



# The **Ryedale** Biodiversity Action Plan



2007 – 2012

The Ryedale Biodiversity Action Plan (BAP) has been produced by Ryedale District Council on behalf of the Ryedale Biodiversity Steering Group. It is the product of the hard work and dedication of a great many people over a long period of time. Thanks go to everyone who has contributed to and commented on this document and to those who are involved with the implementation of the many actions identified within the Plan.

The Ryedale Biodiversity Steering Group comprises representatives from the following organisations:

- English Nature
- Environment Agency
- Forestry Commission
- Howardian Hills Area of Outstanding Natural Beauty
- North and East Yorkshire Ecological Data Centre
- North Yorkshire County Council
- Rural Development Service
- Ryedale District Council
- Small Farms Association



A wider Ryedale Biodiversity Partnership, made up of relevant groups and individuals, has also

been established to encourage participation in implementing the Ryedale BAP. For further details on this Partnership please contact the Countryside Officer at Ryedale District Council.

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# The **Ryedale** Biodiversity Action Plan

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## **Foreword**

### **Why bother about biodiversity?**

There are many good reasons to care about the variety of life on earth. Not least, that all living things are inter-linked and the loss of one is a loss to all. Neither can we overlook that the world depends on a mere handful of different types of plants to feed its massive population and future food sources as well as medicinal benefits may well lie out there, waiting to be utilised or discovered. Also, variety adds immensely to our quality of life; the moors without merlins, farmland without skylarks, rivers without otters or our towns and villages without swifts, martins and swallows would be a gloomy thought indeed.

For some thirty years, I have worked with farmers, naturalists, councils and government on countryside issues and I know from first hand experience that maintaining and increasing the variety of wildlife habitats and their plants and animals is not a straightforward task. Knowing what to do, and how it might fit in to the bigger picture can itself be a major obstacle to taking effective action. Someone needed to set out the ground rules. The Ryedale Biodiversity Action Plan does exactly that. It is a vital tool in the quest to protect the environment which underpins the economic vitality of our countryside. In the face of the continuing pressures of modern society on wildlife, coupled with the challenges wrought by erratic weather and climate change, its publication could not be timelier. I sincerely hope we will all take notice, support its aims and make the most of the lead it is giving us.

**Ian Carstairs MBE**

TRUSTEE, CARSTAIRS COUNTRYSIDE TRUST

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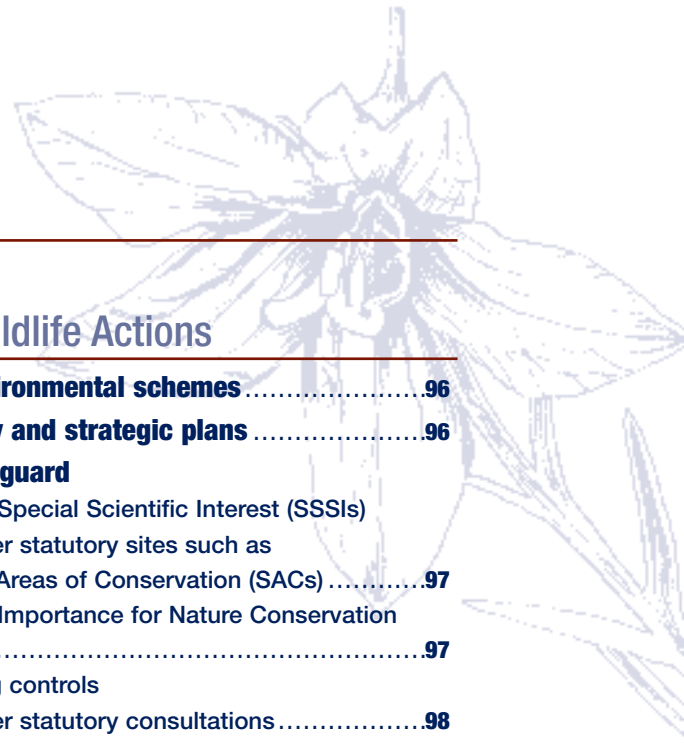
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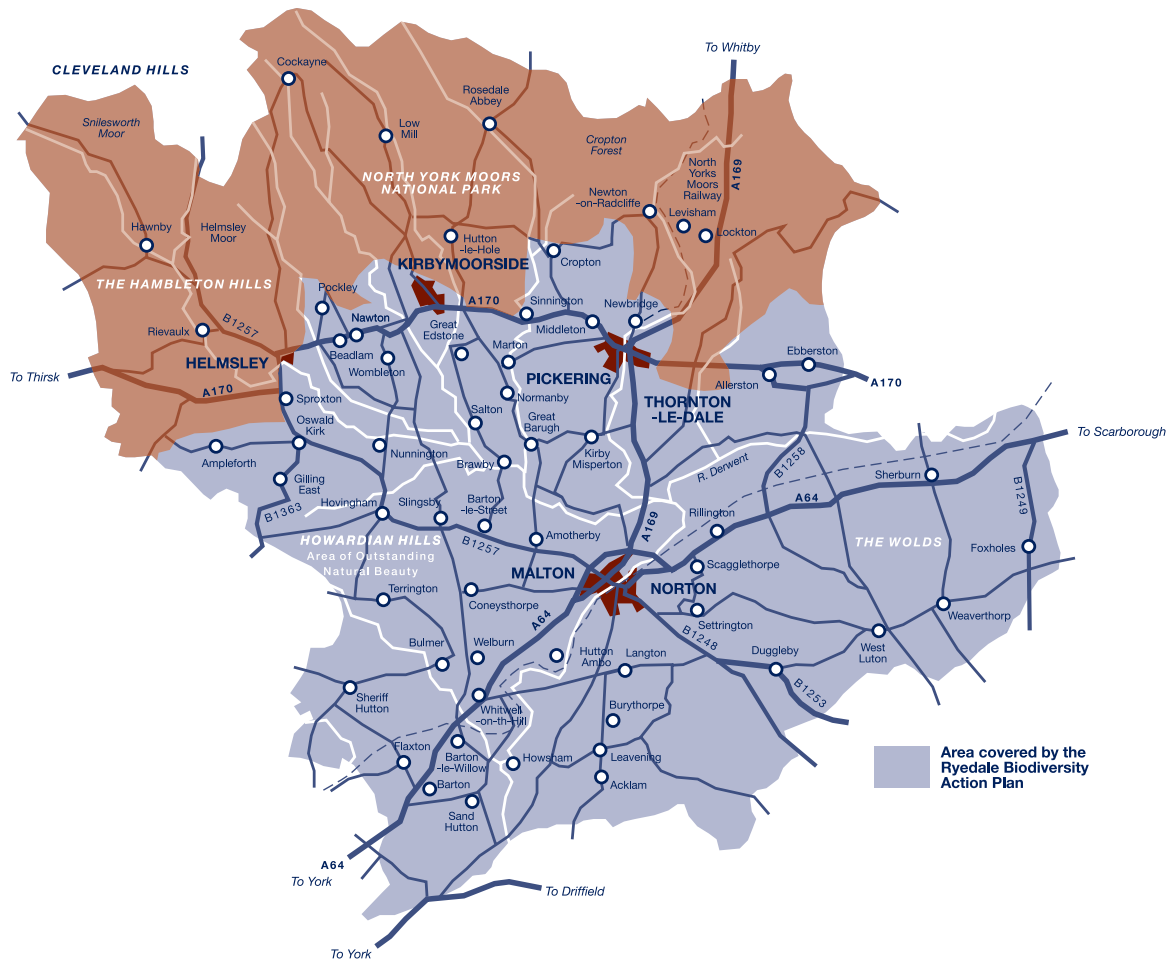
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# Summary

The Ryedale Biodiversity Action Plan has been produced by Ryedale District Council on behalf of the Ryedale Biodiversity Steering Group. It aims to ensure that future generations can enjoy the same rich variety of wildlife as is enjoyed today. The Biodiversity Action Plan describes the wildlife resource of the area, identifies those species and habitats which have particular significance in Ryedale and outlines the objectives, targets and actions considered necessary to protect and enhance the wildlife of the Ryedale area over the next 5 years – until January 2012.

