

HEDGEROWS, FIELD MARGINS AND WILDLIFE CONSERVATION

Field boundaries and hedgerows are often the only permanent vegetation in an arable environment. They can provide a habitat for a buffered community of plants and animals of significant value to wildlife conservation, game management, agriculture and the landscape. In Britain they support over 1000 plant, 1500 insect and 70 bird species. This contrasts strongly with the number of species supported by intensive arable crops.

It has been estimated that over 100,000 km of field boundaries have been destroyed in Britain since 1950, mainly as a result of the intensification of arable agriculture. Nevertheless, the remaining 400,000 km of field margins and hedges in arable areas represent an important conservation resource.

Since 1980, several influential research projects, changes in the public perception of agriculture and the availability of grant aid are changing the way in which field margins are managed. There is now a trend towards conscious fostering of these areas for their recently recognised agronomic value and as part of the growing concept of Environmental Stewardship. The goal is to maximise the profitability of the whole farm while retaining and enhancing its conservation and amenity value. The method is to use modern agricultural inputs in a manner which minimises their impact on non target species.

Some aspects of beneficial management of field margins are:

HEDGEROW MANAGEMENT.

Hedges of mixed native species can be maintained as a nesting habitat and food source for insect and berry eating birds. Cut every two or three years preferably in late winter to maintain height, density, flower and berry production. Tall sections encourage pheasants, overhangs can be cut back to provide sunny shelter for partridges (1).

Avoiding herbicide, insecticide and fertiliser application in the hedge bottom maintains a competitive population of wild biennial and perennial plants which suppresses growth of annual weeds. The diverse plant population supports a robust invertebrate community from which predators disperse into the crop and suppress the development of damaging aphid populations. The long flowering succession achieved by the mixed shrub and herb species provides an early and sustained pollen source for hoverflies and pollinating insects. A permanent grass strip between the hedge and the crop can protect the hedgerow from agrochemicals and reduce the risk of annual weeds invading the crop. It can also improve the value of the hedgerow to ground nesting birds and promote brood survival.

PERMANENT GRASS BOUNDARY STRIPS.

Permanent field boundaries permitted to develop a flora of tussock grasses and perennial wildflowers provide both nesting and brood rearing habitat for ground nesting birds including pheasant and partridge. A proportion of perennial wildflowers is desirable to increase the number of insect species available, and provide food for seed eating birds. Agronomic benefits also result from the populations of insect and other invertebrate predators maintained by the diversity of microhabitats within the strip.

Allow tussock formation by cutting separate sections in alternate years. Avoid application or drift of agrochemicals onto the strip. However, if *Galium aparine* or *Bromus sterilis*, increase in the strip they can be controlled with low doses of selective herbicides ('Fusilade', 'Eagle') which are effective in winter when the desirable perennials are dormant (4).

In some situations, the suppression of vegetation on boundary strips by their use as tracks can be important to the survival of certain rare weeds (5).

BEETLE BANKS

An economically valuable reduction of cereal aphid populations in the crop has been demonstrated following the establishment of semi-permanent strips of non invasive tussocky grasses on low ridges at 200 metre intervals within cereal fields. Up to 1000 aphid predators (particularly beetles and spiders), per square metre can overwinter in the warm dry microhabitat of the grass tussocks (1). In the spring, they move out into the crop and effectively suppress the build up of damaging cereal aphid populations. The inclusion of a limited number of perennial wildflowers in the strips can increase their value to hoverflies and pollinating insects as well as providing alternative aphid species to maintain the predator population when cereal aphids are absent (6).

CONSERVATION HEADLANDS

a). Low input cropped headlands. These are a strip of crop usually 6 metres wide on a headland to which a reduced input of agrochemicals is applied. The objectives may be to favour a population of 'declining' or rare weeds or to encourage weed species which support insects important to bird broods (especially partridges). Fertiliser application is minimised in order to reduce the density of crop foliage, thereby favouring the rare arable plants and allowing dry access to ground feeding birds.

b). Grass and wildflower headlands. Headlands on which a seed mixture is sown to establish a low maintenance but persistent grass and perennial wildflower cover. The objective is usually to produce nesting and brood rearing habitat for birds, but butterflies, pollinating insects and pest predators also benefit. These headlands can be useful in managing behaviour of walkers on footpaths

c). Uncropped annual strips. A six metre strip cultivated annually but not sown to a crop, intended to encourage the growth of rare weeds where one or more of the desired species occurs in the seed bank (5).

FUNDING

Several sources of funding are available for various aspects of Environmental Stewardship. The availability and requirements of the schemes are constantly changing. FWAG (4) is an excellent source of current information.

USEFUL ADDRESSES:

1. The Game Conservancy Trust, Fordingbridge, Hants, SP6 1EF
2. The British Trust for Ornithology, The Nunnery, Thetford, Norfolk, IP24 2PU
3. The Royal Society for the Protection of Birds., The Lodge, Sandy, Beds. SG19 2DL
4. Farming and Wildlife Advisory Group, NAC, Stoneleigh, Kenilworth Warks. CV8 2RX
5. P. Wilson, Wessex Environmental Associates, 4 Prospect Place, Grove Lane, Redlynch Salisbury SP5 2NT (Research on rare and declining weeds)
6. Herbiseed, New farm, Mire lane, Twyford, RG10 0NJ (Seed mixtures for wildlife conservation and Environmental Stewardship)

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