

# Arable Action Plan

## Habitat Definition

Arable areas are defined as the total area of crops (including perennial, woody crops and intensively managed orchards), grassland under five years old, freshly ploughed land, rotational set-aside and fallow. This includes the UK priority habitat of cereal field margins. These are strips of land lying between cereal crops and the field boundary, or extending for a limited distance into the crop, which are either deliberately managed to create conditions which benefit key farmland species or are left as unmanaged strips.

## Current Status

In Scotland, tilled land represents 28% of the total land area (in the UK as a whole, the figure is 41%). Land classified as crops, grass under 5 years, set-aside and fallow amounts to approximately 816,000 hectares of Scotland (June 2000 Agricultural Census, SEERAD).

Approximately 15% of the Falkirk area is under arable, equating to 4198 hectares of land. The majority of this lies on the flat, fertile carse-land in the northeast and east and within the lower Avon valley. Arable cropping within the area is predominantly barley (cultivars of) and wheat.

Due to the lack of information, it is presently very difficult to accurately assess the extent or biodiversity status of arable areas and cereal field margins within the Falkirk Council area. However, it is likely that few farmers currently manage arable areas or cereal field margins to benefit wildlife. Most field margins are narrow, species-poor grass strips.

There is therefore potential to significantly improve the biodiversity potential of arable areas and cereal field margins within the Falkirk Council area.

## HABITAT PROFILE



Falkirk Museums

### Status:

Arable: UK broad habitat  
Cereal field margins: UK priority habitat

### Protection:

Field margins can be protected for a set period by their inclusion in agri-environment schemes. Some pesticides are precluded from use on the outermost 6 metres of crops

### Key Sites:

The low-lying carse-land in the northeast and east and the lower Avon valley are the main arable areas within the Falkirk Council Area

### Associated Habitat and Species Action Plans

#### Habitats:

Boundary features, rivers and streams

#### Species:

Brown hare *Lepus europaeus*  
Barn owl *Tyto alba*  
Black grouse *Tetrao tetrix*  
Grey partridge *Perdix perdix*  
Kestrel *Falco tinnunculus*  
Lapwing *Vanellus vanellus*  
Linnet *Carduelis cannabina*  
Reed bunting *Acrocephalus scirpaceus*  
Skylark *Alauda arvensis*  
Song thrush *Turdus philomelos*  
Swallow *Hirundo rustica*  
Tree sparrow *Passer montanus*  
Twite *Carduelis flavirostris*  
Yellowhammer *Emberiza citrinell*  
Field scabious *Knautia arvensis*  
Ox-eye daisy *Chrysanthemum leucanthemum*  
Purple ramping-fumitory *Fumaria purpurea*

## Ecology

### Arable Fields

Arable fields are a critical habitat for a number of key farmland species. However, the timing of cultivation and sowing has direct effects on biodiversity. Spring sowing provides soil invertebrates for many birds at a key time of year and creates ideal conditions for ground-nesting birds such as lapwing and skylark. Where stubbles are left over winter, spilt grain, weed seeds and insects provide food for many bird species. This also allows some rarer autumn germinating wild plants to survive. Wild plants in arable fields are important as food and cover for many invertebrate species and provide a constant source of nectar and pollen for crop pollinators such as bumblebees and butterflies.

### Set-aside

Set-aside provides the opportunity to manage whole fields or parts of fields for the benefit of biodiversity. Siting strips of set-aside alongside existing habitats or features such as woodland, watercourses, hedges, conservation headlands or other field boundary features increases their value to small mammals, barn owl, grey partridge and yellowhammer. However, species such as corn bunting, lapwing and skylark prefer large blocks in open farmland.

Rotational set-aside can be an effective break to cropping and provide winter feeding and spring breeding opportunities. On non-rotational set-aside, semi-permanent grass cover can be established, either through natural regeneration or by sowing a mixture of grasses. The provision of wild bird cover using a mixture of seed-producing and cover crops, even in very small patches, provides excellent food and shelter for over-wintering birds in particular.

