Arable plants in Kent: a unique botanical heritage

There are approximately 150 arable plants in Britain, which have evolved to cope with continuously cultivated landscapes. Many of them were introduced to Britain with crop grain by the first farmers, thousands of years ago. Species such as violet horned-poppy and corn woodruff are now extinct and many others are amongst our most threatened species. This is mainly as a result of dramatic changes in agriculture over recent decades, including the move to autumn-sown, instead of spring-sown, cereal crops and the decrease of over-wintered stubbles, as well as increases in fertiliser and broad-spectrum herbicide use.

The following sheet is designed to provide an introduction to arable plants, encourage landowners and the wider public to start recording them, and provide some management advice for farmers.

Conservation benefits of arable plants

Arable plants have evolved over thousands of years and play an important part in the life cycle of other species. They provide a source of seed for many species of farmland birds, and nectar and pollen for bumblebees, butterflies and many other beneficial insects. They also provide a habitat in their own right – somewhere where invertebrates can shelter or overwinter.

A small number of arable plants, those frequently referred to as arable weeds, do get a bad press because they can damage mechanical operations during harvesting. Poppies, for example, have a latex-type substance in their seeds which can make the inner workings of a combine harvester so sticky that it grinds to a halt. However, there are only a very small number of species that cause such problems and most arable plants have little effect on crop yields. Modern farming techniques, and our greater understanding of these plants, also mean that it is much easier than in the past to keep arable plants restricted to field edges and corners, thus making it possible to provide a clean crop, as well as space for nature.

Some local extinctions

Records in *A New Atlas of Kent Flora* (see Further Reading) show that some species have not been recorded for many years - and the list is by no means complete:

- upright goosefoot – not recorded in Kent since before 1930
- broad-fruited cornsalad – always scarce in Kent; last recorded in the county in 1963
- mousetail – 'formerly with scattered records across much of Kent… it was last recorded in the county in 1975 and is now probably extinct.'
- corn buttercup – only found at one site near Marden in the survey for the 2010 Atlas, down from 15 tetrads [one km^2 survey areas] since the early 1980s; previously more widespread, though showing a steady decline since World War II

This sheet includes information about the following topics:

- conservation benefits of arable plants
- some local extinctions in Kent
- how you can help
- species to look out for when first learning to identify arable plants
- management options available to arable farmers
- some species which could benefit from cultivated margins
- references and further reading
- further advice

Dense-flowered fumitory, a nationally scarce arable plant © Kent Wildlife Trust


The Trust's reserve at Nashenden Farm © N.Jennings


Uncropped cultivated margin, Ranscombe Farm
© Bob Gibbons /Plantlife


Monitoring arable plants at Ranscombe Farm
© Kent Wildlife Trust

How you can help

- if you regularly go walking in the wider countryside, look a bit more closely at arable field margins (make sure you keep to public rights of way) and see whether you notice any arable wildflowers. If you record any, send your records through to the Kent & Medway Biological Record Centre with details of where you found them, the date and your name (see Further Reading). Some arable plants also flower later on in the year (September – October), when many wildflowers have gone over.
- if you would like to visit a site where arable plants are known to occur, then why not visit the Kent Wildlife Trust reserve at Nashenden or Plantlife's flagship nature reserve at Ranscombe Farm (both reserves are situated in the Medway valley area)? Depending on the time of year, species you are reasonably likely to see include Babington's poppy, corn mint, corn parsley, dense-flowered fumitory, dwarf spurge, field madder, henbit dead-nettle, rough poppy, round-leaved fluellen, sharp-leaved fluellen, small toadflax, small-flowered buttercup, stinking chamomile and Venus's-looking-glass. Rarities include few-flowered fumitory, ground-pine, narrow-fruited cornsalad and prickly poppy.
- if you own or manage some arable land, then there are various ways in which you can help to support our native arable plants (see overleaf). The best locations for arable plants will usually be where there is a low weed burden and the soils are naturally low in nutrient, such as shallow, chalky soils on steep slopes.

Species to look out for in Kent

If you are new to wildflower identification or have never focused on arable plants, then the following species are the easiest to start with: they are all found in Kent and, although not necessarily as rare as some other species, they are fairly distinctive and regularly recorded in Kent.

NR = Nationally Rare; CR = County Rare; NT = Nationally Threatened; VU = Vulnerable; NS = Nationally Scarce; EN = Endangered; BAP = Biodiversity Action Plan

Species	Habitat	Status	Flowering time
Dwarf spurge *Euphorbia exigua*	Calcareous soils	NT	Jun-Oct
Venus's-looking glass *Legousia hybrida*	Calcareous soils		May-Aug
Rough poppy *Papaver hybridum*	Calcareous soils	NR	Jun-Jul
Shepherd's-needle *Scandix pecten-veneris*	Heavy, base-rich soils	CR, BAP	May-Jul
Weasel's-snout *Misopates orontium*	Sandy loams	VU	Jun-Oct
Henbit deadnettle *Lamium amplexicaule*	Dry soils		Apr-Aug
Small toadflax *Chaenorhinum minus*	Usually on chalky soils		Jun-Oct
Wild pansy *Viola tricolor*	Dry soils	NT	Apr-Sept
Dense-flowered fumitory *Fumaria densiflora*	Dry soils, particularly where calcareous		Jun-Oct
Narrow-fruited cornsalad *Valerianella dentata*	Calcareous soils	EN	Jun-Aug


