



# Farmland

## LOCAL HABITAT ACTION PLAN

### SUMMARY

The North East is the last stronghold of the mixed farming landscape in Scotland. The diversity of habitats provided by cropping and livestock production means that farmland wildlife is still relatively plentiful in most parts of the region. However, many of the same pressures that affect biodiversity on farmland further south also apply here, such as intensification of production and simplification of farming systems. At present many of the mechanisms to counteract declines in farmland wildlife operate at a national level, such as the Rural Stewardship Scheme. However, there is still scope at a local level to lobby for increased funding for such schemes and to ensure that they are implemented in an appropriate way for our local circumstances. There is also potential to continue to promote farmland biodiversity measures through existing local education and advisory networks, and to encourage the funding of projects for specific local priorities.

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## **1.0 CURRENT STATUS**

Agriculture is the primary land use over about 70% of North East Scotland, and about two-thirds of this is enclosed farmland. Nationally, there has been a gradual division into predominantly arable farming in the east, and grass-based livestock farming in the west. North East Scotland has seen some increase in the cropped area at the expense of grassland and a decline in cattle numbers, but farming here remains very mixed, with almost equal areas of improved grassland and crops. There is also a diversity of farming landscapes in the North East, ranging from the upland farms around the fringes of the Cairngorms, through the well-wooded lowland farmland to the west of Aberdeen to the exposed open farmland of Buchan and Formartine.

In recent years there has been some specialisation of farms into permanent grass or permanent cropping, rather than mixed rotations. In particular, cropping has declined in the upland areas and purely arable farming has increased in the lowlands. Barley has long been the most important crop. Oilseed rape and set-aside, unknown 25 years ago, are now important features of the countryside, while forage crops such as "neeps" (turnips) are much less common than in the past. In contrast to areas further south, only about 30% of crops are autumn sown, largely due to climatic constraints.

Management of crops is intensive over much of the area, with high inputs of fertilisers and pesticides. Field sizes are increasing and harvesting of crops is much more efficient than in the past. Grassland management is also intensive, with high fertiliser inputs and silage cutting typically taking place in early June and late July. Unimproved areas in farmland are uncommon in lowland areas, but more widespread on the upland fringes.

## **2.0 ECOLOGICAL DATA**

A wide range of animal and plant species are dependent to some extent on the variety of habitats created by farming (Tables 1 & 2). Agricultural activities can also have considerable influence on the biodiversity of other habitats, particularly watercourses.

Spring-sown cereal fields provide short vegetation suitable for nesting Lapwings and Skylarks, provided that their nests are not destroyed by cultivation. The winter stubbles that result from spring-sown crops can provide a valuable food supply of spilt grain and weed seeds for birds such as Grey Partridge, Linnet, Reed Bunting and Tree Sparrow. Forage crops such as neeps are even more valuable as they provide both food and shelter throughout the winter and are often richer in weed seeds due to lower herbicide inputs. Although autumn sown crops are unsuitable for many 'traditional' farmland birds, winter oilseed rape has provided new opportunities for birds such as the Sedge Warbler and Reed Bunting, more often associated with tall wetland vegetation.

The use of herbicides not only reduces the availability of weed seeds for over-wintering birds, but has also led to the probable local extinction of arable plants such as Cornflower and Purple-ramping Fumitory. The reduction in nectar-producing plants brought about by herbicide use also reduces the numbers of insects present in the crop in summer, as does insecticide use (although insecticides are less widely used than herbicides). This in turn affects wildlife dependent on insects for food, such as the Spotted Flycatcher, Grey Partridge chicks and Bats.

Grassland provides a semi-permanent habitat that benefits many invertebrates and small mammals, which in turn benefit predators such as the Kestrel and Barn Owl. Cattle grazed grass in particular is often rich in invertebrates, while wet grassland offers ideal nesting conditions for Lapwings, provided that the nests are not trampled by livestock. Wildlife that finds cover in silage and hay fields, such as Brown Hares, Grey Partridge and Curlew are not at risk of trampling by livestock, but rolling and early cutting is detrimental.