The Plan covers the district of Ryedale outside the North York Moors National Park and includes part of the Howardian Hills Area of Outstanding Natural Beauty and the Yorkshire Wolds.

It has been written in response to the United Kingdom Biodiversity Action Plan, which in turn was written following the Earth Summit in Rio de Janeiro in 1992 where the Convention of Biodiversity was signed by over 150 world governments.

The Plan is divided into four main sections: an introduction; details on the 13 Habitat Action Plans which are of particular significance in Ryedale; details on the 19 Species Action Plans and 9 Species Statements which are of particular significance in Ryedale; and general actions on how the work is to be implemented and monitored.

# Introduction

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## What is biodiversity?

“Biodiversity is all living things, from the tiny garden ant to the giant redwood tree. You will find biodiversity everywhere, in window boxes and wild woods, roadsides and rainforest, snow fields and shore”. (The UK Biodiversity Steering Group Report 1995).

Biodiversity is short for biological diversity and it includes the whole variety of life on earth. The term came to wider attention at the Rio Earth Summit in 1992, where 159 world governments recognised the importance and the decline of global biodiversity and signed up to a programme of biodiversity conservation. This was the first time that there had been international agreement on the need for action to prevent the loss of species, habitats and genetic variety.

Biodiversity is important as it provides so many of the essentials of our lives. Biodiversity:

- Gives us oxygen, food, water, clothing and medicines.
- Supports local economies.
- Is a key test of sustainability. If biodiversity disappears we are not making sustainable decisions, which is essential if we are to pass on to the next generation an environment at least as rich as the one we inherited.
- Provides local distinctiveness and gives character to an area.
- Contributes to our spiritual and personal fulfilment.
- Is of high cultural significance. There are strong traditional links between people and the environment reflected in art, literature, music, religion, folklore, features on buildings and the names of pubs, streets and towns. The shape of the landscape and natural features has strongly influenced settlement patterns and the past management of natural resources has shaped the present day countryside.

For example in Ryedale:

- As the role of farming changes in response to national and European policy there is likely to be a continuing shift away from food production to ‘environmental goods’. Those farms which support biodiversity will be able to gain monetary support to help protect and manage key species and habitats.
- The rich variety of wildlife and special character of the Ryedale countryside helps attract and retain tourists (according to the latest figures tourism in Ryedale is worth an estimated £130 million). YORKSHIRE TOURIST BOARD (2003)
- Most of the district’s rivers and streams have good/excellent water quality which supports not only threatened species such as otter and freshwater crayfish but also water-cress growing and local fisheries.

Ryedale’s biodiversity is therefore a tremendous asset and one which helps give the area a distinctive character, supports farming, forestry, tourism and other economic enterprises and provides a wonderful environment to enjoy.

However, the world is losing biodiversity at an alarming rate. In Ryedale the resource of acidic oak woodland is now just 7ha: below 4% of the area estimated to have existed 200 years ago. Surveys on the great crested newt in the early 1990s suggested that around one third of field ponds had disappeared in Ryedale during the previous 20 years. This loss of biodiversity is not inevitable and it is possible to take action on a small and local scale, the accumulation of which can make a real difference to wildlife on the ground. Everyone can contribute and this Action Plan provides the necessary information and identifies the actions needed to help achieve this. The result will be not only a benefit to biodiversity at a local level but also at a regional, national and international level.



# The Biodiversity Framework

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This Plan is part of a much wider biodiversity framework, which encompasses the international, national and local levels.

## The international framework

In response to concerns about loss of biodiversity expressed at the Rio Earth Summit in 1992, there has been much activity in 'biodiversity planning' across the globe. Over 150 governments including the UK, signed a pledge (the Convention on Biological Diversity) to take immediate action to arrest the global loss of biodiversity. Many countries now have national Biodiversity Action Plans and are beginning the process of implementation. In 1992, the European Union also adopted the Habitats Directive with direct implications for biodiversity. This includes the Natura 2000 sites such as the lower part of the River Derwent and reflects the international importance of the Ryedale area for biodiversity.

## The national framework

In the UK, Biodiversity: The UK Action Plan was produced in 1994 with an overall goal 'to conserve and enhance biological diversity within the UK and to contribute to the conservation of global biodiversity through all appropriate mechanisms'. The UK Biodiversity Steering Group was set up to prepare a detailed plan of action to achieve these objectives. In 1995, it produced the Biodiversity: UK Steering Group Report. Volume 1: Meeting the Rio Challenge and Volume 2: Action Plans. Subsequently, new action plans have been added for the remaining priority species and habitats – UK Biodiversity Steering Group: Tranche 2 Action Plans Vols I-VI. These documents contain Action Plans for 45 habitats and 391 species considered in need of urgent conservation action. However it was recognised that much biodiversity conservation needed to be delivered on a local basis, so a suite of county and district plans, referred to as Local Biodiversity Action Plans have been produced. The Ryedale Biodiversity Action Plan is one of these.

## The regional and local framework

### Local Biodiversity Action Plans

The decision was made not to produce a plan at the North Yorkshire County level but rather produce a series of plans at a district level, including the Ryedale Biodiversity Action Plan (BAP). The Ryedale BAP covers the Ryedale area outside of the North York Moors National Park (see map 1) and includes part of the Howardian Hills Area of Outstanding Natural Beauty and part of the Yorkshire Wolds.

This plan links with neighbouring Local Biodiversity Actions Plans such as the plans for the North York Moors National Park, City of York, Hambleton District, Scarborough Borough and the East Riding of Yorkshire.

