



## 3.1 Arable Farmland Habitat Action Plan

### VISION

A landscape rich in farmland birds such as the skylark, and once common arable weeds such as the corn buttercup; where large areas of winter stubble are maintained for nesting birds and where wildflowers and insects thrive in field margins and headlands on every farm.

### KEY FACTS

#### What have we got?

Farmland settings are the most familiar of landscapes surrounding Swindon. Farmland includes both arable and pasture intermixed with other habitats. Chalk and light, sandy soils dominate the southern edge and eastern side of Swindon Borough. The southern edge takes in the fringe of the Marlborough Downs, an area largely used for arable farming. North of Swindon, farmland becomes more mixed. The influence of farming goes beyond the habitat itself; Swindon's countryside has been shaped and maintained largely by farming. Many of its semi-natural areas have been managed historically with agriculture as the major land use.

Some of the important characteristics of Swindon's arable farmland are as follows:

- Virtually all arable land is under private ownership.
- Arable farmland is intensively managed for food production and commercial considerations are paramount.
- Some of the plants and animals associated with arable farmland are viewed by many in the farming industry as "pests".
- Knowledge of the distribution and relative abundance of organisms on arable farmland is limited. Because of this, we lack the information with which to make an accurate assessment of its importance for biodiversity.

- The management of farmland also has a direct impact on other habitats. For example, soil erosion and resource protection.

#### Why is this habitat important?

Little, qualitative or quantitative data on the biodiversity status of arable farmland exists. However, lists of up to 300 species of flowering plants, 700 species of invertebrates and some 70 species of birds dependent on arable farmland have been recorded (Game Conservancy [GC]). Biodiversity on arable farmland has come under intense pressure, most notably since 1945, largely due to rapid changes in agricultural practice. The decline of species associated with arable farmland, such as the grey partridge and other farmland birds, is well documented. A decline in other groups, such as vascular plants, lower plants and invertebrates, is less extensively documented.

On the southern edge and eastern side of the Swindon Borough, arable farmland has a long history as the major land use. The conditions (light soils and a long history of cultivation) indicate that this area could have a richer flora than existing records suggest. Arable plant communities are generally rather poor, but a few rare species have been recorded including corn buttercup and Venus's looking glass. It is highly likely that other species and sites exist, but are unrecorded because no extensive surveying has been carried out.

Swindon contains areas of farmland that are very biologically diverse. In particular, to the south of Swindon, on the northern edge of the Marlborough Downs, and to the north of Swindon, agriculture is still relatively mixed with a mosaic of arable and pastoral farming. This northern part of the Borough has very good populations of declining farmland birds, including lapwing, tree sparrow and grey

partridge. Swindon Borough also supports very important populations of yellow wagtail.

The extensive area of farmland in Swindon means that many species will utilise arable land in conjunction with other habitats or features that are part of the landscape, such as hedgerows, water bodies, woodland and grassland. The management of arable farmland will affect these habitats both directly and indirectly.

Within the AONB, the close-cropped nature of the arable land cover emphasises the topography and contributes, particularly on the downland, to the sense of openness and space - an essential characteristic of the AONB and arable landscapes.

#### **How is this habitat protected?**

A number of species associated with arable farmland are protected by the Wildlife and Countryside Act (1981). This protects all nesting birds from disturbance. Under the Food and Environment Protection Act (1985), it is illegal to spray pesticides into hedge bases, unless there is a specific label recommendation or a specific off-label approval. Under the current procedures for pesticide registration and review, some compounds have statutory label exemptions preventing their use on the outermost 6m-wide strips of crops. These restrictions are designed to prevent over-spraying of watercourses and to protect non-cropped habitats.

## **OPPORTUNITIES AND THREATS**

### **Opportunities**

The biodiversity of arable land depends on many factors linked to the economics of farming. To date European policy has focused on production based subsidies. A movement towards whole farm subsidies, or flat-rate, area-based payments, could be beneficial to arable biodiversity (encouraging less intensive methods, larger headlands etc) or paradoxically lead to arable land and its biodiversity being converted to other habitat types (woodland or grassland).

