

# Arable Field Margins (AFM)

## Habitat Action Plan

Doncaster Local Biodiversity Action Plan  
January 2007



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Doncaster Biodiversity Action Partnership  
Doncaster Council, Environmental Planning, 2nd Floor, Danum House,  
St Sepulchre Gate, Doncaster, DN1 1UB.

Telephone: 01302 862896  
Email: [bio.diversity@doncaster.gov.uk](mailto:bio.diversity@doncaster.gov.uk)

[www.doncaster.gov.uk/biodiversity](http://www.doncaster.gov.uk/biodiversity)



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**Doncaster**  
**Biodiversity**  
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## 1. Description

1.1 Arable Field Margins were once a common feature of agricultural landscapes, as traditional farming methods and machinery did not extend fully to the field edges and subsequently they were left to the benefit of farmland wildlife. However, arable farming has evolved rapidly, with technological advances that have dramatically changed farming methods, outputs and the landscape. The animals and plants that co-existed with traditional arable farming are now becoming very rare, with some specialist species thought to have been lost completely.

1.2 Arable Field Margins are the strips of land lying between the field boundary and the crop and to some extent extend into the crop. On those farms that are proactively farming in a way that is of benefit to wildlife, they are often deliberately managed to create favourable conditions for local farmland species. They are commonly known as grass margins, wildlife strips, or headlands. Crop margins, also known as conservation margins or conservation headlands, form the outer margin of the crop usually with a grass margin adjacent to it. Conservation headlands are headlands of cereal crops, which are cultivated as part of the field but where the careful use of sprays allows populations of broadleaved weeds and their associated fauna to develop.

1.3 Arable Field Margins provide a feeding habitat for several farmland birds, including the **grey partridge** (*Perdix perdix*) and a variety of passerines such as the **corn bunting** (*Miliaria calandra*). Dry bare ground in field margins is also good for the dust-bathing chicks of the grey partridge. Arable Field Margins are also particularly beneficial for invertebrates such as ground beetles, cover and feeding areas for **brown hare** (*Lepus capensis*) and other small mammals, with the latter drawing the hunting **barn owl** (*Tyto alba*).

1.4 Arable and specifically Cereal Field Margins are afforded high priority within the UK BAP<sup>1</sup> Nationally, 12 plant species associated with Arable Field Margins have been included in the list of flowering plants that are in greatest need of conservation action. The increased use of herbicides, fertilisers and introduction of more competitive crops from seed sources that are cleansed of all other species, has resulted in the group of plant species traditionally known as common arable ‘weeds’ becoming increasingly rare and some are even now thought to be on the brink of extinction. In the Doncaster Borough there are records, although some are rather historic, of a number of arable weeds that are now thought to be nationally rare, including a record of the very rare **corncockle** (*Agrostemma githago*), a few records of **cornflower** (*Centaurea cyanus*), one historic record of gold-of-pleasure (*Camelina sativa*) and also a record of **shepherd’s needle** (*Scandix pecten-veneris*). There are also a good number of records of fools’ parsley (*Aethusa cynapium*) in the Borough. Some species such as corncockle and cornflower are now often incorporated into ‘annual’ and ‘wildflower’ mixes, which presents difficulties in identifying and separating these introductions from the few long standing arable records for these species.

1.5 Other arable weeds recorded in the Borough include **corn marigold** (*Chrysanthemum segetum*), **broad-fruited corn salad** (*Valerianella rimosa*), **red hemp-nettle** (*Galeopsis angustifolia*) and hairy buttercup (*Ranunculus sardus*) in damper areas.

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<sup>1</sup> [www.ukbap.org.uk](http://www.ukbap.org.uk)

1.6 The principle forms of Arable Field Margin<sup>2</sup> are officially defined as:

- A 6m to 24m wide conservation headland in a cereal crop, which is actively managed to benefit wildlife.
- A 2m to 6m appropriately managed, naturally regenerated, or established grassy buffer strip.
- A 1ha field corner appropriately and actively managed to provide grassland flowers and scrub to benefit wildlife such as birds, reptiles, amphibians and invertebrates (arable land only – and 1ha for every 20ha to ensure good distribution).

## 2. National status

2.1 Arable land is the land used to produce crops, including temporary grassland leys less than 5 years old, and set-aside land. Cereal crop production is the dominant form of arable crop. In 2004, nationally 69%<sup>3</sup> of arable land was used to grow cereal crops, but other forms of crop production and temporary grassland are also very important, as they comprise of approximately 31% of the useable agricultural resource.

