

Cereal field margins

Introduction

Cereal field margins are strips of land lying between cereal crops and the field boundary, which are deliberately managed to create conditions which benefit key farmland wildlife species such as grey partridge. They can take a variety of forms, the principal types being:

- A 'Wildlife Strip' 6m wide adjacent to a cereal crop, together with a 1m 'Sterile Strip' between the Wildlife Strip and the crop. The wildlife strip is cultivated once a year but not cropped; the Sterile Strip is maintained so as to prevent aggressive arable weeds spreading into the adjacent cereal crop.
- A 'Conservation Headland' of 6m or wider, forming the outer margin of the crop and separated from an adjacent field boundary or other vegetation by a 1m Sterile Strip. The Conservation Headland is cropped with cereals, but is managed with reduced inputs of pesticides so as to favour wild arable plants and invertebrates.
- A combined Wildlife Strip and Conservation Headland, separated by a Sterile Strip and managed as described as above.
- Game crops, stubble or grassland fallows lying between annually cropped land and the field boundary.



Conservation Headland © John Holland

New Single Farm Payment rules allow field margins to be used for set-aside. Cross compliance requires all hedgerows and ditches in fields of 2ha or more to be protected by a 2m buffer zone except for newly planted hedges. There are also a number of agri-environment options under the Entry Level Stewardship (ELS), Organic Entry Level Stewardship (OELS) and Higher Level Stewardship (HLS) schemes that will benefit invertebrates in cereal field margins.

Threats

- **Intensification of cereal production**

This includes the use of herbicides to ensure a weed free monoculture, and summer use of insecticides.

- **Changing cultivation times**

The shift to winter cropping with the associated loss of winter stubbles and the reduction in the undersown area.

- **Changes in traditional management**

The reduction in rotation of cereal crops with other land covers (including grass leys and fallows).

Habitat Management

Maintain a mosaic of habitats

Areas which have a range of habitat niches will be more attractive to invertebrates and will support greater numbers. Cereal field margins adjacent to ancient hedgerows, grassy banks, woodlands or other semi-natural habitat frequently support a richer or more valuable invertebrate fauna, emphasising the need for management to retain such boundary features. Thick hedges and tussocky marginal vegetation will provide valuable shelter to invertebrates such as spiders, ground beetles and bumblebees. Species such as grasshoppers are important food items for Cirl buntings and other farmland birds, while many insects such as ground beetles and hoverfly larvae are valuable predators of aphids and other crop pests.

Arable margins should probably be situated at the top edge of fields where possible or where better drainage and greater exposure to the sun tend to allow more weeds and weed-feeding invertebrates to persist.

Create Beetle Banks

Beetle banks provide shelter for species such as ground beetles and spiders that prey on cereal pests such as aphids, thus reducing the need to spray. Providing beetle banks within the cropped area enables these beneficial invertebrates to colonise the cereal field more quickly. Beetle banks are sown strips (approximately 2m wide) of native grasses, including tussock-forming species such as cocksfoot, that run across a cultivated field. The headlands at each end can be cultivated so that the field is not completely divided in two. Beetle banks should not be sprayed and can be mown every 2-3 years to allow the tussocks to regenerate.



Brush-thighed seed-eater (*Harpalus froelichii*) © Roger Key

Create Conservation Headlands

Conservation Headlands are areas that have been sown with the crop but are subject to reduced spraying in order to allow broadleaved weed species to grow. These provide food for seed-eating invertebrates as well as pollen and nectar sources for insects such as bumblebees.

Encourage diverse, flower-rich vegetation

Allowing native wild flower species to grow in field margins will increase the plant species diversity, providing pollen, nectar, seeds and prey for a variety of invertebrates. Under the Entry Level Stewardship (ELS) and Organic Entry Level Stewardship (OELS) schemes, a butterfly and bumblebee seed mix can be sown to provide the insects with a foraging source.



White-tailed Bumblebee (*Bombus lucorum*) © John Feltwell

Maintain early succession habitat

Many invertebrates such as the Brush-thighed seed-eater (*Harpalus froelichii*) feed on the seeds of ruderal plants that grow on disturbed soil, such as *Chenopodium album*. Cereal field margins provide a continuing resource for such habitats as long as they remain unsprayed.

Manage short sections on rotation

Rotational management such as cutting should only be carried out in short lengths of field margin to create a range of vegetation heights and to allow recolonisation of the less mobile invertebrate species from other sections of the margin.

Reduce pesticide applications

Spraying cereal field margins with pesticides and selective herbicides destroys the invertebrate species and the native plant species such as Charlock and Fat Hen on which they depend. An unsprayed margin of 6m should be retained around the field and care should be taken to protect the field margins from pesticide drift. Under new regulations, these margins can now be included in set-aside; the 6m margins qualify for points under the ELS or OELS schemes.

Adopt spring cultivation

The shift from spring to autumn cultivation in many arable fields has had an effect on invertebrate groups such as ground beetles, favouring smaller species at the expense of some larger species. Seed-feeding beetles as a whole appear to have declined more than other groups of ground beetles, and this probably reflects the reductions in weed populations in arable fields

BAP species associated with cereal field margins:

Large garden bumblebee (*Bombus ruderatus*)

Brush-thighed seed-eater (*Harpalus froelichii*)



For a more comprehensive list of species associated with this habitat, please see the download list.

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