more judicious use of pesticides and improved application technology, there are still further opportunities for biodiversity gains.
- **The use of commercially available 'wildflower mixes'** for reseeding bare ground after road-works, etc. These often contain seeds from scarce arable plants. Ideally, bare soil should be left to colonize naturally from the seed-bank (such as poppies), where seed-mixes are used they should be from local sources as some may contain species, which are not native to the area that might become invasive. There are several species-rich road-verges in the sub-region, which have benefited from this judicious reluctance to reseed bare areas.
- **Set-a-side and herbicides.** It is common practice to use a non-specific herbicide on set-aside land soon after the 15th April to prevent blackgrass from setting seed, and thus causing an agronomic problem in the next cropping year. The impact of this is that all vegetation is killed over a

period over a few days, and although there may be some regeneration later in the year, there is little scope for scarce arable plants to establish. Alternatively, set-a-side can be left as strips that are permitted to be left unsprayed, with only a single cut at some point in the year to prevent scrub encroachment. There is scope within the set-a-side rules to encourage rare arable plants on any set-a-side land, although this approach is only likely to succeed where the soils are relatively light and free from a heavy burden of very competitive plants, such as blackgrass (RPA & DEFRA, 2005).

5. CURRENT LOCAL ACTION

- The following 15 scarce arable plants have been selected for survey by the County Recorder for the British Botanical Society of the British Isles (BSBI) by 2008 as they have still been found locally in the past 5 years and are nationally recognised as Threatened Plants with IUCN categories of: CR = *critically endangered*; EN = *endangered*; VU = *vulnerable*; NT = *near threatened*; or SC = *nationally scarce* (Cheffings & Farrell, 2005), (Cheffings, 2004).
 - Blue pimpernel, *Anagallis arvensis ssp foemina*, (SC);
 - Corn buttercup, *Ranunculus arvensis*, (CR);
 - Corn gromwell, *Lithospermum arvense*, (EN);
 - Corn marigold, *Chrysanthemum segetum*, (VU);
 - Corn spurrey, *Spergula arvensis*, (VU);
 - Dwarf spurge, *Euphorbia exigua*, (NT);
 - Field woundwort, *Stachys arvensis*, (NT);
 - Large hemp-nettle, *Galeopsis speciosa*, (VU);
 - Narrow-leaved hemp-nettle, *Galeopsis angustifolia*, (CR);
 - Night-scented catchfly, *Silene noctiflora*, (VU);
 - Prickly poppy, *Papaver argemone*, (VU);
 - Shepherd's needle, *Scandix pecten-veneris*, (CR);
 - Spreading hedge-parsley, *Torilis arvensis*, (EN);
 - Stinking chamomile, *Anthemis cotula*, (VU);
 - Wild pansy, *Viola tricolor*, (NT).

This is not, however, a comprehensive list of the sub-region's scarce arable plants; others are sharp-leaved fluellen (*Kicksia elatine*), round-leaved fluellen (*Kicksia spuria*) and Venus' looking glass (*Legousia hybrida*).

- Good farming practice, including field margins, beetle banks and conservation headlands can be seen on many farms in the county where the farmer has an interest in demonstrating the farm's environmental gains. The Countryside Stewardship Scheme (DEFRA), which operated in Warwickshire until 31st March 2004, encouraged and supported financially, such management and has supported the creation of the following:

Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

- 1998 - 2003: Conservation headland with fertiliser permitted: 23ha
 - 1998 - 2003: Conservation headland without fertiliser: 53ha
 - 1996 - 2003: 6 metre arable margins: 1068km
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- The UK Arable Plants Survey have produced an identification guide freely available as a pdf file as well as a straightforward form for recording and reporting rare arable plants.
 - DEFRA have produced an advisory sheet on rare arable plants – Environmental Stewardship guidance note 10 – which is freely available to download from their website.
 - The RSPB have a freely available advisory sheet promoting and explaining the use of cultivated arable margins for rare arable plants.
 - LEAF are particular proponents of Integrated Crop Management, a system of farming which seeks to minimise inputs of pesticides.
 - Conservation headlands and field margins are promoted by FWAG, The Game Conservancy Trust, Linking Environment and Farming (LEAF) and other farm wildlife advisors. DEFRA provide advice that is linked to the agri-environment schemes. FWAG and others provide assistance to farmers with their agri-environment scheme applications.
 - The RSPB and The Game Conservancy Trust have information available on the management of land to benefit farmland birds and The Game Conservancy Trust, NFU, FWAG and RSPB have produced leaflets on the subject.
 - The Codes of Good Agricultural Practice (COGAP) for the Protection of Air, Soil and Water (DEFRA) and the Code of Practice for the Safe Use of Pesticides on Farms are available free of charge from the Rural Development Service within DEFRA. COGAP, although not legally binding, indicates what is acceptable as good farming practice and may have an indirect effect on the diversity of arable plants.
 - LEAF, FWAG and the Game Conservancy Trust hold demonstration days to provide advice and examples of good environmental practice.
 - Ongoing survey work e.g. recent botanical work by staff of Warwickshire and Coventry Museums and volunteers has included surveys of local field margins.