Unimproved grassland, wetlands, woodlands and boundary features such as hedges and dykes



are all valuable refuges of biodiversity in the farming environment, as the absence of cultivation and chemical inputs has often enabled a wide range of plant and animal species to survive. However, some priority farmland species such as Corn Bunting, Skylark and Lapwing prefer open landscapes, and woodland and hedges can be detrimental to these. Therefore, there is a need to consider priorities in an area and address the balance.

Watercourses are also valuable features for biodiversity in farmland. Although many of the species associated with watercourses, such as Freshwater Pearl Mussel and Salmon are not 'farmland' species, agricultural activities can have a significant impact on them, through drainage, pollution and sedimentation.

A mosaic of different arable, grass and unimproved habitats generally offers the greatest biodiversity benefit. The type of mixed landscapes and farming systems that still predominate in the North East provide such a mosaic, but as agricultural practices change they are gradually being lost.

### **3.0 CURRENT FACTORS AFFECTING THE HABITAT**

#### **3.1 Pesticides**

The reduced profitability of farming means that the use of herbicides, fungicides and insecticides is much more targeted than it was in the past. However, the aim of crop management is still a 'clean' crop, with minimal presence of weeds, pests and diseases. This reduces the availability of weed seeds and insects that form the basic food supply for much farmland wildlife.

#### **3.2 Fertilisers**

Responsible fertiliser use enables crop and grass yields to be maximised, but where they are spread into field margins and unimproved areas, they favour a small number of plant species such as docks, cleavers and chickweed, that can smother the semi-natural flora. Fertiliser run-off also has a major impact on the biodiversity of watercourses.

#### **3.3 Farm Specialisation**

The economic downturn in agriculture means that many smaller farms are simplifying their management. This tends to mean more grass-based livestock rearing in the upland fringes, and more arable farming without livestock in the lowland areas. Even where farms retain livestock and crops, there is an increasing tendency to concentrate the grass in one part of the farm and the crops in another. In all these situations there is less of a mosaic of habitats on the farm and subsequently less biodiversity potential.

#### **3.4 Grazing Management**

Overgrazing of semi-natural habitats such as moorland is a well-known problem nationally and the North East is no exception. On some farms cattle are out-wintered on the small surviving areas of semi-natural vegetation, such as unimproved grassland or woodland, in order to protect the improved fields. This practice causes direct trampling damage to the vegetation and nutrient enrichment, leading to invasion by undesirable species such as Nettles and Docks. In areas that are important for ground-nesting birds, heavy stocking rates in the early summer can lead to significant nest destruction.

On farms that have become completely arable, under-grazing of semi-natural habitats can be just as great a problem, with wetlands becoming overgrown with rushes and species-rich grass banks being replaced by rank, tussocky grassland.

#### **3.5 Field Operations**

Cultivation, sowing, rolling and grass-cutting are essential for maintaining farmland habitats, but with current financial pressures these have tended to become high-speed operations using large machinery and it is inevitable that ground-nesting birds are less likely to be noticed and avoided than was the case in the past. In the case of silage cutting, the practice of cutting towards the centre of the field traps young birds and hares and can lead to their destruction.



### **3.6 Forestry**

Tree planting has increased, particularly in the area covered by the Grampian Forest Challenge Fund. Sensitive designed woodland edges provide opportunities for key species such as Tree Sparrow, Spotted Flycatcher and Black Grouse. However, tree planting can be detrimental to the species of open farmland such as Corn Bunting, Skylark and Lapwing.

### **3.7 Invasive Alien Plants**

Japanese Knotweed and Giant Hogweed are spreading along a number of river catchments in the North East. Although not specifically an agricultural problem, they pose a threat to water margin and field boundary habitats, which are often important biodiversity refuges within farmed areas.

### **3.8 Predation**

The increase in forestry planting on farmland and the decline in gamekeeping has meant that predators such as crows have increased significantly in recent decades. However, predators are rarely the underlying cause of declines in biodiversity. Farmland wildlife that has declined for other reasons is likely to be more vulnerable to predation than in the past due to their smaller numbers. For example, the Lapwing is now rarely found nesting in the loose colonies that used to offer them protection from predators.

