New resources on arable plants from Colour in the Margins

Colour in the Margins ran from 2018 to October 2021 and targeted the conservation of ten rare arable plants in England, providing knock-on benefits for the wider community of arable plants and other farmland wildlife that depend upon them.

A range of resources produced by the project are available to download from https://naturebftb.co.uk/the-projects/colour-in-the-margins/

Click on the yellow download bar and keep scrolling down to find:

- **Crib sheets** to help you identify species found on arable farmland
- **Guides to arable plants** and ground beetles
- Detailed **conservation and ecology portfolios** of our ten target species
- **Habitat management guides** for farmers and land managers
- **Seed sowing and reintroduction guidance**
- **Survey methods** for arable plants

Made possible with Heritage Fund

ARABLE PLANT & HABITAT INFORMATION

Crib Sheets

Identification tables for groups of closely related plants.

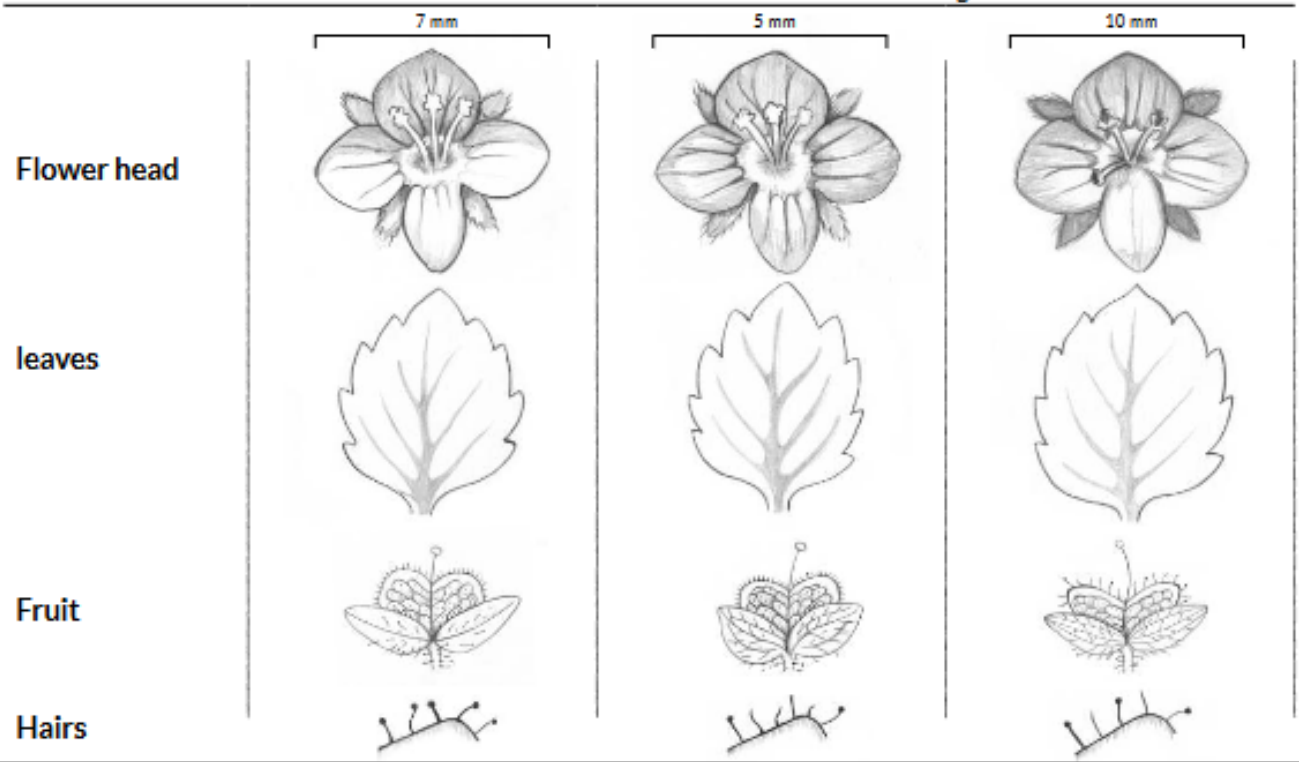
BACK FROM THE BRINK

ARABLE PLANT CRIB

Toadflax and fluellens

Plant	Round-leaved fluellen	Sharp-leaved fluellen
Species	*Kickxia spuria*	*Kickxia elatine*
Threat status	Least Concern	Least Concern
Distribution	On all types of soils across southern and central England and south-east Wales. Very scarce elsewhere in England and Wales. Not present in Scotland or Northern Ireland	On all types of soils across south and central England and Wales. Very scarce elsewhere and not present in Northern Ireland
Life cycle	Annual	Annual
Stem	20-50 cm long horizontal spreading branches (prostrate) with 1-2 vertical branches. Sticky hairy-woolly	20-50 cm long horizontal spreading branches (prostrate) with 1-2 vertical branches. Hairless-hairy
Leaves	Oval-round hairy leaves with long woolly stalks	Sharp triangular-shaped leaves with side pointing lower corners (hastate-shaped) with hairless-hairy stalks. Lower leaves are rounded and look like Round-leaved fluellen
Flowers	Flower stalks are woolly-hairy. Calyx tube same length as the petal tube (corolla)	Flower stalks are hairless. Calyx tube same length as the petal tube (corolla)
Petals	8-11 mm long flower. Coloured yellow with a dark purple upper lip. Downwards curved pale spur	7-12 mm long flower. Coloured yellow with a violet upper lip. Downwards straight pale spur

Plant	Green field-speedwell	Grey field-speedwell	Common field-Speedwell
Species	*Veronica agrestis*	*Veronica polita*	*Veronica persica*
Threat Status	Least Concern	Least Concern	
Distribution	Widespread	Widespread	Common and widespread
Growth	Creeping or growing upwards Rooting at lower nodes	Creeping or growing upwards Rooting at lower nodes	Creeping or growing upwards Rooting at lower nodes