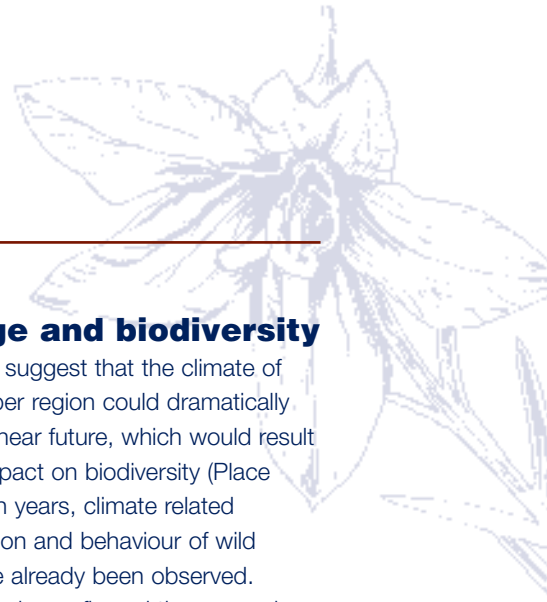
By bringing the biodiversity framework to the local level, the Ryedale Biodiversity Action Plan allows the information gained at the international and national level to be applied to this specific area. It also fills in any gaps left by the UK plans and ensures that all species and habitats important to this area are included in our biodiversity planning process. Finally, it provides clear guidance on the biodiversity resource and what needs to be done about it in Ryedale, which can then be taken on by all partners. This will allow those who do not have biodiversity as a core activity to take account of it and provides ways everyone can contribute to the conservation of Ryedale's wildlife.

Whilst Ryedale District Council has taken on the role of co-ordinating the Biodiversity Action Plan, this is not purely a Council led initiative. The success of the BAP lies in forming a wide ranging partnership consisting of landowners/farmers, foresters, local communities and voluntary groups.



# Wider Environmental Issues

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Many wider environmental issues affect wildlife including climate change, air pollution, water quality, sustainable development, energy production and use of natural resources. These have direct effects on biodiversity. For example, climatic warming is resulting in rapid changes in the distribution of some species whilst atmospheric nitrogen pollution has a fertilising effect that can damage naturally low-fertility ecosystems like bogs and fens. Some practical local issues have serious effects on biodiversity – septic tank effluent is a major problem in parts of the district and may compromise otherwise high quality, unpolluted streams.

These wider issues are not generally addressed through the Biodiversity Action Plan. However a range of strategies have been adopted which do so. These include Local Agenda 21 (sustainable development) and the Water Framework Directive.

## **AGENDA 21**

Agenda 21 also originates from the Rio Earth Summit and is a wide-ranging programme of action needed by local authorities and local communities throughout the world to achieve a more sustainable pattern of development in the 21st century. Developing a programme for biodiversity conservation at the local level is recommended as one of the core functions of Local Agenda 21. Agenda 21 helps deal with the wider issues not covered by the Biodiversity Action Plan such as climate change through the use of natural resources and sustainable development.

The production and implementation of the Ryedale Biodiversity Action Plan forms a key response by the Ryedale District Council and local communities to the Local Agenda 21 process.

## **Water Framework Directive**

The Water Framework Directive is the most substantial piece of EC water legislation to date. It requires all inland and coastal waters to reach “good status” by 2015. It will do this by establishing a river basin district structure within which demanding environmental objectives will be set, including ecological targets for surface waters. The Water Framework Directive will therefore tackle other issues such as septic tank effluent.

## **Climate change and biodiversity**

Climate change models suggest that the climate of the Yorkshire and Humber region could dramatically change in the relatively near future, which would result in a highly significant impact on biodiversity (Place 2003). Over the past ten years, climate related changes in the distribution and behaviour of wild plants and animals have already been observed. Insects like the emperor dragonfly and the saucer bug have spread northwards into Ryedale during the past few years. Nationally, warmer temperatures are changing the dates at which birds begin to nest, blossom opens, frogs spawn and hibernating animals emerge.

The northward spread of species once confined to the south of England means a change in distribution for some species. Species close to the southern edge of their natural distribution in Ryedale may be under threat, such as chickweed wintergreen, globeflower and mountain melick.

Changing weather patterns including more frequent extremes (flooding, drought, storms) could well affect many species. Most climate change models predict more flooding and more frequent droughts in lowland eastern England.

Although we do not know what the precise impacts may be locally, the Ryedale Biodiversity Action Plan can be of help. Thanks to the Biodiversity Audit we know what our present biological resource is and which species/habitats are most under threat. This Plan includes work to enhance habitats and their management thereby allowing species greater opportunities for moving and adapting to climate change. Similarly, by regenerating and correctly managing habitats we can help make these eco-systems less vulnerable to climate change.

One key element will be the retention and enhancement of wildlife corridors such as hedgerows, field margins and woodland which should help assist species dispersal. In addition the retention of key features such as semi-natural woodland and wetland sites will also play an important role in allowing species to adapt to climate change.



# How the Ryedale Biodiversity Plan was produced

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Detailed and wide-ranging information on the wildlife and habitats of Ryedale was collated to produce a Biodiversity Audit of the district in 2000. This was used to produce a draft list of priority habitats and species for the local Biodiversity Action Plan, including UK Priority Species/Habitats that are represented in the district and species that are of special local interest, e.g. where Ryedale supports a significant proportion of the British population. The draft list was discussed with organisations such as English Nature and the Environment Agency as well as a wide range of other consultees, resulting in some amendments and additions.

From this the consultation Ryedale Biodiversity Action Plan was written in 2005 followed by the final document which was launched in 2005. It contains Action Plans for 13 Habitats and 19 Species (16 individual and 3 grouped species). In addition to the Action Plans there are 9 Species Statements which include 5 UK Biodiversity Action Plan Priority Species, with the remainder made up of rare invertebrates considered to have nationally important populations in Ryedale but which occur on secure sites and are therefore not believed to be under direct threat. Species statements provide an overview of the status of that species and outline broad conservation measures that should be undertaken to help maintain their present favourable status. For a list of the species and habitats included in this BAP see Tables 1 and 2.

## Reasons for species and habitats choice

The Ryedale Biodiversity Action Plan aims to conserve threatened or declining species and habitats as identified through the international and national framework. However, Biodiversity Action Plans are not simply about the rare and special but also about 'keeping the commonplace common'. Therefore the species and habitats were chosen for the following reasons:

- National rarity. Some species such as *Laccornis oblongus* (a diving beetle) are Red Data Book species and are nationally rare, potentially vulnerable species.
- Extremely restricted distribution and specialised ecological requirements such as the bellflower picture-winged fly.
- Indicators of habitat quality. Species such as the *Electrogena affinis* (a mayfly) are good indicators of habitat quality.
- Species which are endangered in Ryedale such as the water violet.
- Habitats which are a distinctive feature of the area such as ancient ash woodland.
- Species which have high public appeal such as the otter and barn owl, thereby helping to raise the profile of biodiversity.
- Species which have nationally important populations within the district. For example baneberry and brown hare are still well represented in the area despite a national decline in their numbers.
- Those which have rapidly declining populations nationally such as the greater water parsnip which has declined catastrophically in Britain over the past 200 years.
- Flagship species. These can be used to highlight the conservation value of wider habitats such as knapweed broomrape which can be used to highlight the conservation value of unimproved grassland.
- Habitats which are important for biodiversity in Ryedale such as wetlands.

The Action Plans have set targets that will be monitored regularly. New species or habitats as deemed necessary, could be added to the BAP at any time, following appropriate consultation.

**Table 1** A list of habitats included in the Ryedale BAP and their national context. Species which can be found in these habitats but do not appear in the Ryedale BAP in their own right are shown in column 2. Work to benefit these species will be encouraged where appropriate.