2.2 The UK BAP recognises the conservation value of Cereal Field Margins and sets out measures to protect and enhance this habitat resource. However, the further inclusion of all forms of Arable Field Margin within the national plan would benefit more wildlife, by bringing more areas into wildlife sensitive management and providing habitats for rare arable plants, insects and seed eating birds. Whilst other crop margins have not been extensively studied to measure the potential wildlife benefit, nationally if the 3,133,000 hectares of cereal fields were all managed with 6m field margins, over 213,000ha's of land would be brought into sensitive management. If the 1,403,000ha's of arable land not used for cereals had a 6m margin, a further 95,600ha's of land would be brought into sensitive management.

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<sup>2</sup> Defra – Countryside Stewardship Handbook - <http://www.defra.gov.uk/erdp/schemes/default.htm>

<sup>3</sup> Source: [www.ukagriculture.com](http://www.ukagriculture.com)

2.3 Natural England recognises the potential wildlife benefit presented by all forms of Arable Field Margin and offers incentives for both cereal and arable crop margins as part of the new Environmental Stewardship Scheme, which has replaced Defra's old Countryside Stewardship Scheme. It is anticipated that the majority of Arable Field Margins will be delivered under Entry Level Stewardship, and that some more targeted initiatives can be included in Higher Level Stewardship using some of the following options:

HE10 Floristically enhanced margins

HF12 Enhanced wild birdseed plots

HF14 Fertiliser-free conservation headlands

HF19 Fertiliser-free conservation headlands preceding enhanced set-aside.

2.4 The Single Farm Payment Scheme requires uncultivated margins of 2 metres width (from the hedge or drain boundary) on all fields within the landholding, and payment can be withheld if this is not enforced.

### 3. Local status

3.1 DMBC's 1997 land use survey of the Doncaster Borough identifies 17,731 hectares of field crops, 8,724 hectares of ploughed fields and 328 hectares of fallow fields. The survey estimates the current area of field margins at 116 hectares.

3.2 The following **Countryside Stewardship Scheme** Field Margin options are currently in force in Doncaster Borough (falling wholly or predominantly in the DMBC unitary area):

R3 - 6m arable margin

R4 - 2m arable margin

R7 - 2m arable margin,

R8 - 2m arable margin (beetle bank)

CH1 - Conservation headland

CH2 - Conservation headland with no fertiliser

#### **Field Margins in the Doncaster Borough under Countryside Stewardship:**

<b>Option</b>	<b>Ha's</b>
R3 (km)	92.109
R4 (km)	11.865
R7 (km)	15.005
R8 (km)	0.972
CH1 (ha)	67.250
CH2 (ha)	2.000
<b>Total</b>	<b>189.201</b>

3.3 The following **Environmental Stewardship Scheme** Field Margin options have been awarded in Doncaster Borough (falling wholly or predominantly in the DMBC unitary area):

EE1 - 2m buffer strip

EE2 - 4m buffer strip

EE3 - 6m buffer strip

EF9 - Conservation headland for cereal fields

EF10 - Conservation headland for cereal fields with no fertiliser/manure

### Field Margins in the Doncaster Borough under Environmental Stewardship:

Option	2A <sup>4</sup> Total area of option (based on agreement level data)	2B <sup>5</sup> Total area of option (based on parcel level data)
EE1 (ha)	14.57	5.72
EE2 (ha)	22.06	14.85
EE3 (ha)	29.76	27.82
EF9 (ha)	10.00	n/a
EF10 (ha)	8.86	n/a
EF11 (ha)	0.00	n/a
<b>Total (ha)</b>	<b>85.25</b>	<b>48.39</b>

<sup>4</sup> Option uptake statistics at an agreement level were provided by Genesis November 2005. Georeferencing of each agreement was done using the postcode of the agreement holder and only those points that fall within Doncaster UA were selected. Where holdings span the boundary, some of the statistical results may refer to land outside of this area. Source Defra

<sup>5</sup> Option uptake statistics at a parcel level were provided by Genesis November 2005 and georeferenced based on IACS parcels. Only IACS parcels within Doncaster UA were selected. Currently only "point" ELS options are available at parcel level - it is envisaged that in the near future we should have option uptake statistics for all ELS options at a parcel level. Source Defra

3.4 The borough-wide potential for the creation and enhancement of Field Margins is vast, either as arable wildflower banks or beetle / bug banks. If the average field size is 12 hectares<sup>6</sup> and if the identified field boundaries in the borough were sensitively managed with a 6m buffer, over 1800 hectares of field margins could be created. These targets for potential Arable Field Margin creation, will perhaps never be realistic, as agri-environment schemes are intended to conserve those margins with important assemblages of scarce plants or animals. The projected targets do help to highlight the extra potential wildlife gains that could be made if more margins were sensitively managed, whilst the actual figures illustrate just how few are currently included in a stewardship scheme.