Stem	Stems hairy all round	Stems hairy all round	Stems hairy all round
Leaves	Oval egg-shaped leaves with 3-4 teeth per side All leaves are longer than wide and light green	Egg-shaped with 4 teeth per side Lower leaves are wider than long. Dark green above, often purplish below	Egg-shaped 5-7 teeth per side All leaves longer than wide Dull light green above (occasionally purplish below)
Flower positioning	Single flowers that originate from leaf nodes	Single flowers that originate from leaf nodes	Single flowers that originate from leaf nodes
Flower colour	White, upper lobe bluish or reddish	Bright blue. Centre of flower dark, lower lobe can be white	Bright blue, lower lip often white
Flower size (width)	6-8 mm	5-8 mm	8-12 mm
Fruit	Wider than long Two erect rounded lobes Obvious glandular hairs only	Wider than long Two erect rounded lobes Short, arched, normal hairs and some obvious glandular hairs	Wider than long (twice as wide as long) Two spreading, sharp-edged lobes Can have glandular and non-glandular hairs



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Ecology and Conservation Portfolios

Adonis annua - Pheasant's-eye

Bromus interruptus - Interrupted Brome

Filago pyramidata - Broad-leaved Cudweed

Galeopsis angustifolia - Red Hemp-nettle

Ranunculus arvensis - Corn Buttercup

Silene gallica - Small-flowered Catchfly

Torilis arvensis - Spreading Hedge-parsley

Valerianella rimosa - Broad-fruited Cornsalad

Veronica triphyllos - Fingered Speedwell

Veronica verna - Spring Speedwell

Looking after

Interrupted Brome

Bromus interruptus

Ecology and Conservation Portfolio

BACK FROM THE BRINK

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Figure 10: Interrupted Brome at Ranscombe Farm © Plantlife

Reintroduction

The foundation of conservation and subsequent reintroduction of this species began with Dr Phillip Morgans Smith (1941-2004), a lecturer in biology and ecology at Edinburgh University, who brought some Interrupted Brome plants to a conference of the then Botanical Society of the British Isles. He had a particular interest in Brome grasses and had harvested seed from Pampisford in 1963, and had been growing plants since then, but was unaware of its disappearance from the wild. Seed harvested from plants grown by Smith was grown on and bulked-up at Edinburgh and Cambridge Botanic Gardens, at Paignton Zoo, and in other collections. Ten collections of seed are now kept at Kew's Millennium Seed Bank[3,12].

Work by Kew has confirmed that, despite all the plants growing today deriving from Smith's initial collection, genetic variation is high and there has been minimal genetic drift[4], making reintroduction viable.