### Cereal Field Margins

There are six main forms of cereal field margins:

1. A 6m wide wildlife strip which is cultivated annually but not cropped.
2. A conservation headland: 6 or 12m wide outer margin of crop separated from an adjacent field boundary or other vegetation by a 1m sterile strip and managed with reduced inputs of pesticides and/or fertilisers.
3. A combined wildlife strip and conservation headland, separated by a sterile strip.
4. Game crop, stubble, set-aside or grassland fallows lying between annually cropped land and the field boundary.
5. Beetle banks and grass margins: 1.5 to 6 metre wide unfertilised strips around or across fields, where grazing is managed to ensure that vegetation remains at a minimum height of 100 millimetres.
6. Unmanaged, often unploughed strips close to a field boundary feature such as a fence, dyke or hedge line.

Field margins provide nesting and feeding sites for a range of farmland birds. They can also support vast numbers of invertebrates, which are food for birds and other animals. Most invertebrates do no harm to crops: indeed, beetles, hoverflies, ladybirds and spiders benefit the crop by preying on pests such as aphids. Small mammals also inhabit field margins and attract predators such as stoat, weasel, barn owl and kestrel. In addition cereal field margins provide a valuable wildlife corridor which enables a variety of species which are unwilling or unable to cross open, cultivated fields to move around arable farms. Grass margins can also act as important buffer zones minimising the risk of sediment and artificial fertilisers and pesticides reaching watercourses. Through simple management measures, farmers can increase the biodiversity value of field margins without affecting the cropped area.

### Current Factors Affecting the Habitat

- National and European policies
 

Policies such as the Common Agricultural Policy have played a significant role in steering agriculture towards increased production, at the cost of farmland habitats and species.
- Timing of cultivation
 

A shift from spring sown crops to winter sown crops has resulted in the loss of suitable nest sites for ground-nesting birds, the loss of winter feeding in stubbles and the reduction in cereals undersown with grass or cover crops. Undersown crops are important for over-wintering sawflies which in turn feed the young of many species of birds.
- Specialisation
 

Specialisation has resulted in a reduction of mixed farming, which creates a variety of arable and grassland habitats and thereby benefits a wider range of species.
- The inappropriate use of agro-chemicals
 

Herbicides reduce the amount of broad-leaved plants in field margins, set-aside and over-winter stubbles. These plants form the basis of the food chain, supporting invertebrates, birds and mammals. Insecticides further reduce invertebrate numbers. Fertilisers spread into field margins allow aggressive species to out-compete finer grasses and wildflowers.
- Mechanisation
 

Mechanisation has resulted in less sensitive management of field boundary habitats, including cereal field margins, many of which have been removed as field sizes have increased.
- Cleaner harvesting
 

This has resulted in less spilt grain which provided a food source for birds. Many farms also used to have a thrashing area where chaff and weed seeds would be discarded.
- Farm incomes and incentives
 

As farm incomes have come under increasing pressure, farmers are less inclined to invest in positive habitat management. Limited financial incentives are a considerable constraint in encouraging more farmers to farm with biodiversity in mind.

### Current Action and Opportunities

Many farmers within the Falkirk Council area, including those in arable areas, are actively involved in the conservation of biodiversity on their farms.

Further management opportunities exist under agri-environment schemes like the Rural Stewardship Scheme (RSS), which is designed to encourage farmers and landowners to adopt environmentally friendly practices and to maintain and enhance particular habitats and landscape features.

In addition the Organic Aid Scheme encourages farmers to convert from conventional to organic farming methods, with potential benefits to biodiversity.

Set-aside provides opportunities to manage whole fields or areas within fields for wildlife.

Some pesticides are precluded from use on the outermost 5 metres of crops. This is designed to protect non-cropped habitats, in particular to prevent spray drift into watercourses. It is also illegal to spray pesticides into hedge bases unless there is specific approval to do so.

Scottish Natural Heritage's TIBRE project (Targeted Inputs for a Better Rural Environment) aims to encourage the adoption of modern technological techniques to reduce the environmental impacts of agricultural operations and reduce costs. Similarly, Linking Environment And Farming (LEAF) promotes Integrated Farm Management (IFM), a whole-farm strategy which integrates beneficial natural processes into modern farming practices using advanced technology and which aims to enhance biodiversity and profit.

Various organisations exist to provide advice to farmers on how environmental measures may be implemented on their farms without reducing the viability of the farm as a business. These include FWAG, LEAF, RSPB, SNH, SAC and GCT.

## Objectives and Targets

### Objective 1

***Encourage the retention or introduction of spring cropping and over-wintering stubbles in the Falkirk Council area.***

#### Target 1.1

- By 2003, identify the current extent of spring cropping and over-wintering stubbles.