KEY HABITATS	Species supported through the key habitats which do not have their own Action Plan in the Ryedale BAP	RYEDALE BAP	UK BAP
<b>WILDLIFE IN TOWNS AND VILLAGES</b>		●	●
	● Song thrush	●	●
	● Spotted flycatcher	●	●
	● Pipistrelle bat	●	●
<b>WOODLAND</b>			
● Acid oak woodland		●	
● Wood pasture, parkland and veteran trees		●	●
● Wet woodland		●	●
	● Woodcock	●	
	● Marsh tit	●	
	● Willow tit	●	
	● Bats	●	●
● Ancient ash woodland		●	
<b>FIELD BOUNDARIES</b>			
● Ancient/species-rich hedgerows		●	●
	● Pipistrelle bat	●	●
● Arable field margins		●	
<b>GRASSLAND</b>	● Marbled white butterfly	●	
● Neutral grassland		●	●
● Chalk and limestone grassland		●	●
● Acidic grassland		●	●
	● Green woodpecker	●	
<b>HEATHLAND</b>		●	●
	● Nightjar	●	●
<b>WETLANDS</b>			
● Floodplain swamps		●	
● Grazed/mown fen meadows		●	●
● Tall herb fens		●	
● Grazing marsh		●	●
● Reedbeds		●	
● Acidic peat mires		●	
● Purple moor-grass fen meadows		●	●
	● Reed bunting	●	●
	● Snipe	●	
<b>MESOTROPHIC LAKES</b>		●	●
<b>WILDLIFE-RICH PONDS</b>		●	

**Table 2** A list of species included in the Ryedale BAP and their national context. Habitats which can support these species but do not appear in the Ryedale BAP in their own right are shown in column 2. Work to benefit these habitats will be encouraged where appropriate.

KEY SPECIES	Habitats which support key species but which do not have their own action plan in the Ryedale BAP	RYEDALE BAP	UK BAP
Brown hare		●	●
A snail killing fly <i>Antichaeta brevipennis</i>		●	
Otter		●	●
A crane fly <i>Lipsothrix errans</i>		●	●
Depressed river mussel		●	●
A flower beetle <i>Oedemera virescens</i>		●	
Thistle broomrape		●	●
Crane fly <i>Arctoconopa melampodia</i>		●	
Fungus gnat <i>Macrocera fastuosa</i>		●	
Water vole		●	●
Tree sparrow		●	●
	● Orchards	●	
	● Hedgerows	●	
	● Hedgerow trees	●	
	● Winter stubbles	●	
Woodlark		●	●
<b>FARMLAND BIRDS</b>			
● Grey partridge		●	●
● Turtle dove		●	●
● Skylark		●	●
● Linnet		●	●
● Tree sparrow		●	●
● Corn bunting		●	●
● Reed bunting		●	●
● Lapwing		●	
● Barn owl		●	●
● Yellowhammer		●	
	● Rotational set-aside		
Great crested newt		●	●
Bumblebees		●	●
Glow-worm		●	
A diving beetle <i>Laccornis oblongus</i>		●	
Bellflower picture-winged fly		●	
A mayfly <i>Electrogena affinis</i>		●	
White-clawed crayfish		●	●
Water violet		●	
Baneberry		●	
Greater water parsnip		●	●
Knapweed broomrape		●	
Threatened arable flowers		●	●
Red hemp nettle		●	●
True fox sedge		●	●

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## **The classification of habitats and species**

Targets and actions for key species have been classified in one of four ways. Where the actions for individual species mostly involve habitat management or enhancement, the species has been included within the appropriate Habitat Action Plan. Where most of the actions necessary for conserving the species are very specific, or the species occurs in a number of habitats, then a separate species action plan has been drawn up. In addition there are species action plans for groups of species such as farmland birds. The Species Statements have been written for the 5 relevant UK Biodiversity Action Plan Priority Species which were not included elsewhere, with the remainder made up of rare invertebrates considered to have nationally important populations in Ryedale but which occur on secure sites and are therefore not believed to be under direct threat. The relationship between species and habitat action plans is shown in Table 3.

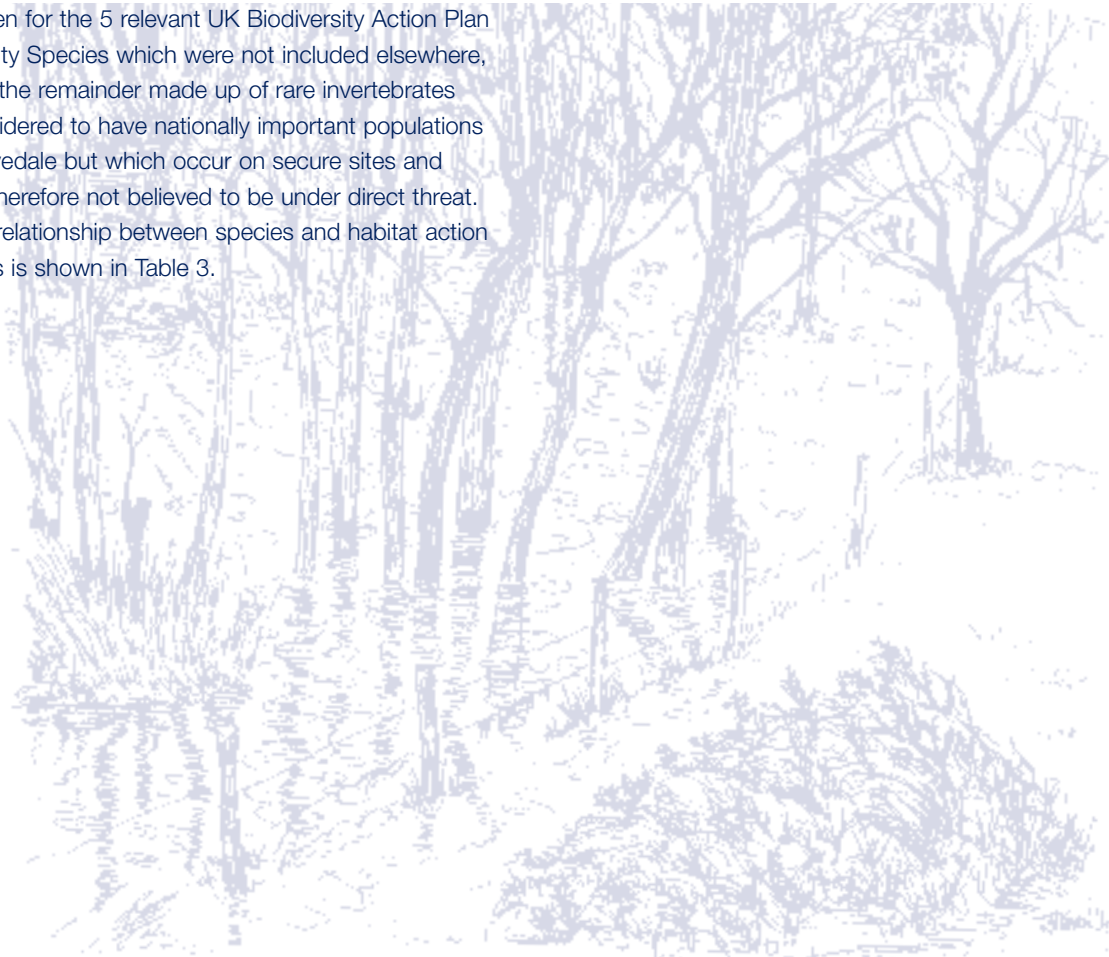


Table 3 Relationship between the Habitat Action Plans, Species Action Plans and Species Statements