Initial reintroductions were undertaken in an arable plot at Aston Rowant National Nature Reserve, Oxfordshire, and a field headland at Whittlesford in Cambridgeshire. The population at Aston Rowant survived for a few years until the management was delayed due to poor weather and sheep gaining access to the plot, grazing all the seed heads of the plants. At Whittlesford, the population persisted for a few years until spray drift from a nearby field of beans destroyed the plants, and it did not reappear from seed. Unfortunately, there was little monitoring as the resources were not available to undertake any follow-up work after the initial reintroductions[13,14,15,16].

> Ten collections of Interrupted Brome seed are now kept at Kew's Millennium Seed Bank

There have been more recent successful reintroduction attempts at BBOWT's College Lake Nature Reserve, Plantlife's Ranscombe Farm Reserve (Figure 10), and

Habitat

Interrupted Brome is associated with agricultural crops and disturbed field edges, typically on calcareous soils derived from chalk or limestone but also on neutral, sand and clay sites. Historically it also occurred in hay meadows, on fallow land, roadsides and waste ground.

The species was particularly associated with sown fields of Sainfoin *Onobrychis vicilfolia* which was grown for horse fodder and relied on regular sowings to maintain the crop. This may have benefited Interrupted Brome as there is evidence of the seed having been collected with the Sainfoin crop seed as a contaminant, and it is therefore likely that it would have been accidentally re-sown into suitable conditions for germination[3].

Distribution

Interrupted Brome is endemic to the British Isles but was first recorded in 1849 at Odsey in Cambridgeshire (then Hertfordshire). It was subsequently not seen for another 40 years when it was rediscovered in a fallow field in Berkshire and was eventually formally named and described as a full species in 1895. By the 1930s, the plant was distributed quite widely in England, with records scattered through central and southern England and East Anglia. However, the plant had become virtually extinct by the 1960s, when searches of previously known sites revealed one remaining population on a field margin near Pampisford in Cambridgeshire. The species was last recorded at this site in 1972, and although a strip in the last remaining field was cultivated, no plants grew and seed harvested from this last population proved unviable due to mildew and aphids. Thus, with no known sites outside of England, Interrupted Brome was considered to have become globally extinct[2,3] (Figure 8).

The comparative lateness of its discovery suggests the species may have been introduced as a seed contaminant from an unknown native range rather than having independently evolved in the British Isles. If this was true, the species would therefore be both a non-native neophyte and an endemic – a rare and counterintuitive circumstance – although there is little evidence to support this.

Figure 8: Interrupted Brome distribution across Britain and Ireland. The data used to create this map has been provided under licence from the Botanical Society of Britain and Ireland (BSBI) and accessed from the Society's online database.

Reasons for decline

The main cause of decline for Interrupted Brome is likely to have been the improvement of seed cleaning. In addition, the mechanisation of the agricultural industry led to a decline in growing Sainfoin *Onobrychis vicilfolia* as the number of horses kept for labour declined. Other threats would also have been improved and more competitive crop varieties reducing the light and nutrients that were available for Interrupted Brome, which is a poor competitor, as well as increased use of artificial fertilisers and herbicides. However, the impact of these threats would only have affected populations still present following World War II when these advances in agriculture became widespread.

GB status and rarity

Extinct in the Wild.

Protection under the law

This species is included as a species of principal importance for the purpose of conserving biodiversity under Section 41 (England) of the Natural Environment and Rural Communities Act 2006 but does not have any legal protection.

Looking after

Pheasant's-eye

Adonis annua

Ecology and Conservation Portfolio

BACK FROM THE BRINK

HERITAGE FUND Plantlife rspb giving nature a home

Trialling techniques to break Pheasant's-eye seed dormancy

Reintroducing Pheasant's-eye is difficult as the complicated dormancy means that specific processes are required to trigger germination before even considering preparing the site and the vegetation that may grow-up alongside Pheasant's-eye seedlings.

A series of trials were undertaken during the summer of 2019 to establish different reintroduction processes. The results, population counts of flowering plants, were gathered in May 2020.

2019 was a very warm year with a spring drought and hot conditions remaining into July and August. From mid-September onwards, the weather turned remarkably wet, with many farms unable to undertake autumn cultivation. The wet weather lasted until the beginning of March 2020 when drought conditions resumed.

Timing of sowing and natural maturation of the seed

Three farms were sown with Pheasant's-eye plants at different periods during the summer of 2019:

- A farm in Kent was sown with 7,200 seeds spread across two plots, one plot on calcareous free-draining chalk and the other on calcareous clay with flint, at the end of July.
- A farm in Wiltshire had two plots on calcareous chalk soil sown with a total of 17,000 seeds at the end of July/beginning of August.
- A plot was sown with 3,000 seeds on calcareous chalk soil at the end of August on Portland.