The new agri-environment schemes, such as the Environmental Stewardship Scheme which will replace the Countryside Stewardship Scheme, encourage farmers to leave grass margins around fields to buffer and protect adjacent sensitive habitats such as hedgerows and ditches as well as options such as growing crops specifically for feeding wild birds.

The Organic Farming Scheme is available to farmers wishing to convert their holdings to organic production. Evidence is accumulating that organic systems are beneficial to farmland biodiversity, although an increase in mechanical operations such as weeding can threaten ground nesting birds.

Wiltshire FWAG Farmland Biodiversity Project, funded by English Nature, aims to identify biodiversity hotspots of species associated with farmland, particularly arable. These hotspots are then being targeted with advice for farmers and landowners on how best to manage their land for these species whilst also promoting improved awareness of farmland as a valuable habitat for wildlife.

### **Threats**

**Use of broad-spectrum agro-chemicals:** Problems associated with agro-chemicals are well documented and highlighted by the demise of the grey partridge. Populations have declined by 83% since the 1970s because the use of herbicides and insecticides has reduced the number of invertebrates, reducing the amount of essential insect food available for chicks, which affects the chicks' survival rates.

The use of chemicals is much safer today due to:

- Improved legislation.
- Crop monitoring - ensuring the lowest dose is applied.
- Chemicals for specific applications rather than non-specific broad-spectrum chemicals.
- Applications of technology - accurate calibration and selection of droplet size to minimise spray drift.
- Record keeping - enabling traceability and accountability.

**Abandonment of traditional farming practices:** the abandonment of some traditional farming practices such as mixed farming has led to intensification, affecting the availability of habitat types on arable farmland.

**Mechanisation of arable farming:** Bigger machinery has, on occasions, led to larger field sizes with the loss of field boundaries and associated habitat losses.

**The increase in the speed of agricultural operations:** Fields are often harvested and ploughed immediately afterwards, destroying and burying the plant and seeds.

**Changing retail patterns:** Globalised trading and increase in large centrally run shopping outlets has led to the reduction in locally sourced food and more intensive, less wildlife-friendly production.

**Loss of farm labour:** Traditionally winter labour forces would conduct tasks such as hedgelaying or walling to create habitats associated with arable farmland.

**Improved plant breeding and an improved understanding of arable crop chemistry:** A highly vigorous crop can be as effective as a herbicide in reducing numbers of non-crop plants. The introduction of genetically modified crops may have far-reaching consequences for agriculture and arable biodiversity in the 21st century.

**Shift from spring to autumn sown cereals:** Spring barley provides a particularly good habitat for many farmland birds, such as the lapwing and skylark. However, winter barley varieties - developed in the 1960s - and winter wheat have largely displaced this crop, leading to the loss of winter stubble and thus the breeding ground for these birds.

**Landscape character:** The character of the landscape (especially in the AONB) could be seriously affected by, for example, conversion of arable land to woodland.

## PRIORITIES FOR ACTION

### What needs to be done?

Arable farmland biodiversity has until recently been underestimated and we are only just beginning to understand its importance. We need to determine exactly what we have in Swindon Borough, to protect and value what is already known and to increase the amount of appropriate arable farmland that hosts biodiversity.

Key actions will be:

- To survey arable farmland for important biodiversity
- To secure management agreements that protect arable biodiversity, and
- To encourage the uptake of agri-environment grant schemes that seek to encourage biodiversity.

## WHERE CAN I FIND EXAMPLES OF THIS HABITAT?

- Many arable farms are in private ownership and visitors should respect this, obey the countryside code and keep to footpaths. Look out for farm open days.
- One place to view arable landscapes is from the Ridgeway Path. This passes through the North Wessex Downs Area of Outstanding Natural Beauty.