## **4.0 CURRENT ACTION**

The major influence on the way in which farming is carried out in North East Scotland is the European Common Agricultural Policy (CAP). Within the CAP the principal measures that have the potential to benefit biodiversity are Livestock Extensification, Set-aside, Organic Aid Scheme and the agri-environment schemes. The latter include the Habitats Scheme, Cairngorm Straths Environmentally Sensitive Area Scheme, Countryside Premium Scheme and Rural Stewardship Scheme, although only the Rural Stewardship Scheme (RSS) is open to new applicants. However, the biodiversity benefits of each of these schemes are dependent on how they are implemented and in the case of RSS, a limited budget means that the scheme is highly competitive. There have also been a number of smaller grant schemes, for works such as hedge planting and pond creation, but currently only one such scheme operates (Aberdeen Countryside Project) and is limited to the Aberdeen City area.

Advice and training on implementation of schemes and encouraging biodiversity in general is provided by a number of consultants. Most notably, FWAG and SAC employ specialist conservation advisers within the region. The RSPB is particularly active in providing scientific and technical back-up to these advisers, particularly regarding the conservation of farmland birds. The North East Farmland Biodiversity Working Group have promoted a number of small scale measures that farmers can take at little cost to their businesses, and a number of farmers have carried out considerable conservation work on their own initiative.

Food quality assurance schemes that incorporate biodiversity standards have been developed by supermarkets and other independent bodies, but have not yet attained a high profile. However, it is likely that this aspect of 'marketing' biodiversity may become more important in the future, although most action in this area will be required at a national level.

## **5.0 BENEFITS**

Implementation of this action plan will provide the following benefits:

- A reversal of the decline in farmland birds and other wildlife
- A diverse and attractive farming landscape
- Increased public support for the role of farmers
- Reduced conflict between food production and environmental stewardship
- Improved water quality



## **6.0 UK BIODIVERSITY OBJECTIVES AND PROPOSED TARGETS**

To date, there are no overall UK farmland biodiversity objectives and targets, but the North East Farmland Habitat Action Plan should take into account the objectives and targets from the UK Cereal field margins and Improved Grassland Habitat Action plans

The main objective from the UK Cereal Field Margins HAP is to maintain, improve and restore by management, the biodiversity of some 15,000 ha of cereal field margins on appropriate soil types in the UK by 2010.

The main objective from the UK Improved Grassland HAP is to enhance areas of improved grassland which are of importance for wildlife and restore semi-natural vegetation on sites where this would enhance their value for wildlife. Measures to be considered further include:

- Protect important sites, including areas of improved grassland, and enhance their potential for wildlife.
- Research methods for recreating semi-natural habitats on areas of improved grassland, and establish relevant habitat creation schemes.
- Target activities which would damage semi-natural habitats, including economic development, recreation, some forms of forest planting, to areas of improved grassland which have no potential for restoration to semi-natural habitat.
- Encourage environmentally sensitive farming methods..

## **7. OBJECTIVES AND PROPOSED TARGETS**

### **Principal Objective**

To conserve and enhance the biodiversity of farmland in the North East through appropriate farming practices, habitat management and habitat creation.

**Targets** – No net loss of existing wildlife habitat on farmland. Existing valuable areas of wildlife habitat on farmland identified, and management for biodiversity recommended by 2005. The need for higher political and financial support for the Rural Stewardship Scheme, and other mechanisms to benefit farm biodiversity, highlighted and maintained at the National level.

### **7.1 Advice**

**Objective 1:** Consistent biodiversity advice given to farmers from all agricultural consultants.

#### **Target:**

Provide detailed advisory materials to assist with biodiversity conservation on the farm and distribute to all agricultural consultants in the North East. Hold seminars/workshops with SEERAD, SAC and FWAG consultants to ensure that conservation action is effectively targeted towards local priorities.

#### **Time:**

By 2002



## 7.2 Education and Training

**Objective 2:** Raise awareness of farmland biodiversity among farmers, contractors, agricultural consultants and SEERAD staff.

**Target:**

Press releases on farmland biodiversity issues released, awareness raising events organised and training, including detailed technical guidance, provided for farmers, contractors, agricultural consultants and SEERAD staff.

**Time:**

By 2002

## 7.3 Research

**Objective 3:** Evaluate the status and distribution of UK and North East priority species and habitats through appropriate research.