Prior to sowing, the plots were prepared by cultivating the ground and creating a seed bed. The sowing rate at each location was 100 seeds per square metre.

The plots on the Kent farm had the most flowering plants; 110 plants in total across the two plots (germination and survival rate of 1.5%; Figure 15).

- The calcareous chalk plot had 108 small plants. This was a germination and survival rate of 3.0%, an average of 1.4 flowers per plant, and a potential 17.6 seeds per plant based on the number of seed-heads, flowers and flower-buds counted.
- The clay loam with flints had two plants, although the plants were much bushier with a greater number of flower heads on the clay soil. The germination and survival rate was 0.06%, with an average of 9 flowers and a potential 219.5 seeds per plant.

Organic control of Barren Brome at a Pheasant's-eye site in south Wiltshire

The removal of pernicious weeds such as Creeping Thistle *Cirsium arvense* and Barren Brome *Bromus sterilis* can be a challenging task when aiming to preserve other scarcer arable plant species.

Figure 11: Pheasant's-eye at a farm in south Wiltshire © Lawrence Sampson

A population of Pheasant's-eye persists in good numbers on a holding in south Wiltshire and the removal of Barren Brome has been successfully undertaken (Figure 11). Pheasant's-eye at this location grows in a specially managed autumn-cultivated plot. It is often thought to be a June-flowering species, but the plants at this location usually flower in mid-May and have generally gone to seed by the second week of June. Whilst Pheasant's-eye grows here reliably each year, in recent years there has been an increase in Barren Brome germination, which could threaten the survival of Pheasant's-eye as it is a less competitive species.

In order to remove the Barren Brome without damaging the Pheasant's-eye population, the farm manager used a slightly deeper cultivation across the whole plot to bury as much of the brome seed as possible. The soil is calcareous with flints, and the normal cultivation is to a depth of 5-6 inches (12-15 cm). Deep cultivation involved turning over the soil by 6-7 inches (15-18 cm). Whilst this management did not totally eradicate the Barren Brome from the plot, it served to remove most of the plants that would otherwise have been present the following year. It is also thought that a slightly earlier working of the ground may help remove this problem species.

> Organic pernicious weed control methods can be used in place of chemical treatments

These methods of organic pernicious weed control could be used in place of chemical treatments such as graminicides and may be particularly effective when undertaken on a regular, but infrequent, basis such as once every few years.

one of the larger and more robust plants on clay soil. Right: one of the smaller plants on chalk soil.

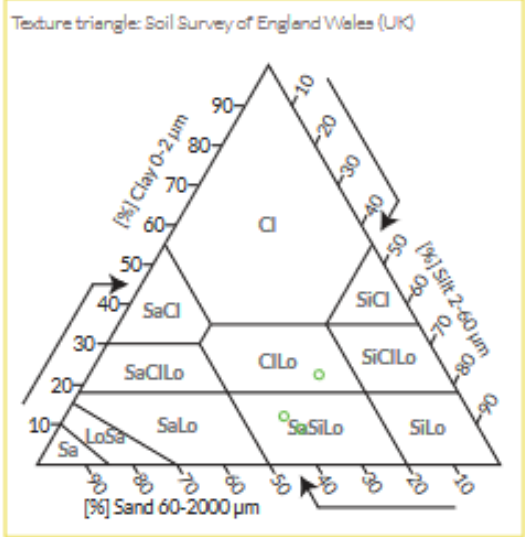

Figure 6: Soil triangle displaying the proportions of clay, silt and sand present at three sampled Pheasant's-eye populations

samples have been gathered: two from Wiltshire, near Salisbury and the border with Hampshire and both from arable land; and a third taken from a Somerset location

Cultivated Margins and Plots

Cultivated, uncropped, arable field margins or plots provide an ideal habitat for rare cornfield flowers. The species that benefit from this management will in turn provide for a range of beneficial pollinating and predatory insects and other farm wildlife. Managing an area separately from the harvested area also ensures that there is no direct impact on the commercial value of the crop.

