



REVISED PLAN MAY 2017

SCARCE ARABLE PLANTS

1. INTRODUCTION

Since the mid-twentieth century, 'arable weeds' have shown the greatest decline of any group of British plants (Price, 2005, Falk, 2009). This is linked to modern farming practices and possibly 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. It should be noted that many arable plants do not only grow in arable fields but are to be found in small-holdings, roadsides, waste-places, allotments, parks and gardens, especially familiar species such as groundsel, fat-hen and red dead-nettle (see Falk, 2009 for a full list). However, some more specialised species are almost entirely reliant on arable land and a high proportion of these have either declined substantially or become extinct since farming and horticulture became more intensive in the middle of the last century. Some now only reveal themselves after ploughing releases an old seedbank e.g. night-flowering catchfly. Soil type and crop can influence the species present, but as a generalisation, the better sites for arable weeds tend to correspond with lighter, often calcareous soils rather than heavy clays.



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Nevertheless, 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 by English Nature (now [Natural England](#) (NE)). Sixteen species have been highlighted as requiring special attention due to their national rarity (see **section 5**), though several dozen further arable weeds can be considered very scarce at a county level. In 2009 twelve species appeared to be extinct (Falk, 2009), although corncockle (*Agrostemma githago*), not recorded as an arable weed since the 1950s, is often included in wildflower seed mixtures and results in short-lived populations on waste ground and fly-tipped areas. Thanks to the work of the [Warwickshire Flora Group](#) (WFG), some of these 'extinct' species have been recorded again (2015).

2.	OBJECTIVES	TARGETS
Associated Action Plans are: 'Roadside Verges', 'Parks & Public Open Spaces', 'Allotments', 'Gardens' and 'Field Margins'		
PLEASE CONSULT THE '<i>GENERIC SPECIES</i>' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL SPECIES PLANS		
A.	Maintain the extent of existing sites with scarce arable plants.	2015
B.	Increase the abundance of species on farmland.	2020

3. NATIONAL BAP OBJECTIVES & TARGETS

Of the 15 scarce arable plants selected for survey (see **section 5**) by the Warwickshire County Recorder for the Botanical Society of the British Isles (BSBI) in 2005, four are on the current UK Biodiversity Action Plan Priority Species list published in 2007 ([Joint Nature Conservation Committee](#)). The targets and objectives for the BAPs, updated in 2010, may be seen online:

- [Narrow-leaved hemp nettle](#) BAP (also known as red hemp nettle)
- [Shepherd's needle](#) BAP
- [Spreading hedge-parsley](#) BAP
- [Corn buttercup](#) BAP

4. CURRENT STATUS

The Warwickshire Biological Records Centre has records of arable plants which provide an indication of their previous distribution in the area, though coverage is rather patchy as relatively few systematic surveys have taken place. National distributions are available from [New Atlas of the British and Irish Flora](#) (2002) on a 10 km² distribution. Falk (2009) provides a checklist of Warwickshire arable weeds and rarity statuses for the scarcer species.

In 2002 the Habitat Biodiversity Audit identified 57000ha of land under cereal crops and a total of 77000ha of arable fields. However, the current figure from the HBA (2011) is 93,549ha; in addition there 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 due to soil conditions or prevailing crops. Allotments also harbour valuable populations of some of the moderately scarce species, and occasionally very scarce ones like weasel's-snout (*Misopates orontium*) in the allotments at Shottery. Further information on the arable habitat is included in the [Arable Field Margins](#) Action Plan.

[Agri-environment schemes](#) have a clear potential to boost this section of our flora. In the [Wild Pollinator and Farm Wildlife Package](#) produced by NE in 2016, Higher Level (HLS) options that support scarce arable plants are:

- EF10/HF10: unharvested cereal headlands for rare arable plants
- EF11/HF11: uncropped cultivated margins for rare plants on arable land
- HF20: cultivated fallow plots or margins for arable plants
- HK2: maintenance of species-rich, semi-natural grassland
- HK7: restoration of species-rich semi-natural grassland
- HK8: creation of species-rich semi-natural grassland
- HE10: floristically enhanced grass margins

4.1 Legal and Policy Status

A wide range of species and habitats are protected under international and domestic laws, including the [Wild Birds Directive](#) (1979), the [Wildlife and Countryside Act](#) (1981), the [Conservation Regulations](#) (1994) and [EC Habitats Directive](#) (1992). Protection of sites is afforded nationally through [Sites of Special Scientific Interest](#) (SSSI) designation, [Special](#)

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[Areas of Conservation](#) (SAC) and [Local Nature Reserve](#) (LNR) statutory status. Other sites are offered recognition of their value through Local Wildlife Site status (LWS), Local Character Areas and identified Landscape Scale Areas. The [National Planning Policy Framework](#) (2012) chapter/section 11 states conditions with regard to any development negatively affecting biodiversity, including protected sites, ancient woodland and other irreplaceable habitats (paragraph 118). The Wildlife & Countryside Act and schedule 2 of the [Conservation of Habitats & Species Regulations](#) (2010) make it an offence to intentionally kill, injure, take, possess, sell, buy or transport a range of species.