**Targets:**

Up to date information on distribution of key/priority habitats and species available to farmers and farm conservation advisers, and used to direct specific species or habitat projects.

**Time:**

By 2005

## 7.4 Policy

**Objective 4:** Raise the political and financial priority given to the Rural Stewardship Scheme and other mechanisms to benefit biodiversity on the farm.

**Target:**

Political and financial priority for RSS and other mechanisms to benefit biodiversity have a higher profile, and Farmland HAP actions integrated into policy documents.

**Time:**

By 2005

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**Table 1: Species primarily dependent on farmland**

P = National Priority species, CC = Species of Conservation Concern, L = Local priority species

Species	Distribution in NE	Habitat preference	Threats
Grey Partridge <i>Perdix perdix</i> (P)	Widespread	Arable fields, grassland, hedgerows, winter stubbles	Herbicides, insecticides, loss of field margins and winter stubbles
Corncrake <i>Crex crex</i> (P)	Occasional summer visitor	Late cut hay meadows and tall vegetation	Early grass mowing
Skylark <i>Alauda arvensis</i> (P)	Widespread	Open farmland (arable, grass or rough grazing), winter stubbles	Autumn sowing, loss of winter stubbles, early grass cutting, herbicides
Tree Sparrow <i>Passer montanus</i> (P)	Lowland arable areas	Farmland with mature deciduous trees and hedges, winter stubbles	Herbicides, loss of winter stubbles and mature trees
Linnet <i>Carduelis cannabina</i> (P)	Widespread	Farmland with scrub or hedges, winter stubbles	Herbicides, loss of winter stubbles, scrub and hedgerows
Corn Bunting <i>Miliaria calandra</i> (P)	Lowland arable areas	Open farmland (arable and mixed), winter stubbles	Herbicides, tree and hedge planting, loss of winter stubbles and mixed farming
Reed Bunting <i>Emberiza schoeniclus</i> (P)	Widespread	Wetland / scrub mosaics, Oilseed rape fields, hedgerows, winter stubbles	Herbicides, loss of winter stubbles, wetland drainage
Quail Occasional summer visitor	Occasional summer visitor	Cereal and grass fields	Early harvesting
Lapwing <i>Vanellus vanellus</i> (CC)	Widespread	Open farmland with wet areas (arable, permanent pastures, rough grazing)	Autumn sowing, drainage, loss of mixed farming, tree planting
Redshank <i>Tringa totanus</i> (CC)	Widespread but scarce	Wet pasture	Wetland drainage
Barn Owl <i>Tyto alba</i> (CC)	Widespread but scarce	Rough grassland, field margins, woodland edges	Habitat loss
Twite <i>Carduelis flavirostris</i> (CC)	Upland and upland fringes	Breeds on moorland, winters on arable land	Herbicides, decline in upland cropping, loss of winter stubbles and turnips
Snipe <i>Gallinago gallinago</i> (L)	Widespread	Wet pasture and wetlands	Wetland drainage
Yellowhammer <i>Emberiza citrinella</i> (L)	Widespread	Farmland with scrub or hedges, winter stubbles	Herbicides, loss of winter stubbles, scrub and hedgerows
Kestrel <i>Falco tinnunculus</i> (L)	Widespread	Rough grassland, field margins	Habitat loss
Brown Hare <i>Lepus europaeus</i> (P)	Widespread	Arable fields, grassland	Early silage cutting, loss of field margin habitats
Cornflower <i>Centaurea cyanus</i> (P)	Moray (very scarce)	Arable fields	Arable fields
Purple ramping-fumitory <i>Fumaria purpurea</i> (P)	Moray (probably extinct)	Arable fields	Herbicides