Habitat for arable plants ★★★★★

Habitat for farmland birds ★★★★★

Habitat for invertebrates ★★★★☆

Habitat for small mammals ★★★★★

It is vital for the conservation of rare and threatened arable plants that perennial grass margins are not established on the remaining field margins where they occur. These plants need regular cultivation as well as protection from herbicides and fertilisers. Careful management of these margins will ensure there is no significant weed burden at the edge of the crop.

This is one of the most effective measures to conserve arable plants in the farmed environment, and also has wide-ranging benefits for other farmland wildlife, such as invertebrates that feed on the arable plants, and associated farmland birds and small mammals that also eat the seeds.

Where should cultivated margins be located?
Cultivated margins or plots can be sited around any arable field, indeed many of our rare arable plants are now confined to the edges of fields. The best sites are generally in the open away from heavy shading, and with a sunny, south-facing aspect, particularly at the top of slopes. These areas often tend to be the lowest yielding area for arable crops. Generally, rare plants are usually not found on nutrient-rich soils dominated by competitive grass weeds and cleavers, preferring lighter or thinner soils, but there are some cornfield flowers, such as Corn Buttercup and Spreading Hedge-parsley, that usually grow on heavy soil which may be nutrient rich.

GEMENT GUIDE

Illustration by evansgraphic.co.uk © Plantlife

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undesirable weeds, so applications would have an adverse effect. Take steps to prevent spray drift onto the uncropped areas which would also limit the growth of nutrient-loving plants.

Cultivated plot © Claire Muddow

s and plots

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or, if applicable, in a grass field that has undergone reversion to maintain the annual disturbance that arable plants require. The margin should have a diversity of plants to encourage the greatest range of arable wildlife.

Management of cultivated margins and plots
To achieve a cultivated margin, annually cultivate at least a 3 m wide margin or larger plot with a fine tilth to about 4-6 inches depth (10-15 cm). The cultivation should take place in either spring or autumn depending on the target species. Extra working may be required on heavier ground to break-up clods of soil and create suitable conditions for germinating plants to root. For ease of management, this can be done when preparing the adjacent cropped land, but may need to be undertaken specifically within a grass field on an annual basis. The area is then undrilled and left to regenerate naturally. Ploughing is preferable to a minimal tillage system as is likely to bring up buried seed from the seed bank. In addition, long term minimum tillage tends to result in a build up of vigorous weeds and grasses, reducing the amount of bare ground, which is often required by arable plants.

The margins should not receive any fertiliser applications as fertiliser encourages

Annual cultivations not only encourage germination of the rarer arable species but can also prevent the build up of perennial weeds. However, rotating margins or plots may be necessary to prevent the build-up of problem species, and if the density of problem plants becomes too great a targeted herbicide control could be used. Herbicides should not be applied to the margins until the arable plants have set seed as they will directly affect rare arable plants. High topping of any problem weeds, such as thistles, can be undertaken before they set seed. If the area is part of an agri-environment agreement, additional advice should be sought before such management is undertaken.

Rotation of margins is preferred over herbicide spot treatment of problem weeds and invasive species. This rotation or the application of herbicides will not benefit the target species, but previous positive management will have replenished the seed bank of the rarer species. Most species can withstand several years in the seed bank under conventional cropping before reviving under cultivated margin management.

If there is a species present that has short seed longevity in the soil seed bank, such as Corn Buttercup Spreading Hedge-parsley or Shepherd's-needle and possibly Pheasant's-eye, particularly on soils with slow drainage leading to seeds rotting, cultivation of soils should be undertaken on a more regular basis to provide the conditions for these plants to grow.

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Arable Plants Survey Form

Plantlife

How to complete this form:

• **Details of the location of the site are essential.** Eight-figure grid references (e.g. ST35466791) are most useful for the exact location of species records or a six-figure grid reference (e.g. ST354679) of the centre of the field. The owner should be assured that no information will be made public. Soil type can be recorded in broad categories e.g. chalky, heavy clay, sandy loam etc.

• **Number of years the site has been within an arable rotation.** If this is an estimate, please indicate with a 'c.' before the number (e.g. c.50).

• **The list of plants to be recorded includes 121 species** - ranging from those that are still locally frequent to those that are now extremely rare. To assess the botanical quality of an assemblage of species, the combined totals of each species score should be calculated, irrespective of the abundance of each individual species.

• **Record relative abundance on the DAFOR scale using one letter per present species:**
D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

• **It is useful to know something of the overall composition of the plant community.** The most abundant species should be recorded as well as any species that might be a problem to conservation management, for instance cleavers, upright brome or black-grass.