Under the Wildlife & Countryside Act it is illegal to uproot any wild plant without permission of the landowner or occupier.

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** administered by NE to promote the creation of cereal field margins, cultivated and fallow margins, conservation headlands etc is leading to an expansion of these species, especially in districts where arable weed seedbanks tend to persist longer (e.g. the Cotswold fringe and other districts with lighter soils).
- **Non-specific and non-local provenance seed mixtures for the provision of pollen, nectar and bird seed** – there is concern that the use of these do not allow the native flora to spring up again from the seed bank (Walker, 2016, Dines, 2016).
- **Intensive management associated with cereal production**, including the use of herbicides to ensure weed-free crops, 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 herbicides, improved application technology, and the growth of organic farming there are still further opportunities for biodiversity gains.
- **The use of commercially available 'wildflower mixes'** for reseeded bare ground after road-works, etc. These often contain seeds from scarce arable plants e.g. corn marigold. However, 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. Several recent road improvement schemes have provided shows of scarce arable weeds by allowing natural seedbanks to develop following disturbance and avoiding topsoiling.
- **Set-a-side and herbicides.** It was common practice to use a non-specific herbicide on set-aside land soon after the 15th April to prevent black grass (*Alopecurus myosuroides*) from setting seed, and thus causing an agronomic problem in the next cropping year. This severely reduced the scope for scarce arable plants to establish. Alternatively, set-a-side was 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 was scope within the set-a-side rules to encourage rare arable plants on any set-a-side land, although the approach was only likely to succeed where the soils were relatively light and free from a heavy burden of very competitive plants, such as black grass. However, in November

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2008 the EC agreed to abolish set-aside completely through the CAP Health Check and in 2009, [DEFRA](#) announced the decision to pursue an industry-led voluntary approach, known as the [Campaign for the Farmed Environment](#) (CFE) to recapture the environmental benefits of set-aside.

5. LOCAL ACTION

- 15 scarce arable plants were selected for survey by the County Recorder for the [Botanical Society of the British Isles](#) (BSBI) in 2008. They were nationally recognised as Threatened Plants with [International Union for Conservation of Nature](#) (IUCN) categories of: *CR* = critically endangered; *EN* = endangered; *VU* = vulnerable; *NT* = near threatened; or *SC* = nationally scarce (Cheffings, 2004, Cheffings & Farrell, 2005) and had still been found locally in the past 5 years. This is not a comprehensive list of the sub-region's scarce arable plants; others include sharp-leaved fluellen (*Kicksia elatine*), round-leaved fluellen (*Kicksia spuria*) and Venus' looking glass (*Legousia hybrida*). Falk (2009) provides a checklist of plants strongly associated with local arable land plus a county checklist revealing which ones, additional to the fifteen listed above, are considered scarce at a county level.
- The current status of these 15 species in Warwickshire is shown in the last column of the table below; the addition to the list of the small flowered buttercup (*Ranunculus parviflorus*) was made in 2016. Although corn spurrey and dwarf spurge have been declared Nationally Vulnerable and Nationally Threatened respectively, neither are rare nor scarce within the county. Corn spurrey is quite widespread across the county but thinly distributed, mainly limited to arable edges. Dwarf spurge is restricted to the limestone in the south where it seems to be holding its own; it is more varied in habitat and can be seen along the edges of car parks, waste ground as well as in along arable edges. Corn gromwell, field woundwort and night flowering catchfly have been seen at road improvement schemes where the seed bank has been disturbed (pers.comm.2012).

Species	IUCN category	Latest record
Blue Pimpernel <i>Anagallis arvensis</i>	SC	2013
Corn buttercup <i>Ranunculus</i>	CR	2005
Corn gromwell <i>Lithospermum</i>	EN	2012
Corn marigold <i>Chrysanthemum</i>	VU	2016
Corn spurrey <i>Spergula arvensis</i>	VU	2016
Dwarf spurge <i>Euphorbia exigua</i>	NT	2015
Field woundwort <i>Stachys arvensis</i>	NT	2010
Large hemp-nettle <i>Galeopsis</i>	VU	2013
Narrow-leaved hemp-nettle	CR	1992
Night-flowering catchfly <i>Silene</i>	VU	2013
Prickly poppy <i>Papaver argemone</i>	VU	2012
Shepherd's needle <i>Scandix pecten-</i>	CR	2001
Small flowered buttercup	VU	2016