#### **4. Legal status**

4.1 Arable field margins have no legal status. 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.

4.2 Under the current procedures for pesticide registration and review, some compounds have statutory label exemptions preventing their use on the outermost 6 metre wide strips of crops. These restrictions are designed to prevent over-spraying of watercourses and protect non-cropped habitats.

4.3 The Water Resources Act 1991 imposes regulation of spraying near watercourses and the control of invasive non-native species near watercourses.

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<sup>6</sup> Source: UKBAP – Cereal Field Margin Habitat action plan ([www.ukbap.org.uk](http://www.ukbap.org.uk))

## 5. Links to associated habitats & species

5.1 The Arable Field Margins Habitat Action Plan is linked to the following Habitat Action Plans:

- Ancient and Species Rich Hedgerows (ASH)
- Neutral and Wet Grassland (NWG)
- Limestone Grassland (LG)
- Lowland Heathland / Acid Grassland Mosaic (HAG)
- Lowland Heathy Oak Woodland (LHW)
- Limestone Woodland (LW)
- Wet Woodland (WW)
- Greenways (GW)
- Marshes and Swamps, Lakes and Ponds, Ditches and Drains (MLD)

5.2 **'A Species Audit of Doncaster Borough'** has been produced as part of the Doncaster Local Biodiversity Action Plan. Species highlighted in bold within the Habitat Action Plans are identified within Doncaster's Species Audit and are conservation priorities. The Audit identifies **63** species associated with Arable Field Margins.

## 6. Current factors causing loss or decline

6.1 The intensification of arable production and the use of herbicides, pesticides and fertilisers have led to a reduction in species diversity.

6.2 Ploughing closer to the base of the hedge boundary.

6.3 The shift from spring to winter cropping and the resulting loss in winter stubbles.

6.4 Reduced crop rotation of cereal crops with other land covers such as grass leys and fallow land.

6.5 Removal of field boundary hedges to make large arable fields.

6.6 Deliberate field margin management to keep them neat and tidy.

6.7 Shift from spring to winter crop planting.

## **7. Current local action**

### **Research & Monitoring**

7.1 Funding from the Big Lottery's Transforming Your Space initiative has enabled the further development of the Biological Records Centre at Doncaster Museum. The biological data collected as part of the project, particularly botanical information for local sites, species and habitats has enhanced the modern dataset. Historical biological information has also been transferred to the database.

### **Advisory**

7.2 The Farming and Wildlife Advisory Group provide an advisory service to farmers wishing to take advantage of the various Environmental Stewardship Schemes. FWAG occasionally arrange events such as workshops and demonstration days.

### **Communications & Publicity**

7.3 Linking Environment And Farming (LEAF) is a charitable body that is becoming very active in its promotion of Integrated Farm Management, which looks to meet the economic needs of farmers, whilst providing affordable and wholesome food that has been produced whilst conserving the countryside landscape and wildlife. LEAF has a network of volunteer demonstration farms to show farmers how to produce quality produce whilst working in harmony with the environment. Leaf also runs workshops throughout the country on current topics and new ideas in farming. In 2006 the workshops focused on the new Agricultural Waste Regulations.

### **Safeguarding & Management**

7.4 It has been noted that with the new Environmental Stewardship Scheme there is now a gradual shift back to spring planting in the Borough, which is resulting in a few more winter stubble fields being available to birds for winter feeding.

## 8. Objectives, targets & proposed actions

Please refer also to the **Generic Actions in the LBAP Introduction & Overview document**

Objective	Target	Ref	Action	Lead Partners	Costs	Category
1) To ensure the protection and maintenance of existing arable field margins.	Continuous.	1.1	<p>Prevent depletion of Arable Field Margins resulting from development and/ or the delivery of statutory functions by:</p> <p>1) Having regard to the protection and enhancement of habitats when considering the allocation of sites, in line with the approach set out in PPS9 and the priorities set out in the LBAP.</p> <p>2) Having regard to the assessment, retention and enhancement of habitat types when formulating and making Development Control Policies and decisions, in line with the approach set out in PPS9 and the priorities set out in the LBAP.</p>	DMBC, Natural England (NE), Internal Drainage Boards (IDBs)	Staff costs	Advisory/ Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
			<p>3) Providing advice to Development Control and Developers on appropriate types of survey i.e. ecological and/or hydrological, the interpretation of survey results and methods of incorporating habitat retention and enhancement into development proposals (for both designated sites and non-designated features of biodiversity value, as identified in the LBAP.</p> <p>4) Having regard to the priorities set out in the BAP in the interpretation of UDP/LDF policies (and any supporting SPGs/SPDs).</p> <p>5) Providing technical advice on the severity, implications and nature of suspected breaches in planning control (either conditions or unauthorised development).</p>			