**Table 2: Species partially dependent on farmland**

Species	Distribution	Agricultural Habitat preference	Threats
Black Grouse <i>Tetrao tetrix</i> (P)	Uplands, upland fringes	Rough grazing with scattered pine or birch / unimproved grassland and winter stubbles adjacent to Pine or birch woodland	Habitat loss, deer fencing, predation
Capercaillie <i>Tetrao urogallus</i> (P)	Deeside, Strathdon, Moray	Winter stubbles adjacent to Scots Pine woodland	Habitat loss, deer fencing, predation
Song Thrush <i>Turdus philomelos</i> (P)	Widespread	Hedgerows, woodland edges	Pesticides
Spotted Flycatcher <i>Muscicapa striata</i> (P)	Widespread summer visitor	Mature trees / woodland edges	Pesticides, loss of mature trees
Bullfinch <i>Pyrrhula pyrrhula</i> (P)	Widespread	Scrub, hedgerows, woodland edges	Herbicides, loss of hedges and scrub
Red Grouse <i>Lagopus lagopus</i> (CC)	Uplands	Winter stubbles adjacent to heather moorland	Habitat loss, disease
Golden Plover <i>Pluvialis apricaria</i> (CC)	Moorland in summer, coastal areas in winter	Winters on coastal pastures	Habitat loss
Curlew <i>Numenius arquata</i> (CC)	Widespread	Upland heath, rough grazings, grass fields, estuaries	Moorland management, early grass cutting
Snow Bunting <i>Plectrophenax nivalis</i> (CC)	Mountains in summer, coastal farmland in winter	Winter stubbles, particularly near the coast	Loss of winter stubbles
Pipistrelle Bat <i>Pipistrellus pipistrellus</i> (P)	Widespread	Field margins, hedgerows, watercourses, woodland edge.	Loss of roost sites and field boundary habitats
Water Vole <i>Arvicola terrestris</i> (P)	Widespread but scarce	River banks, ditches and wetlands	Predation, loss of bankside vegetation
Daubenton's Bat <i>Myotis daubentonii</i> (CC)	Main river valleys	Watercourses, ponds, woodlands, hedges	Field margin and watercourse management, loss of roost sites
Wych Elm <i>Ulmus glabra</i> (L)	Widespread	Field corners and boundaries, roadsides, river banks, around steadings and farmhouses	Lack of planting, grazing, Elm disease



Operational Objective	Outline Prescription	Objective	Personnel	Cost	Fund Source	Year	Priority
1. Raise general awareness of biodiversity among farming community and others	Write regular topical articles for the local farming press on biodiversity issues	2	LBAPFWG	£ 500 p.a. (in kind)		x 3 per year	M
	Incorporate biodiversity topics into farmer's discussion groups, farm walks and farming events	2	SAC, FWAG, NFUS, SLF	£ 5000 p.a.	SEERAD, SNH	Annual	H
	Incorporate biodiversity into agricultural teaching resources for schools	2	FWAG, RNCI, NFUS	In kind	RNCI, SHH	Annual	M
	Incorporate biodiversity into teaching and training for the agricultural community	2	SAC, FWAG	£ 10000 p.a	SEERAD	Annual	H
	Review and update list of priority species and habitats for RSS ranking in NE Scotland	1	LBAPFWG				Annual
2. Improve local targeting of RSS applications	Provide and update a guidance note on appropriate RSS management for the LBAP priority species	1	SAC, FWAG, RSPB	£ 1500	SEERAD, SNH	2002	H
	Provide up-to date guidance on distribution / status of habitats and species locally	1,3	RSPB, SNH, NESBReC	In kind		2003	M
	Circulate guidance note to all relevant advisers / consultants and SEERAD staff	1	LBCO	£ 100	SEERAD	2002	M
3. Improve implementation of RSS applications	Provide Biodiversity / RSS training for SEERAD staff, Agricultural Consultants and Farmers	2	SAC, FWAG, SNH, RSPB	£ 1500 p.a.	SEERAD, SNH, RSPB	Annual	H
	Encourage SEERAD to consider new options and changes to existing management options, where appropriate, particularly prior to reviews of the scheme.	4	LBAPFWG			As required	L
	Lobby MSP's for increased funding for Agri-environment measures and more equitable application ranking system	4	NFUS, SLF, RSPB			Until situation improves	H
	Provide guidance on unharvested crop mixtures targeted for specific species	1	RSPB, FWAG, SAC			2001	H
	Provide guidance on suitable seed mixtures for species-rich grassland creation and grass margins (link with action plans for species-rich grassland and field margins and boundary habitats)	1	SAC, FWAG	£ 500	SEERAD, SNH	2002	M