To see whether a species is included in a Habitat Action Plan, has its own Species Action Plan or is covered by a Species Statement look for the following symbols opposite the species name. HAP – Action for key species included in this Habitat Action Plan.  
SAP – Action for key species in a

KEY SPECIES	HAP, SAP or SS	RYEDALE HABITAT ACTION PLANS	
		GRASSLAND Key Habitats included: ● Neutral Grassland ● Chalk and Limestone Grassland ● Acidic Grassland	WOODLAND Key Habitats included: ● Acid Oak Woodland ● Wood Pasture, Parkland and Veteran Trees ● Wet Woodland ● Ancient Ash Woodland
Water vole	SAP		
Otter	SS		
Brown hare	SS		●
Pipistrelle bat	HAP	●	●
Bats	HAP	●	●
Farmland birds	SAP	●	●
Woodlark	SAP	●	
Tree sparrow	SAP		
Snipe	HAP		
Reed bunting	HAP		
Nightjar	HAP		
Skylark	SAP	●	
Green woodpecker	HAP	●	●
Barn owl	HAP	●	●
Grey partridge	SAP		
Willow tit	HAP		●
Marsh tit	HAP		●
Woodcock	HAP		●
Spotted flycatcher	HAP		
Song thrush	HAP		
Great crested newt	SAP		
White-clawed crayfish	SAP		
Depressed river mussel	SS		
Marbled white butterfly	HAP		
Bumblebees	SAP	●	
Glow-worm	SAP	●	
A snail killing fly	SS		
A mayfly <i>Electrogena affinis</i>	SAP		
A cranefly <i>Lipsothrix errans</i>	SS		●
Cranefly <i>Arctoconopa melampodia</i>	SS		
Bellflower picture-winged fly	SAP		●
A flower beetle <i>Oedemera virescens</i>	SS		●
A diving beetle <i>Laccornis oblongus</i>	SAP		
Fungus gnat <i>Macrocera fastuosa</i>	SS		●
Threatened arable flowers	SAP		
Baneberry	SAP		●
True fox sedge	SAP		
Red hemp nettle	SAP	●	
Knapweed broomrape	SAP	●	
Thistle broomrape	SS	●	
Greater water parsnip	SAP		
Water violet	SAP		
A flower beetle <i>Oedemera virescens</i>	SS		

RYEDALE HABITAT ACTION PLANS

<p>FRESHWATER</p> <p>Key Habitats included:</p> <ul style="list-style-type: none"> <li>● Mesotrophic Lakes</li> <li>● Wildlife-rich Ponds</li> </ul>	<p>WETLANDS</p> <p>Key Habitats included:</p> <ul style="list-style-type: none"> <li>● Floodplain Swamps</li> <li>● Grazed/Mown Fen Meadows</li> <li>● Tall Herb Fens</li> <li>● Grazed Marsh</li> <li>● Reedbeds</li> <li>● Acidic Peat Mires</li> </ul>	<ul style="list-style-type: none"> <li>● Purple Moor-grass Fen Meadows</li> </ul>	<p>WILDLIFE IN TOWNS AND VILLAGES</p>	<p>FIELD BOUNDAR</p>
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# Relationships with other Plans

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## **Ryedale Local Plan/Local Development Framework**

The protection, maintenance and wherever possible enhancement of biodiversity within Ryedale and beyond is the first objective of conservation policies as laid out in the Ryedale Local Plan. The Biodiversity Action Plan is therefore an important part of the planning process because in addition to providing valuable information and supplementary planning guidance, it identifies specific and positive actions that can be undertaken to preserve and enhance biodiversity in Ryedale.

The Ryedale Local Plan will be progressively replaced by the Local Development Framework from 2006/7 onwards. It is essential that existing policy approaches that assist biodiversity are retained and enhanced where possible. It is anticipated that the Local Development Framework will retain the same level of support for biodiversity as the current Ryedale Local Plan.

## **The Ryedale Community Plan – Imagine Ryedale**

Imagine Ryedale is the first community plan for the area and has been developed by a range of partners – the Ryedale Strategic Partnership. It identifies the priorities for creating and maintaining sustainable communities and includes a commitment to protecting and enhancing the biodiversity of Ryedale through the Landscape and Environment section.

## **Howardian Hills Area of Outstanding Natural Beauty (HHAONB) Management Plan 2004**

The Management Plan was published in July 2004 and deals mainly with land management issues and is a series of practical ideas to guide the HHAONB into the future. It encourages positive action to look after the landscape, wildlife, historical and cultural heritage of the HHAONB, whilst still recognising the importance of a healthy rural economy. It also helps people to enjoy the area and to solve problems where conflicts exist. Actions relevant to biodiversity within the Howardian Hills are included in this Management Plan.

## **Local Geodiversity Action Plan covering the Ryedale area**

Geodiversity is a relatively new term that includes the 'variety of rocks, fossils, minerals, landforms and soils, along with the natural processes that shape the landscape' (English Nature et al, 2003). Local Geodiversity Action Plans have partly developed from the model of Biodiversity Action Plans and establish an on-going process that sets clear aims and objectives, with measurable targets, for local geoconservation. Geodiversity is important as it directly affects the biodiversity of an area. For example landform, soil type, drainage and the underlying rock will all influence the range and type of biodiversity found in an area.

A Local Geodiversity Action Plan is currently in the process of being written and will contain actions and targets relevant to the Ryedale Biodiversity Action Plan. In return this plan needs to act as a source of advice and information for the actions and targets identified within the Local Geodiversity Action Plan.

# Implementing the Ryedale BAP

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A range of organisations and bodies will implement the Plan. To ensure effective implementation, a Ryedale Biodiversity Partnership Group will be formed during 2007. The role of the Partnership Group will be to implement and monitor the actions identified in this Plan and to co-ordinate biodiversity work within the Ryedale area outside of the North York Moors National Park.



# **Habitat Action Plans**



# Wet Woodland



## 1. Introduction

In Ryedale, wet woodland occurs on floodplains, at the margins of open water, in valley bottoms irrigated by springs or seepages and around flooded mineral workings. Patches also occur around flushes within drier valley woodlands in the Jurassic hills.

Several types of wet woodland are represented in Ryedale (see box). The total area of this habitat is estimated to be around 91 hectares. The district supports one of the most important concentrations of wet woodland in the Yorkshire & Humber Region, especially of alder – tussock sedge woods which cover about 41 hectares.

### Types of Wet Woodland in Ryedale

*Grey sallow scrub* (coded W1 in the National Vegetation Classification)

Bushy thicket of grey sallow; occurs locally in small stands at the edges of standing water and in flooded mineral workings.

*Sallow – birch – reed woodland* (W2)

Occurs very locally in the Vale of Pickering and Vale of York on peaty soils where sallow and downy birch colonise open fen. A nationally-uncommon type of woodland.

*Downy birch – purple moor grass – sphagnum moss woodland* (W4c)

Develops on damp acidic soils. Very small stands in the Howardian Hills.