Objective	Target	Ref	Action	Lead Partners	Costs	Category
			<p>6) Awarding appropriate site protection through designation, based upon routine environmental monitoring and assessment.</p> <p>7) Ensuring that all Partners and relevant landowners, service providers and operational contractors are informed of the existence and importance of Arable Field Margins.</p>			
	Continuous.	1.2	Continue to collect and maintain up-to-date, standardised, biological data using the Museum's Local Record Centre. Promote and initiate appropriate management, monitoring and the exchange of environmental data, to ensure the maximum level of site protection is awarded and habitat condition is maintained.	DMBC, NE, Doncaster Naturalists' Society (DNS), Yorkshire Wildlife Trust (YWT)	Staff costs and volunteer time. Other costs to be evaluated	Future Research & Monitoring

Objective	Target	Ref	Action	Lead Partners	Costs	Category
	By 2008.	1.3	Expand DMBC's Environmental Planning protected species protocol to include LBAP habitats and species.	DMBC	Staff costs	Advisory
	By 2008.	1.4	Identify with Natural England the extent of arable field margin management in the Doncaster area.	NE, Farming and Wildlife Advisory Group (FWAG), DMBC	Staff costs	Future Research & Monitoring
	Continuous.	1.5	Maintain regular liaison with Natural England to ensure up to date information on Environmental Stewardship in the Borough.	DMBC, NE	Staff costs	Future Research & Monitoring
	Continuous.	1.6	Monitor and safeguard (through agreement) the existing resource of arable field margins on council owned sites leased to farmers, to ensure that there is no net loss on each holding.	DMBC	Staff costs	Future Research & Monitoring/ Safeguarding & Management

Objective	Target	Ref	Action	Lead Partners	Costs	Category
2) To restore degraded arable field margins and ensure the appropriate management of any existing sites.	Continuous.	2.1	Promote existing literature on arable field margin management for wildlife.	DMBC, NE, YWT, DNS	Staff costs & volunteer time	Communications & Publicity/ Advisory
3) To create or increase the arable field margin resource by 20%, particularly where the margins can be linked into existing sites of biodiversity value.	Increase in arable field margins on council owned land by 20% by 2010.	3.1	Promote the importance of conservation margins through example and good practice.	DMBC	Staff costs & volunteer time	Safeguarding & Management
	New 24 m field margins on 2 new sites by 2009.	3.2	Actively encourage 24 metre field margins on very large (agri-farmed) fields.	FWAG, NE, DMBC	Staff costs & volunteer time	Safeguarding & Management
	Target as at 3.1.	3.3	Focus on areas of high biodiversity value to increase the <b>network</b> of existing field margins.	DMBC, FWAG	Staff costs & volunteer time	Safeguarding & Management
4) Raise public awareness of the importance and	Continuous.	4.1	Increase public awareness of the habitat value of arable field margins.	DMBC	£1500	Advisory/ Communications & Publicity

<b>Objective</b>	<b>Target</b>	<b>Ref</b>	<b>Action</b>	<b>Lead Partners</b>	<b>Costs</b>	<b>Category</b>
importance and special characteristics of arable field margins.	A new local demonstration farm in the Borough by 2010.	4.2	Support the work of FWAG by encouraging local demonstration farms.	YWT, DNS, RSPB, DMBC, NE, FWAG, Linking Environment And Farming (LEAF)	Staff costs & volunteer time	Communications & Publicity/ Advisory
	Continuous.	4.3	Influence the maintenance, improvement and restoration of arable field margins in the Borough by encouraging and promoting national schemes such as Environmental Stewardship.	YWT, DNS, RSPB, DMBC, NE,	Staff costs & volunteer time	Advisory
	Continuous.	4.4	Observe any changes in national research and encourage, promote and implement where appropriate.	YWT, DNS, RSPB, DMBC, NE, LEAF	Staff costs & volunteer time	Future Research & Monitoring