Spreading hedge-parsley <i>Torilis</i>	EN	2013
Stinking chamomile <i>Anthemis</i>	VU	2016
Wild pansy <i>Viola tricolor</i>	NT	2014

- The [BSBI Threatened Plants Project](#), begun in 2007, has now ended but has been supported by the WFG since 2012. Spreading hedge-parsley was a 2011 TPP species but out of half a dozen sites surveyed it was only found near Walton Hall; the majority of the other sites had probably been sprayed, with very few wild plants in them at all. In 2012 the group searched intensively for corn buttercup, a 2012 TPP species, but it was found at none of the twelve sites where it had been seen previously.
- 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. Agri-environment schemes administered by NE encourage and support financially such management.
- Ongoing survey work by staff and volunteers of the Warwickshire Museum and volunteers includes surveys of field margins.
- **Local hotspots** identified are:
 - In the Ilmington area the steep lane leading to Ebrington Hill is rich in scarce arable plants, including 3 species of poppy, cut-leaved dead-nettle (*Lamium hybridum*), cornflower (*Centaurea cyanus*) and wild pansy (per.comm. S Falk 2012); also night flowering catchfly (pers.comm. Matt Wilmott, 2016).
 - Other arable plant hotspots include fields south of Combrook (dwarf spurge, fluellens), fields between Saxon Mill and Old Milverton (lots of corn spurrey, wild radish (*Raphanus raphanistrum*)), various fields near Baginton (annual knawel (*Scleranthus annuus*), bugloss (*Anchusa arvensis*)), and the A452 road verges north of Balsall Common (corn marigold, wild radish). Cut-leaved dead-nettle and corn spurrey occur in some of the fields south of Kenilworth Castle (per.comm. S Falk 2012).
 - The Walton Hall area has been found to have a diverse flora including spreading hedge parsley (WFG).
 - Part of the Kineton area is also floristically rich with corn parsley (*Petroselinum segetum*) (WFG).
 - A good site for corn marigold is Lower Brailes (pers.comm. Matt Wilmott, 2016).

6. PROPOSED LOCAL ACTIONS

ACTION	Lead	Partners	By
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Site / Species Safeguard & Management			
SM1. Secure further uptake of agri-environment schemes, targeting sites and appropriate management where scarce arable plants are most appropriate and/or support other wildlife.	NE	WWT	ongoing
Advisory			
A1. Target pro-active advice towards key sites and areas.	NE	WWT NFU	ongoing
A2. Promote management favourable to scarce arable plants through appropriate agri-environment schemes.	NE	WWT	ongoing
Research & Monitoring			
RM1. Continue to monitor and maintain an inventory of known key sites for the 16 selected scarce arable plants.	WFG	WCC WBRC SRNBG	ongoing
RM2. Record the presence of further scarce arable plants during other survey work to extend the existing inventory.	WFG	BSBI WCC WBRC	ongoing
RM3. Digitally map existing locations of scarce arable plants and share data with Natural England to enable the targeting of agri-environment schemes.	WBRC	WFG WWT	2015-2020
Communication & Publicity			
CP1. Promote the value of scarce arable plants as a rare genetic resource to landowners and managers.	NE	WWT NFU CLA	ongoing

Abbreviations: BSBI – Botanical Society of the British Isles, CLA – Country Landowners Association, LEAF – Linking Environment and Farming, NE – Natural England, NFU – National Farmers Union, SRNBG – Sun Rising Natural Burial Ground, WBRC – Warwickshire Biological Record Centre, WCC – Warwickshire County Council, WFG – Warwickshire Flora Group, WWT – Warwickshire Wildlife Trust.

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2016 can be seen at www.warwickshirewildlifetrust.org.uk/LBAP

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9. FURTHER INFORMATION.

The [RSPB](#) have a freely available advisory sheet promoting and explaining the use of cultivated arable margins for rare arable plants.

The [Codes of Good Agricultural Practice \(COGAP\) for the Protection of Air, Soil and Water](#) and [the Code of Practice for using Plant Protection Products](#) are available free of charge from Natural England. Although not legally binding, COGAP indicates what is acceptable as good farming practice and may have an indirect effect on the diversity of arable plants.

Conservation headlands and field margins are promoted by the [Game & Wildlife Conservancy Trust](#) and [Linking Environment and Farming](#). They both hold demonstration days to provide advice and examples of good environmental practice and LEAF are particular proponents of Integrated Crop Management, a system of farming which seeks to minimise inputs of pesticides.

10. CONTACT

John and Monika Walton are the BSBI Recorders for Warwickshire
Email: johnwalton46@tiscali.co.uk