*Alder – greater tussock sedge woodland* (W5)

Fen woodland with tussock sedge, common reed, purple small-reed or wood club-rush abundant in the field layer. Restricted to the Howardian Hills and Kirkham Gorge. Ryedale probably supports one of the most important concentrations of this type of woodland in Yorkshire. Often near-natural, unmanaged habitat irrigated by springs and seepages.

*Alder - stinging nettle woodland* (W6)

Nutrient-rich floodplain woodland dominated by alder or large willows. Occurs locally along the Rye and Derwent and over old clay pits near Costa Beck.

*Alder - ash - yellow pimpernel woodland* (W7)

Associated with flushes and streamsides in valley woodlands in the Howardian Hills.

Wet woodlands in Ryedale support a rich flora including localised species such as bay willow, marsh hawksbeard and purple small-reed. Over 20 nationally rare or scarce insects depend on wet woodland in the district including the crane-fly *Lipsothrix errans* (a UK BAP Priority Species) and the extremely rare fungus fly *Macrocera fastuosa*. Features valuable for specialised invertebrates include dead and decaying timber, flushes, wet silt and stream banks. Birds include species of conservation concern such as woodcock, marsh tit and willow tit.

More nutrient-rich alder/willow woods typically have a rather impoverished flora but the presence of decaying trees can provide valuable habitat for birds, bats and invertebrates. Otters (a UK BAP Priority Species) use wet woodland alongside rivers and streams.

The UK resource of wet woodland is estimated to be in the region of 50,000 to 70,000 hectares. Wet woodland is identified as a Priority Habitat in the UK Biodiversity Action Plan.



Narrow Buckler fern

# Wet Woodland

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## 2. Conservation issues

In the past, land drainage and woodland clearance will have resulted in some loss of wet woodland in Ryedale. Some wet woodland is of recent origin, such as alder or sallow carr which has developed over old brick workings at Claxton, Anchor Plain and near Pickering. Overall, the distribution of wet woodland in Ryedale is probably stable, many sites being unsuited to more productive uses.

Historically, alder was sometimes coppiced for clog-making but most native wet woodland in Ryedale is unmanaged. It is important to conserve the 'near-natural' character of the least modified alder woods. A few stands of native wet woodland have been replanted with poplars but the area is relatively small.

In a few floodplain woodlands, **invasive alien species** such as Himalayan balsam threaten native vegetation.

**Alder root disease** (Phytophthora) has affected small numbers of alder trees in the Derwent floodplain near Malton; if this disease becomes more widespread it could affect large numbers of riparian trees. Alder carr outside river corridors is unlikely to be affected by the disease.



*Sand Leek, Lady Spring Wood, Malton*

**Run-off from intensely farmed land** is a localised threat to wet woodland, especially fen alder carr. At one site alder - tussock sedge woodland is turning into alder - stinging nettle woodland, probably as a result of fertiliser run-off from surrounding farmland. Wet woodlands will benefit from the establishment of buffer zones such as Environmental Stewardship grass margins, arable reversion grassland and new woodland planting to protect them from surrounding land use.

There may be occasional opportunities for **restoring native tree cover** to wet woodlands replanted with commercial timber crops (e.g. to meet UK Woodland Assurance Scheme targets).

Creation of new areas of wet woodland under the English Woodland Grant Scheme (EWGS) may be an attractive option on agriculturally-marginal land, especially land prone to flooding. Benefits for biodiversity will be increased where new wet woodland is close to existing stands. New planting of wet woodland should normally be restricted to set-aside, arable or improved grassland.

## 3. Action plan objectives

- Maintain the present wet woodland resource with as much as possible in favourable condition.
- Encourage the establishment of buffer zones to protect wet woodland from surrounding land use.
- Promote control of invasive alien species such as Himalayan balsam where these pose a threat to wet woodland.
- Encourage the expansion of wet woodland where this does not conflict with other conservation objectives.

## 4. Current action

A UK Action Plan for wet woodland has been published. This aims to: retain the current UK area of ancient semi-natural wet woodland and the total area of wet woodland as a whole; ensure that 50% of all wet woodland is in favourable condition by 2010; restore 3,200 ha. of replanted wet woodland to native tree cover; and to establish 6,750 ha. of new wet woodland by 2015.

Small areas of wet woodland in Ryedale are included within Sites of Special Scientific Interest (SSSIs) at Kirkham Park, Jeffry Bog and Dalby Bush Fen. Several Sites of Importance for Nature Conservation (SINCs) include a wet woodland element; these receive a degree of protection from development.

Small areas of native wet woodland have been planted recently with Woodland Grant Scheme grants along the middle Rye corridor.

The Hovingham Estate is in the process of identifying areas suitable for restoration of semi-natural woodland, as part of the UK Woodland Assurance Scheme. It is intended to restore small areas of wet woodland by removing planted conifers at Mill Wood (Coulton) and South Wood (Wath).

An entomological survey of spring-fed wetlands in Ryedale (including wet woodlands) was undertaken in 2000 with support from the Howardian Hills AONB Project, Ryedale District Council, English Nature and the Environment Agency. This work revealed that a rich fauna of scarce and specialised flies is associated with wet woodland in the district. Detailed ecological surveys have also been undertaken at Lady Spring Wood (Malton) and Beck Dale Wood (Westow) to guide management.

Management work at Lady Spring Wood (Malton) has included control of Himalayan balsam, building boardwalks to facilitate public access and creation of a mosaic trail illustrating wildlife features of the site.

Alder root disease is monitored nationally and locally by the Forestry Commission. The Forestry Commission and partners have recently published an overview of native woodland in the North York Moors and Howardian Hills which includes proposals for the creation of Forest Habitat Networks.

## 5. Proposed action

- Conserve the existing wet woodland resource in Ryedale through advice, licensing and development control mechanisms. The near-natural character of some wet woodlands should be positively recognised (FC, EA, RDC).
- Encourage control of invasive alien species such as Himalayan balsam where these threaten the native flora of wet woodlands. Carry out comprehensive control of Himalayan balsam at one site by 2008 (RDC, HHAONB, NYCC).
- Encourage the creation of new wet woodlands and extension of existing sites where this does not conflict with other conservation objectives. In particular, new native woodland should be encouraged along the Derwent and Rye corridors. Aim to create 10 hectares of new wet woodland in Ryedale by 2010 (FC, RDC, HHAONB, FWAG, RDS).
- Ensure that site managers are aware of rare or threatened species dependent on wet woodland and their conservation requirements (RDC, HHAONB, YWT).

## 6. Links to other action plans

This Action Plan complements the UK Habitat Action Plan for wet woodland. It is relevant to the UK Species Action Plans and local Species Statement for Otter and the local and UK Species Statements for the *cranefly* (*Lipsothrix errans*).

## 7. Bibliography

FORESTRY AUTHORITY (undated). The management of semi-natural woodlands: wet woodlands. Forestry Practice Guide 8. Forestry Commission: Edinburgh.