• **Any details of the site, which you feel are relevant, should be included in the comments section.** These could include descriptions of the field boundary, adjacent habitats of importance, management factors (e.g. game cover crops etc.).

• **A small sketch map is helpful.** This should show the position of the uncommon species within the field. There should be an indication of scale and a north point if possible.

Farm/Site Name:	Owner:	Tel:
Field Name/No.:	Grid Ref:	County:
Recorder name:	Recorder Tel:	Date:
Soil Type:	Past Cropping:	
Current Crop:	No. of yrs arable rotation:	
Type Cultivation (plough/min till):	Most abundant species in the field:	
Agri-environment Scheme details:		

Sketch Map + any other comments (other interesting species, problem species, management details etc.)

The information collected will be used for the identification of important sites for arable plants and for the improved targeting of agri-environment schemes. The information will be used by Plantlife.

No site should be visited without the owner's permission. Data gathered without permission cannot be used.

I declare that the landowner's permission was received before this information was sent to Plantlife:

..... (Recorders name/signature)

Email completed forms to enquiries@plantlife.org.uk or
Post to Plantlife, 2nd Floor Brewery House, 36 Milford Street, Salisbury, Wiltshire SP1 2AP

Species	Score	DAFOR / Present
Pheasant's-eye *Adonis annua*	8	
Corncockle *Agrostemma githago*	9	
Groundpine *Ajuga chamaepitys*	8	
Rough Mallow *Althaea hirsuta*	6	
Small Alison *Alyssum alyssoides*	6	
Corn Chamomile *Anthemis arvensis*	8	
Stinking Chamomile *Anthemis cotula*	7	
Annual Vernal-grass *Anthoxanthum aristatum*	6	

Species	Score	DAFOR / Present
Bur-chervil *Anthriscus caucalis*	3	
Dense Silky-bent *Apera interrupta*	4	
Loose Silky-bent *Apera spica-venti*	6	
Slender Parsley-piert *Aphanes australis*	1	
Lamb's-succory *Arnoseris minima*	9	
Black Oat *Avena strigosa*	5	
Black Mustard *Brassica nigra*	2	
Lesser Quaking-grass *Briza minor*	5	

Species	Score	DAFOR / Present
Field Brome *Bromus arvensis*	6	
Interrupted Brome *Bromus interruptus*	6	
Rye Brome *Bromus secalinus*	7	
Field Gromwell *Buglossoides arvensis*	8	
Greater Pignut *Bunium bulbocastanum*	6	
Thorow-wax *Bupleurum rotundifolium*	9	
False Flax *Camelina sativa*	5	
Small Bur-parsley *Caucalis platycarpos*	9	
Cornflower *Centaurea cyanus*	8	
Small Toadflax *Chaenorhinum minus*	1	
Fig-leaved Goosefoot *Chenopodium ficifolium*	2	
Maple-leaved Goosefoot *Chenopodiastrum hybridum*	3	
Nettle-leaved Goosefoot *Chenopodiastrum murale*	7	
Many-seeded Goosefoot *Lipandra polyspermum*	2	
Upright Goosefoot *Oxybasis urbicum*	9	
Flixweed or Tansy Mustard *Descurainia sophia*	3	
Purple Viper's-bugloss *Echium plantagineum*	6	
Common Stork's-bill *Erodium cicutarium*	1	
Musk Stork's-bill *Erodium moschatum*	3	
Slender Tare *Ervum gracile*	7	
Smooth Tare *Ervum tetrasperma*	2	
Treacle Mustard *Erysimum cheiranthoides*	2	
Dwarf Spurge *Euphorbia exigua*	6	
Broad-leaved Spurge *Euphorbia platyphyllos*	3	
Narrow-leaved Cudweed *Logfia gallica*	9	
Red-tipped Cudweed *Filago lutescens*	8	
Broad-leaved Cudweed *Filago pyramidata*	8	
Common Cudweed *Filago germanica*	6	