#### Target 1.2

- By 2004, organise an event for farmers and partner organisations at a key arable site to promote best practice and demonstrate conservation measures.

### Objective 2

***Within the Falkirk Council area, increase the area of arable land under wild bird cover, extensive cropping and unharvested crops.***

#### Target 2.1

- By 2006, ensure that at least 5 hectares of wild bird cover, extensive cropping or unharvested crops are established annually.

### Objective 3

***Maintain and enhance the quality and extent of cereal field margins in the Falkirk Council area to contribute to the UK cereal field margin HAP target of 15,000 hectares by 2010.***

#### Target 3.1

- By 2004, identify the extent and status of cereal field margins.

#### Target 3.2

- Ensure no net loss of cereal field margins. (Ongoing).

#### Target 3.3

- By 2011, establish at least 30 hectares of quality cereal field margins suitable for demonstration purposes.

Action	Potential Deliverers		Year to be completed or in place						Meets objective
	Lead	Partners	2002	2003	2004	2005	2006	2011	
<b>A. Policy and Legislation</b>									
1. Review the local effectiveness of the RSS and communicate these findings to SEERAD (on-going).	FGAG	SEERAD	✓	✓	✓	✓	✓	✓	1,2,3
<b>B. Site Safeguard and Management</b>									
1. Promote the positive management of arable areas and cereal field margins through conservation advice and agri-environment schemes. (On-going).	FWAG and SAC	GCT, LEAF RSPB and SNH	✓	✓	✓	✓	✓	✓	1,2,3
2. Establish at least 30 hectares of quality cereal field margins suitable for demonstration purposes (2011).	FWAG and SAC	Farmers, GCT, LEAF and RSPB						✓	3
<b>C. Advisory</b>									
1. Promote the use of TIBRE within the Falkirk Council Area. (On-going).	SNH	FWAG, GCT LEAF, RSPB and SAC	✓	✓	✓	✓	✓	✓	1,2,3
2. Promote the use of IFM within the Falkirk Council Area. (On going).	LEAF	FWAG, GCT RSPB and SAC	✓	✓	✓	✓	✓	✓	1,2,3
3. Ensure relevant advisory information is available and up to date. (On going).	SAC	FWAG, GCT LEAF, RSPB and SNH	✓	✓	✓	✓	✓	✓	1,2,3
4. Encourage targeted use of beetle banks, grass margins, conservation headlands, extensive cropping, unharvested crops and set-aside to achieve maximum conservation benefit. (On going).	FWAG and SAC	Farmers, GCT, LEAF RSPB and SNH	✓	✓	✓	✓	✓	✓	1,2,3
<b>D. Research and Monitoring</b>									
1. Identify the current extent of spring cropping and over-wintering stubbles (2003).	FGAG	SEERAD		✓					1
2. Identify arable and cereal field margin sites which can be used for demonstration purposes (2004).	FGAG	FWAG GCT, LEAF, RSPB, SAC and SNH			✓				1,3
<b>E. Communication and Publicity</b>									
1. Organise an event (with press coverage) for farmers and partner organisations at a key arable site to promote best practice and demonstrate conservation measures (2004).	FWAG	EARAG GCT			✓				3
2. Include this habitat in a local biodiversity awareness raising and education strategy to be developed by 2002 and implemented thereafter.	EARAG		✓	✓	✓	✓	✓	✓	1,2,3

Action	Potential Deliverers		Year to be completed or in place						Meets objective
	Lead	Partners	2002	2003	2004	2005	2006	2011	
<b>F. Plan Monitoring and Review</b>									
1. Monitor the implementation of actions in this plan annually.	FGAG	All partners	✓	✓	✓	✓	✓	✓	1,2,3
2. Monitor the completion and effectiveness of the actions in detail and review this plan every 5 years to ensure continued effectiveness, starting in 2006.	FGAG	All partners					✓	✓	1,2,3

### Abbreviations

EARAG	- Education and Awareness Raising Action Group	RSPB	- Royal Society for the Protection of Birds
FGAG	- Farmland and Grassland Action Group	SAC	- Scottish Agricultural College
FWAG	- Farming and Wildlife Advisory Group	SEERAD	- Scottish Executive Environment and Rural Affairs Department
GCT	- Game Conservancy Trust	SNH	- Scottish Natural Heritage
LEAF	- Linking Environment And Farming		

### Key contacts

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