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## 3.2 Hedgerow Habitat Action Plan

### VISION

**A greatly expanded, interconnected network of hedgerows of varying types, from tall, wild hedges to dense, laid hedges, and hedges with trees. Where margins protect hedges from roads or ploughed fields, and where hedges are valued and managed to protect their value to wildlife as well as the landscape.**

### KEY FACTS

#### What do we have?

Since 1945 estimates of hedgerow loss in the UK vary dramatically, from 2,400km per year (MAFF, 1970) to 224,000km per year (Friends of the Earth [FOE] 1980). Whatever the true figure, it is clear that there has been a dramatic reduction in the total amount of hedgerow since 1945. The Countryside Survey 2000 estimates that between 1990 and 1998 hedgerow loss has stabilised. However, there has been a 21% loss of remnant hedgerows reverting to lines of trees. Estimated figures (before the introduction of the Hedgerow Regulations [1997]) put the loss of hedgerows nationally at 5% per annum, with 21% of English hedges lost between 1984 and 1990. There is very little information available from Swindon on the rate or extent of hedgerow losses. However, since the Hedgerow Regulations came into force, the figure for loss of hedgerows will have decreased dramatically.

In Swindon Borough, as part of the Thames and Avon Vale Natural Area, hedgerows are a strong characteristic of the landscape, particularly in pastoral areas, and a significant nature conservation feature. Many hedges are well stocked with trees, particularly crack willow, often pollarded. In Swindon Borough, hedges have been surveyed in the urban fringe, on urban open spaces and also in major proposed development sites where the environmental

assessment has included hedgerow survey. This leaves a significant proportion of the land area, mainly in the northern and southern extremes of the Borough, unsurveyed. The East Swindon Assessment concluded that one third of the hedgerows in the development area would qualify as “important hedgerows” under the Hedgerow Regulations. For the southern sector, 60% of hedgerows are classed as important and, of those, 20% are ecologically important. Many more are said to predate Enclosure Act of 1845 and are thus historically important.

Due to our current lack of data on hedgerows in Swindon, all hedgerows consisting of native species are included in this plan. This will avoid important categories or types of hedgerow, such as historic, cultural or significant landscape hedges, being left out of the plan because of a lack of understanding or data.

#### Why is this habitat important?

Traditionally, there were almost as many types of hedgerow as there are types of landscape. Hedgerows fulfill a variety of functions that benefit biological diversity. Hedges act as wildlife corridors linking isolated habitats. They also provide cover, feeding and breeding sites for many priority species. Features associated with hedgerows, such as wet ditches, banks or hedgerow trees, are often important themselves in terms of biodiversity. When these features are combined with hedgerows, they can form a particularly rich and diverse habitat. Some hedgerows are woodland relics and can contain assemblages of woodland plants - such as bluebells. Even relatively species-poor hedges, planted as part of the Enclosure Acts 1720 and 1845, can become very species rich where they are associated with features such as a ditch, bank or old pollard. Ancient hedgerows are usually the most biologically diverse, typically with over 600 species of plants, 1,500 insects, 65 species of bird and 20 species of mammals (UK BAP).

### How is this habitat protected?

Hedgerows are protected under the Hedgerow Regulations (1997). These make it illegal to remove "important" hedgerows without permission. "Important" hedges are defined as being species-rich, being used by protected species, or including historic features such as parish boundaries. A species-rich hedgerow is defined as one that contains five or more native woody species in an average 30m length. Hedges which contain fewer woody species, but a rich basal flora of herbaceous plants, are also considered as species-rich. Ancient hedges date from before the parliamentary Enclosure Acts.

Under the regulations, land managers are required to submit a hedgerow removal notice to their local planning authority (LPA). The LPA then has a period of 42 days in which to determine whether a hedgerow is deemed "important" under the regulations, and therefore whether or not it may be removed.

These regulations are far from ideal and are to be revised. Highway Improvement removals are an exception to this and these are carried out under highways legislation, which overrides the hedgerow regulations.

Tree Preservation Orders can protect hedgerow trees where they provide significant public amenity. Conservation Areas also afford some protection to hedgerow trees through the planning system.

Under the Food and Environment Protection Act (1985), it is illegal to spray pesticides into hedge bases, unless there is a specific label recommendation or a specific off-label approval. The Wildlife and Countryside Act (1981) protects a number of species which inhabit hedges, including nesting birds, from disturbance.