Species	Score	DAFOR / Present
Tall Ramping-fumitory *Fumaria bastardii*	2	
White Ramping-fumitory *Fumaria capreolata*	3	
Dense-flowered Fumitory *Fumaria densiflora*	3	
Common Ramping-fumitory *Fumaria muralis* ssp. *neglecta*	7	
Western Ramping-fumitory *Fumaria occidentalis*	5	
Fine-leaved Fumitory *Fumaria parviflora*	7	
Purple Ramping-fumitory *Fumaria purpurea*	4	
Martin's Ramping-fumitory *Fumaria reuteri*	6	
Few-flowered Fumitory *Fumaria vaillantii*	7	
Red Hemp-nettle *Galeopsis angustifolia*	9	
Downy Hemp-nettle *Galeopsis segetum*	9	
Large-flowered Hemp-nettle *Galeopsis speciosa*	7	
False Cleavers *Galium spurium*	6	
Corn Cleavers *Galium tricornutum*	9	
Nit-grass *Gastridium ventricosum*	5	
Long-stalked Crane's-bill *Geranium columbinum*	2	
Small-flowered Crane's-bill *Geranium pusillum*	2	
Corn Marigold *Glebionis segetum*	7	
Jagged Chickweed *Holosteum umbellatum*	6	
Henbane *Hyoscyamus niger*	7	
Smooth Cat's-ear *Hypochaeris glabra*	7	
Wild Candytuft *Iberis amara*	7	
Sharp-leaved Fluellen *Kickxia elatine*	2	
Round-leaved Fluellen *Kickxia spuria*	3	
Henbit Dead-nettle *Lamium amplexicaule*	1	
Northern Dead-nettle *Lamium confertum*	3	
Yellow Vetchling *Lathyrus aphaca*	7	

Species	Score	DAFOR / Present
Venus's-looking-glass *Legousia hybrida*	3	
Greater Venus's-looking-glass Legousia speculum-veneris	6	
Field Pepperwort *Lepidium campestre*	3	
Darnel *Lolium temulentum*	9	
Small Bugloss *Lycopsis arvensis*	1	
Blue Pimpernel *Lysimachia foemina*	5	
Grass-poly *Lythrum hyssopifolium*	8	
Dwarf Mallow *Malva neglecta*	2	
Smaller Tree-mallow *Malva multiflora*	6	
Field Cow-wheat *Melampyrum arvense*	6	
Corn Mint *Mentha arvensis*	1	
Annual Mercury *Mercurialis annua*	2	
Perfoliate Penny-cress *Microthlaspi perfoliatum*	7	
Weasel's-snout *Misopates orontium*	7	
Mousetail *Myosurus minimus*	7	
Cat-mint *Nepeta cataria*	7	
Common Broomrape *Orobanche minor*	2	
Prickly Poppy *Roemeria argemone*	7	
Rough Poppy *Roemeria hispida*	3	
Yellow-juiced Poppy *Papaver lecoqii*	2	
Four-leaved Allseed *Polycarpon tetraphyllum*	5	
Northern Knotgrass *Polygonum boreale*	4	
Cornfield Knotgrass *Polygonum rurivagum*	3	
Corn Buttercup Ranunculus arvensis	9	
Rough-fruited Buttercup *Ranunculus muricatus*	6	
Small-flowered Buttercup *Ranunculus parviflorus*	3	
Hairy Buttercup *Ranunculus sardous*	3	

Species	Score	DAFOR / Present
Wild Radish *Raphanus raphanistrum*	1	
Greater Hay-rattle *Rhinanthus angustifolius*	7	
Shepherd's-needle *Scandix pecten-veneris*	9	
Annual Knawel *Scleranthus annuus*	8	
Field Madder *Sherardia arvensis*	1	
Small-flowered Catchfly *Silene gallica*	8	
Night-flowering Catchfly *Silene noctiflora*	7	
White Mustard *Sinapis alba*	2	
Corn Parsley *Sison segetum*	3	
Corn Spurrey *Spergula arvensis*	7	
Field Woundwort *Stachys arvensis*	6	
Cut-leaved Germander *Teucrium botrys*	6	
Spreading Hedge-parsley *Torilis arvensis*	8	
Knotted Hedge-parsley *Torilis nodosa*	3	
Narrow-fruited Cornsalad *Valerianella dentata*	8	
Hairy-fruited Cornsalad *Valerianella eriocarpa*	6	
Broad-fruited Cornsalad *Valerianella rimosa*	8	
Green Field-speedwell *Veronica agrestis*	1	
Grey Field-speedwell *Veronica polita*	2	
Breckland Speedwell *Veronica praecox*	6	
Fingered Speedwell *Veronica triphyllos*	8	
Spring Speedwell *Veronica verna*	8	
Wild Pansy *Viola tricolor* ssp. *tricolor*	6	
Assemblage Score (sum of all species scores)		