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# Ancient Ash Woodland

## 1. Introduction

Ancient ash woodland occurs on calcareous (lime-rich) sites which have supported tree cover for several centuries. Ancient ash woods are a distinctive feature of the Jurassic limestone areas of Ryedale, mainly in the Howardian and Tabular Hills. There are around 236 hectares of ancient semi-natural<sup>1</sup> woodland in Ryedale, the majority of which is ash woodland. Few, if any, ash plantations in the Ryedale Wolds can be considered ancient.

Ash is the predominant native tree in calcareous woodland with associates including wych elm, field maple, hazel and occasional common oak. The shrub layer may contain distinctive lime-loving shrubs such as dogwood, buckthorn or spindle, though these are often restricted to the woodland edge.

Historically, many ancient ash woods were managed by coppicing the underwood but most have been converted to 'high forest' over the past 200 years. These tend to have a very even age-structure with predominantly semi-mature trees. Many ash woods have been replanted, often with sycamore or to a lesser extent beech, cherry or larch.

Ancient woodlands are of special value because they support species which rarely colonise woods of more recent origin. Ancient ash woods in Ryedale can support a very rich flora including specialities such as herb Paris, baneberry, wild columbine, toothwort, Solomon's seal, greater butterfly orchid and wood barley. More widespread plants include dog's mercury, early dog violet, goldilocks buttercup, wood speedwell and early purple orchid.

A number of rare invertebrates are associated with ancient ash woods in Ryedale including the bellflower picture-winged fly *Platyparaea discoidea* and the six-spotted longhorn beetle *Leptura sexguttata*.

Ash trees are also very important for bats, particularly for tree roosting bats such as the Noctule Bat *Nyctalus noctula*.

<sup>1</sup> *Semi-natural* woodlands are those where trees native to the site predominate  
<sup>2</sup> coded W8 in the National Vegetation Classification  
<sup>3</sup> coded W9 in the National Vegetation Classification

Most ancient ash woodland in Ryedale can be classified as lowland ash – maple – dog's mercury woodland<sup>2</sup>. Ash – rowan woodland<sup>3</sup> is more characteristic of upland northern and western Britain.

This occurs only very locally in Ryedale with small stands in the Howardian Hills and at Little Park and Gundale near Pickering. Some uncommon northern plants such as stone bramble and mountain melick grow in 'upland' ash woodland near Pickering.

This Action Plan refers to ancient woodland on calcareous soils which has not been extensively replanted with conifers. It includes ash plantations on ancient sites and woods where ash has been partly replaced by other broadleaved trees, but which still support characteristic herb layer flora.

Lowland ash woodland is not identified as a Priority Habitat in the UK Biodiversity Action Plan, although upland mixed ash woodland is. Ancient ash woods have been identified as a Priority Habitat in the Ryedale Biodiversity Action Plan because they are a characteristic feature of the district and of special conservation value for their associated flora and fauna.

## 2. Conservation issues

Key issues include **conserving the more natural examples of this habitat, restoring habitat diversity, restoring native tree cover** to replanted stands where opportunities arise, and **protecting scarce or threatened species** associated with ancient ash woodland.

Only about 14% of ancient woodland in Ryedale has not been replanted. Replanted stands can still be valuable for biodiversity but planting of sycamore, beech and larch impoverishes the herb flora by increasing shade. Even where native tree cover predominates, Ryedale ash woods are often very uniform, with even-aged stands of semi-mature trees and a poorly-developed shrub layer. This means that species which depend on features such as old trees or open areas may struggle to survive.

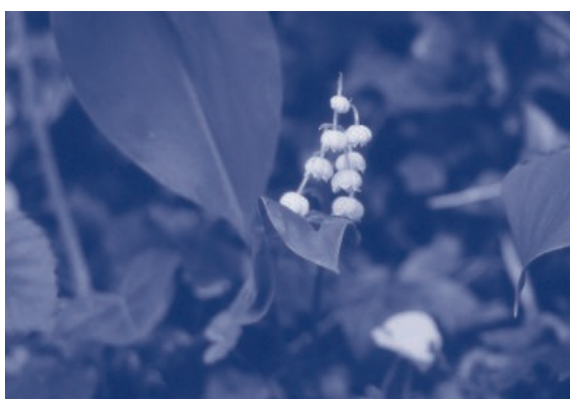
# Ancient Ash Woodland

The least modified ancient ash woods are of special value for biodiversity. Favourable management will include removal of non-native species and maintaining a continuity of natural habitat features.

Changes to the Forestry Commission grant scheme in 2005 may well lead to a shift towards areas of replanted ancient woodland being restored to native tree cover. The English Woodland Grant Scheme provides financial support for woodland owners and the new grant structure launched in 2005 strongly encourages the restoration of ancient woodland sites previously planted with non-native species. There already seems to be a discernable trend towards the restoration of Plantations on Ancient Woodland Sites within the Howardian Hills AONB.

Changes in forestry practices affect the composition and structure of ancient woodland. Small-scale group felling or continuous cover practices are gaining favour and provide a means of cropping valuable timber whilst limiting disturbance to the habitat. This is likely to be particularly beneficial in ancient ash woods.

There has been a small scale revival of coppicing during the past few years. This benefits species dependent on sunny glades and a vigorous understorey, although the rarer coppice woodland specialities (such as dormouse and fritillary butterflies) have disappeared from Ryedale. Coppicing and associated woodland crafts are labour intensive with a low profit margin. Practical problems include browsing of new coppice shoots by roe deer.



*Lily of the Valley, Beadale Wood*

Only a few plant species associated with ancient ash woodland have become extinct in Ryedale (e.g. sword-leaved helleborine), but populations of scarce species like baneberry can be very small. Unplanted common lime (believed to be a natural hybrid between large-leaved and small-leaved limes) is represented by only three or four ancient trees at two sites and may eventually become extinct in Ryedale.

Neighbouring land use can impact on ancient ash woods, especially where arable land adjoins woodlands on scarp or valley slopes. Fertiliser leachate encourages competitive field-layer species such as dog's mercury and stinging nettle, and this is suspected to be a threat to baneberry on some sites.

Extension of ancient ash woods and planting of new ash woodland is a lower priority because specialised herbs and invertebrates will be slow to colonise new plantings. However, it would be beneficial in buffering and linking isolated areas of ancient woodland.

Restocking with commercially-grown trees has long been common practice in managed woodland but use of natural regeneration and/or planting with local-origin stock needs to be encouraged in ancient semi-natural woods in order to conserve genetic diversity. Trees of locally-native origin are now increasingly available with one commercial forest nursery specialising in their propagation, though there is a need to increase the availability of some species.



# Ancient Ash Woodland

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*Solomons Seal, Little Park Wood, Pickering*

## 3. Action plan objectives

- Encourage the restoration of replanted ancient woodland where this is economically sustainable.
- Encourage the conservation and restoration of natural habitat diversity in ancient ash woods.
- Support sustainable management of ancient ash woodland which benefits biodiversity, e.g. restoration of coppice management on appropriate sites.
- Encourage extension of ancient ash woods using native planting or natural regeneration where this is compatible with other conservation objectives.
- Encourage sympathetic management of land adjoining ancient ash woods, e.g. buffer strips to reduce the impact of spray and fertiliser drift.
- Increase the availability of trees and shrubs of locally-native provenance in order to conserve genetic diversity.