Operational Objective	Outline Prescription	Objective	Personnel	Cost	Fund Source	Year	Priority
	Circulate guidance to local agricultural consultants, seed merchants	1	LBCO	£ 100		2002	M
	Ensure continued training of SEERAD staff in RSS management requirements	2	SEERAD			Annual	H
4. Encourage management of set-aside for wildlife	Encourage farmers to incorporate small areas of Wild Bird Cover in their set-aside	1	SAC, FWAG, NFUS, SLF	? £ 200 per farm	? Seed companies	Annual	H
	Encourage farmers to delay cutting of grass set-aside as late as possible to protect nesting birds	1	SAC, FWAG, NFUS, SLF	*		Annual	H
	Promote RSPB leaflet on managing set-aside for birds	1	SAC, FWAG, NFUS, SLF, RSPB	*		Annual	M
5. Reduce pesticide and fertiliser dependence	Encourage use of targeted inputs based on pest, weed and disease thresholds, soil nutrient status and crop requirement (e.g. LEAF audit, SNH TIBRE initiative)	1	SAC, FWAG, SNH	*		Annual	H
	Provide and encourage training in skills required for targeted inputs (pest, weed and disease identification, fertiliser management)	2	SAC	£ 10000 per annum		Annual	M
	Incorporate conservation headlands and unharvested crops, as biodiversity refuges, into RSS applications on farms that have high pesticide inputs.	1	SAC, FWAG, AC	*		Annual	H
	Encourage and support organic conversion on appropriate farms	1	SAC	£ 8000 per annum	SEERAD	Annual	M
6. Retain some diversity of habitats, as typically found on North East farms	On farms or parts of farms under continual grass, encourage undersown cropping as a method of reseeding grass where appropriate	1	AC, SAC, FWAG	*		Annual	L
	On farms or parts of farms under continual cropping, encourage areas or strips of grass set-aside, grass margins or species-rich grassland creation (under RSS)	1	AC, SAC, FWAG	*		Annual	H
	Raise awareness of biodiversity value of unimproved habitats on the farm (e.g. wetland, grassland, scrub)	1	AC, SAC, FWAG	*		Annual	M



Operational Objective	Outline Prescription	Objective	Personnel	Cost	Fund Source	Year	Priority
7. Encourage better integration of farming and forestry for biodiversity benefit	Provide seminar / workshop for agricultural and forestry professionals to explore areas of potential conflict and co-operation	2	LBCO, AC, SAC, FWAG, SLF, NFUS, FC, RICS, RSPB, SNH	£ 5000		2003	M
	Ensure that a copy of this plan and other relevant LBAP literature is sent to forestry consultants and FC	1	LBCO	£ 100		2002	M
8. Highlight potential danger of field machinery operations for farmland wildlife	Provide a brief guidance card (e.g. for tractor cab) highlighting methods of reducing risk to wildlife	1	SAC, FWAG	£ 1500		2003	M
	Target agricultural contractors as well as farmers for biodiversity training events	2	SAC, FWAG			Annual	H
9. Specific Projects	Encourage a rolling program of small-scale or species-specific projects (e.g. nestboxes for Tree Sparrows, Lifeline for Corn Buntings)	3	Various	Variable	Various	Annual	H

\* Indicates actions that can be achieved at low cost as part of existing activities.

**AC** - Agricultural Consultants; **FC** - Forestry Commission; **FWAG** - Farmland and Wildlife Advisory Group; **LBAPFWG** - LBAP Farmland Working Group; **LBCO** - Local Biodiversity Co-ordinator; **NESBreC** - North East Scotland Biological Recording Centre; **NFUS** - NFU Scotland; **RICS** - Royal Institute of Chartered Surveyors; **RNCI** - Royal Northern Countryside Initiative; **RSPB** - Royal Society for the Protection of Birds; **SAC** - Scottish Agricultural College; **SEERAD** - Scottish Executive Environment and Rural Affairs Department; **SLF** - Scottish Landowners' Federation

**LEAF** - Linking Environment and Farming.  
**TIBRE** - Targetting for a Better Rural Environment.



NORTH EAST SCOTLAND  
BIODIVERSITY