6. PROPOSED LOCAL ACTIONS (some dates amended - Core Steering Group - Feb 2008)

ACTION	Lead	Partners	By	Meets objective
Policy & Legislation				
PL1. Ensure that all relevant habitat policy is included in Local Planning Documents (see ODPM Planning Policy Statement PPS9)	LBAPSG	LA's	2005-2015	B
Site / Species Safeguard & Management				
SM1. Promote management favourable to scarce arable plants through appropriate agri-environment schemes.	NE	FWAG WWT GCT RSPB	2005-2015	B, C
SM2. Secure further uptake of agri-environment schemes, targeting sites where scarce arable plants are most appropriate and/or support other wildlife.	FWAG	NE WWT GCT	2005-2015	B, C
SM3. Encourage greater use of Integrated Crop Management.	FWAG	NFU LEAF	2005-2015	B, C
SM4. To survey for 15 selected scarce arable plants (c.f. 5. Current Local Action).	WM		2008	A, C
Advisory				
A1. Create a comprehensive library of existing information and advice on the management of land for scarce arable plants. Make available to local landowners and managers.	FWAG	NFU GCT NE RSPB WWT	2005	B, D
A2. Set up a co-ordinated advisory programme; target pro-active advice towards key sites and areas, and improve advisory material for landowners/ managers.	FWAG	NFU WWT RSPB GCT	2006	B, D
Research & Monitoring				
RM1. Continue to gather baseline data on distribution and populations of scarce arable plants. Identify and monitor appropriate BAP, Red Data Book, Nationally Scarce and Species of Conservation Concern.	WM	BSBI WWT DEFRA	2005-2015	A
RM2. Maintain and improve an inventory of known key sites and define areas where scarce arable plants are of high current or greatest potential biodiversity value.	WM	NE FWAG WWT	2005-2015	A

Communication & Publicity				
CP1. Promote the benefits of scarce arable plants to landowners and managers, and the general public, especially through targeted agri-environment schemes	FWAG	RSPB NFU WWT CLA GCT NE	2005- 2015	B, D

Abbreviations: BSBI – Botanical Society of the British Isles, CLA – Country Landowners Association, FWAG – Farming & Wildlife Advisory Group, GCT – Game Conservancy Trust, LEAF – Linking Environment and Farming, LBAPSG – Local Biodiversity Action Plan Steering Group, NFU – National Farmers Union, RSPB – Royal Society for the Protection of Birds, WM – Warwickshire Museum, WWT – Warwickshire Wildlife Trust

7. REFERENCES (see also LBAP Bibliography web page)

Cheffings, C. (2004). *New Plant Status Lists for Great Britain*. BSBI News 95, p.35-43

Cheffings, C & Farrell, L. (eds.) (2005). *The vascular Plant Red Data List for Great Britain. Special Status No.7*. JNCC, Peterborough

Lockton, A. (2004) *Arable Plants*. www.bsbi.org.uk/arable-plants.html

Preston, C.D., Pearman, D.A. & Dines, T.D. (2002) *New Atlas of British Flora* OUP.

Price, D (2005) *Finding the farms with flora*. Plantlife 42.

DEFRA (reprinted 2002) *The Water Code - Code of Good Agricultural Practice for the Protection of Water*.

DEFRA (revised 1998) *The Soil Code - Code of Good Agricultural Practice for the Protection of Soil*.

DEFRA (revised 1998) *The Air Code - Code of Good Agricultural Practice for the Protection of Air*.

Rural Payments Agency and DEFRA (2005) *Set-aside Handbook and Guidance for England*

Wilson, P. & King, M. (2003) *Arable Plants – a field guide*. WILDguides Ltd. www.wildguides.co.uk

8. FURTHER INFORMATION (see separate **Links** web page for links to web sites)

UK Biodiversity Action Plan no. 8 (Field Margins)
UK Biodiversity Action Plan no. 319 (Narrow-leaved hemp nettle)
UK Biodiversity Action Plan no. 561 (Shepherd's needle)
UK Biodiversity Action Plan no. 612 (Spreading hedge-parsley)

Botanical Society of the British Isles BSBI : James Partridge, 01926 427452 or email:
impart@yahoo.co.uk

Plantlife, The Wild-Plant Conservation Charity, 14 Rolleston Street, Salisbury,
Wiltshire, SP1 1DX Tel: 01722 342730 or email: enquiries@plantlife.org.uk

'New Priorities for Arable Plant Conservation' (2007)– a new report from Plantlife,
outlining recommendations for improving their prospects. See www.plantlife.org.uk

Flora Locale: *'Planting for Biodiversity – Local Seeds for Local Needs'*.
Denford Manor, Hungerford, Berkshire RG7 0UN. Tel: 01488 680 457 or email:
info@floralocale.org

Farming & Wildlife Advisory Group - information on the new Environmental
Stewardship agri-environment scheme. Tel.01926 318280 or email:
warwickshire@fwag.org.uk

How to identify arable plants – visit www.arableplants.org.uk for recommendations on
agri-environment schemes, identification guides and arable plant surveys.

9. CONTACT

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