## OPPORTUNITIES AND THREATS

### Opportunities

**Agri-environment schemes:** Agri-environment schemes can provide farmers and landowners with funding to manage their hedges by methods such as laying, coppicing and gapping up. Payment for timely rotational cutting is also available. The establishment of grass margins as part of agri-environment schemes will buffer hedgerows and extend the valuable habitat.

Development mitigation schemes provide opportunities for hedgerow management and new planting.

### Threats

The quality and number of hedgerows in the UK has been in steady decline for the last 50 years. Although the rate of hedgerow loss may have slowed slightly in this time, loss remains a major threat to the habitat. It is often a combination of factors that leads to hedgerow loss. Some of the least obvious causes of hedgerow degradation and loss are arguably the biggest threat to hedgerows today: a combination of inappropriate management and neglect.

**Inappropriate management:** Frequent cutting prevents hedges from producing fruits and berries that are a food source for many species in the winter. Timing of cutting can also affect the quality of the hedge and the associated wildlife. The type of cutting may also damage hedges. "A"-shaped cutting, carried out at the end of winter every two years in five, however, can produce a very good example of species-rich hedgerow managed using mechanical methods. Hedges within developments can often be vulnerable to works carried out adjacent to them.

**Neglect:** In order to survive intact, hedgerows have to be managed. Due to a variety of causes such as increased labour costs and the loss of traditional skills, many hedges have fallen into neglect. If hedges are left unmanaged, over time they become gappy, potentially ending up as a line of trees rather than a hedge.

**Removal:** Although the rate of hedgerow loss may have slowed over the last 50 years, it is still a threat. Changes in farming methods, driven by the economy, have led to the use of bigger and more cost effective machinery. It has therefore not been economically viable to retain many of the hedgerows that would traditionally have been found on arable farms. Fences are also cheaper to manage than hedges. Furthermore, road development and highway improvement have also contributed to the continued loss of hedgerows.

**Development:** The continued urban expansion of Swindon is a continuing threat to hedgerows. Another ongoing threat is the increasing pressure for road building associated with development and highway improvements.

**Lack of protection:** There is little, if any, protection provided within the Hedgerow Regulations for the majority of farmland hedges that are not considered ancient or species-rich. Hedgerows also lose their protection after outline planning permission has been granted, unless protected by a planning condition. The Hedgerow Regulations need to be reviewed, as they clearly do not provide adequate protection.

**Loss of hedgerow trees:** Hedgerow trees, especially elm, once formed a significant feature of Swindon's hedgerows. Regeneration of hedgerow trees is slow and new hedgerow tree planting or singling is rare. The lack of need for pollard products will have diminished the need to maintain these feature trees, which were often associated with boundaries. Their retention should be encouraged, to provide nest holes and food for birds.

**Inappropriate farming practices:** Browsing by stock, especially at high stocking rates, can damage hedgerows. This often causes land managers to erect fences to secure the fields, which then leads to further neglect of the hedgerow. EU regulations for the payment of grants for arable farmland now affect hedgerows. Ploughing can also cause damage. The roots of both shrubs and hedgerow trees are easily damaged by ploughing, as the need for larger

fields reduces the size of the grass margins often associated with the base of hedgerows.

The application of pesticides, herbicides, and fertilisers has detrimental effects on hedgerows. Applying pesticides too close to the hedgerow, or if using them in windy conditions, causes spray drift onto the hedge, killing many of the insects which are often beneficial to crop pest management and form an important food source for other hedgerow species. Herbicides and fertilizers effectively kill off many of the important hedgerow base plants and promote the growth of more vigorous species.

## PRIORITIES FOR ACTION

### What needs to be done?

Hedgerows are an extremely important habitat within the Borough. We need to determine exactly what exists in Swindon Borough, through extensive surveying, to protect and value what is already known and to increase the length of hedgerow that is managed sympathetically for biodiversity.

Key actions will be to:

- Survey hedgerows for important biodiversity and map them
- Secure management agreements that protect hedgerow biodiversity, and
- Encourage the uptake of agri environment grant schemes that seek to encourage sympathetic management.

## WHERE CAN I FIND EXAMPLES OF THIS HABITAT?

- Examples of this habitat can be found throughout Swindon Borough.

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