## **9. Indicative Habitat distribution & Opportunities map**

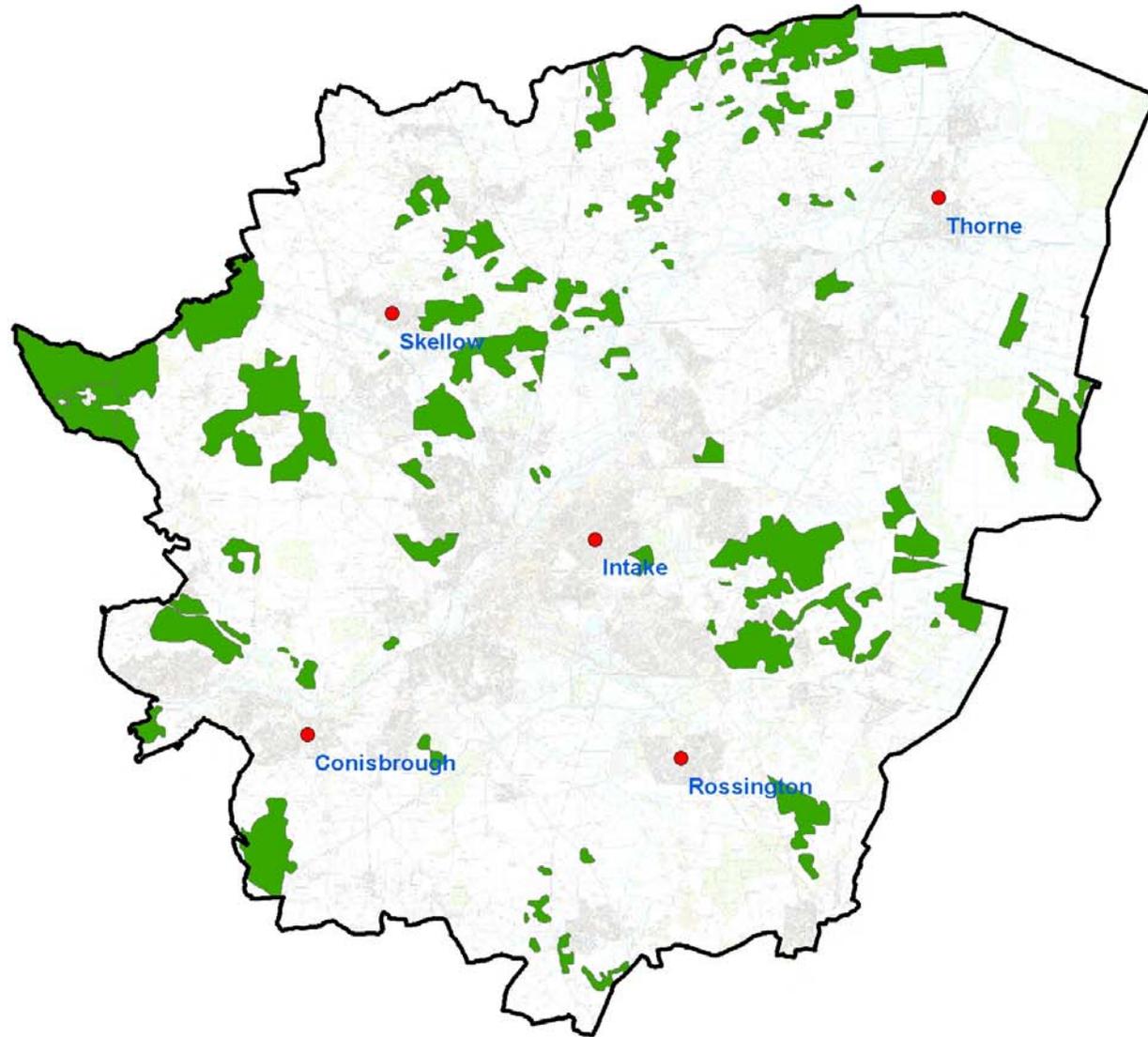
The map for Arable Field Margins shows the land within the Borough which was within the DEFRA Entry Level Stewardship and Countryside Stewardship Schemes in 2006. This therefore does not show how much area is covered by the margins themselves, but includes all types of margin identified in the HAP and does show the size of fields that comply with the scheme.

# Arable Field Margins

DATE: January 2007  
 SCALE: 1:160,000  
 DRAWING NO: HAP/1/AFM

**LEGEND**

-  Doncaster Borough Boundary
-  Village
-  Fields in DEFRA stewardship



Environmental Planning  
 Spatial Planning and Economic Development  
 Directorate of Development  
 2nd Floor  
 Danum House  
 St Sepulchre Gate  
 Doncaster  
 DN1 1UB

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