Fruit of the rough poppy © Kent Wildlife Trust


Small toadflax © Kent Wildlife Trust


Dwarf spurge and parsleypiert © Kent Wildlife Trust


Henbit deadnettle © Kent Wildlife Trust


Shepherd's-needle © David Carey


Venus's-looking glass © Kent Wildlife Trust


Blue pimpernel © R.I.Moyse


Ground pine © G.Hitchcock

Options available to arable farmers

There are two options available to farmers in existing agreements under the current Environmental Stewardship Scheme (ESS), which are specifically aimed at supporting arable plants (although options may change when the new agri-environment scheme starts). Ideally, these options should be situated where there is a low weed burden and the soils are either sandy, shallow, chalky or stony. However, it is worth obtaining some advice first since most farmers will have different requirements depending on cropping times, soil types, susceptibility of target arable plant species to pesticides, seed longevity and other factors. These options are rotational to fit in with your cropping scheme (for full details, see Natural England's Environmental Stewardship handbook in Further Reading).

EF11 (400 pts/ha)	**Uncropped cultivated margins for rare arable plants** ● for this option, you will need to cultivate an arable field margin annually in either spring or autumn to a depth of 15cm. Margins need to be 3-6m wide and can be relocated within the same field to prevent the build up of weeds. ● depth and time of cultivation will vary according to the requirements of the target species ● you will not be able to apply fertilisers or manures ● restrictions apply for the use of herbicides
HF20 (£440/ha)	**Cultivated fallow plots or margins for arable plants (rotational or non-rotational)** ● you will need to cultivate the fallow plot either in the autumn or in the spring, depending on the requirements of the target species ● the fallow plot needs to be retained for an agreed period without the use of pesticides and fertilisers. ● must not be located on land at risk of soil erosion


Cultivated margin EF11 © Kent Wildlife Trust


Arable headland HF20 in the Medway Valley © Kent Wildlife Trust

Other Environmental Stewardship options which can help arable plants

In addition to EF11 and HF20, there are further options available under the current ESS, although they are not targeted specifically at arable plants. These include Wild Bird Seed Mix or Game Cover Crops; Skylark plots; Low-input spring cereals to retain an arable mosaic; Reduced herbicide cereal crops followed by overwintered stubbles; Unfertilised or unharvested cereal headlands; and Uncropped cultivated areas for ground-nesting birds.

Species which you can help to manage for by including some of the options above in your farming system

Species	Status	Cultivation time	Flowering time	Favoured soil type
Dense-flowered fumitory	NS	Spring and occasionally in the autumn	Mid-June to August	Calcareous clay and sandy loams; occ. On coastal sands
Pheasant's eye	RDB VU, KRDB 2	Mainly in the autumn	June to July	Calcareous, silty to clay loams
Blue pimpernel	NS	Spring	June to August	Well-drained calcareous soils
Weasel's-snout	VU, KRDB 2	Spring	July to October	Acidic soils, sandy loams
Corn buttercup	NS; CR (only known at one site, Marden)	Autumn	Early May to mid-June	Heavy clay soils
Shepherd's-needle	NS; CR	Autumn cultivation preferred	April to July	Heavy clay soils
Narrow-fruited cornsalad	EN	Spring	June to August	Calcareous soils

Scarlet pimpernel, field pansy and field speedwell – a typical arable plant assemblage © Kent Wildlife Trust

Further reading and references

Arable Plants website: www.arableplants.org.uk

Kent Wildlife Trust
Land Management Advice series
Recording wildlife: getting started.

Natural England (2010). *Environmental Stewardship Handbooks* (3rd ed.).

Philp, E.G. (2010). *A New Atlas of the Kent Flora.* Published by Kent Field Club.

Plantlife website http://www.plantlife.org.uk/nature_reserves/ranscombe_farm/

Plantlife International (2009). *Arable Plants: a management guide.* (12 pages). For a copy, please phone 01722 329035 or email enquiries@plantlife.org.uk.

Plantlife International (2005). *Important Arable Plant Areas.* Plantlife International.

Plantlife International (2009). *Threatened Arable Plants Identification Guide.* Plantlife International.

Wilson, P. & King, M. (2003). *Arable plants - a field guide.* Published by English Nature and Wildguides.

Obtaining further advice

For further information, please contact the Trust's Land Management Advice Service by calling 01622 662012 or by emailing info@kentwildlife.org.uk

Head Office: Kent Wildlife Trust, Tyland Barn, Sandling, Maidstone, Kent ME14 3BD
Tel: 01622 662012 Fax: 01622 671390 info@kentwildlife.org.uk