## 4. Current action

A few ancient ash woodlands in Ryedale are already managed primarily for nature conservation: Stables Wood at Sinnington has recently been acquired by the Woodland Trust, Manor Vale Wood is managed by Kirkbymoorside Town Council and Chafer Wood (Ebberston) is a Yorkshire Wildlife Trust reserve. Ancient ash woodland occurs within Kirkham Parks and Haugh & Gundale Slacks SSSIs.

Forestry Commission discretionary grants for woodland management and planting take account of biodiversity benefits. As mentioned on the previous page changes to the Forestry Commission grant scheme in 2005 may well lead to the restoration of replanted ancient woodland to native tree cover.

The Forestry Commission and others have recently published an overview of native woodland in the North York Moors and Howardian Hills that includes proposals for the creation of Forest Habitat Networks.

Planting of new native woodland linking ancient woodland sites is being undertaken on the Castle Howard Estate under the Forestry Commission's JIGSAW scheme.

UKWAS implementation on the Hovingham Estate includes identifying opportunities for restoration of semi-natural woodland. Conservation measures are also being considered for key species such as baneberry.

Coppicing has been restored in a few ancient ash woods by members of the Three Ridings Coppice group, who have developed a marketing network for local woodland craft products and also provide training and demonstration events. Conservation volunteers have assisted with coppice management at Beadale Wood whilst small-scale coppicing on the Castle Howard and Hovingham Estates has been grant-aided through the Howardian Hills AONB Project.

There has been increased interest in the use of local seed sources for restocking ancient woodland, with some local provenance saplings now commercially available.

Some Environmental Stewardship grass margins are designed to buffer ancient ash woods from the effects of arable cultivation in adjacent fields.

A UK Habitat Action Plan has been published for upland mixed ash woods but this is only marginally relevant to Ryedale.



# Ancient Ash Woodland

## 5. Proposed action

- Encourage management of ancient ash woodland to maintain or restore native tree cover through voluntary agreements, grant aid and advice. This should include measures to retain post-mature trees, encourage a varied age and habitat structure (including understorey vegetation), retain or create open areas and promote natural regeneration of indigenous species. In the few sites where sycamore is only present in small quantities, its spread should be discouraged (landowners, FC, HHAONB, RDC, FWAG).

NB: restoration of native tree cover in replanted ancient woodland is likely to be a slow, gradual process so no specific target has been set.

- Encourage new native woodland planting to expand, buffer or link ancient ash woods (especially those in semi-natural condition). Care should be taken not to damage other habitats of existing conservation value (e.g. herb-rich grasslands or wetlands). Encourage use of natural regeneration and/or use of local provenance trees and shrubs. Aim to buffer or extend three ancient ash woodland sites with new native woodland (landowners, FC, HHAONB, FWAG, RDC, RDS).
- Support restoration of coppice management in appropriate locations through grant-aid, practical assistance, training and marketing of woodland craft products (Three Ridings Coppice Group, FC, FWAG, HHAONB, RDC, BTCV).
- Assess the scope for increasing the availability of trees and shrubs of locally-native provenance. Identify any additional resource requirements (BTCV/nursery businesses).

- Ensure that management of ancient ash woods takes into account the requirements of scarce or threatened species through advisory and survey work, e.g. baneberry, bellflower picture-winged fly, square-spotted clay moth and deadwood invertebrates (FC, EN, HHAONB, RDC).
- Encourage uptake of agri-environment grants such as ES grass margins to buffer ancient ash woods from neighbouring agricultural operations (landowners, DEFRA, FWAG, HHAONB, RDC).

## 6. Links to other action plans

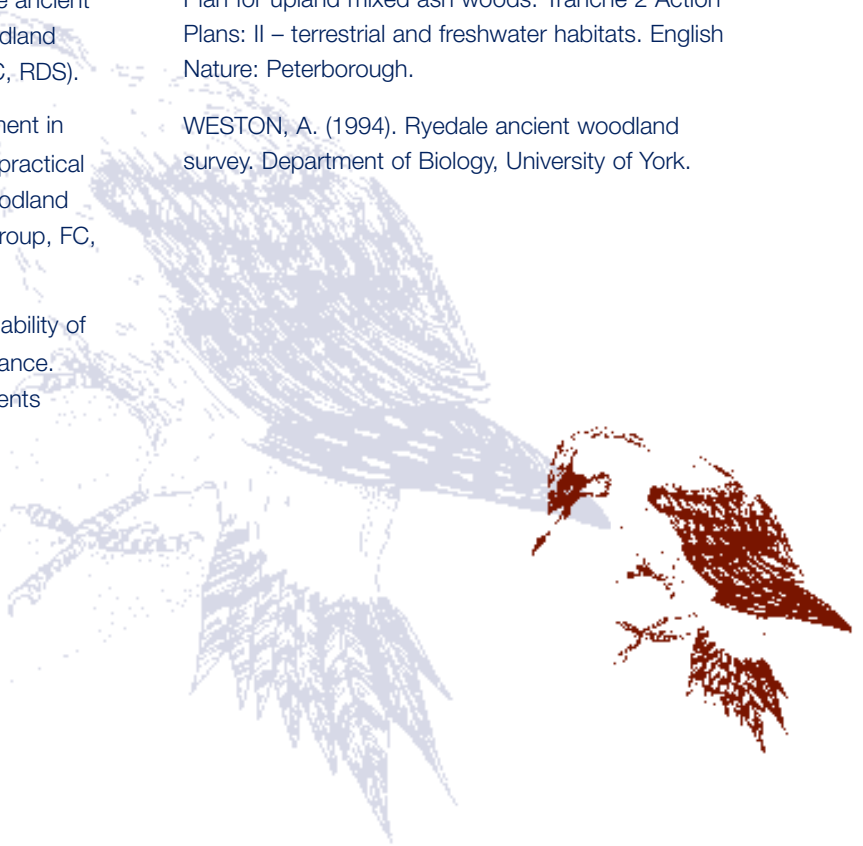
Implementation of this Habitat Action Plan should take into account the local Species Action Plans for bellflower picture-winged fly and baneberry.

## 7. Bibliography

PETERKEN, G.F. (2002). Native woodland development in the North York Moors and Howardian Hills. Forestry Commission: Pickering.

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# Acidic Oak Woodland

## 1. Introduction

Native oak woodlands are characteristic of neutral or acidic substrates. Where these occur over markedly lime-deficient soils, a distinct type of acidic oak woodland is characterised by mixtures of sessile, common or hybrid oaks with birch, rowan and holly. Wavy hair-grass, greater woodrush, bilberry, wood sorrel and hard fern occur in the field layer with varying amounts of bracken.

Historically, acidic oak woodland would have grown extensively on higher ground in the Howardian Hills and, more locally, in the valleys of northern Ryedale. The vast majority of this has been replanted with conifers only small stands at Hovingham High Wood, Gilling Woods and Manor Vale (Kirkbymoorside) remain. The district resource of acidic oak woodland is now just 7 ha.: below 4% of the area estimated to have existed 200 years ago.

Upland oak woodland is identified as a Priority Habitat in the UK Biodiversity Action Plan. Acidic oak woodland has been identified as a Priority Habitat in Ryedale because of its rarity and the extent of its disappearance. It is also important as a habitat for several species which are uncommon in the district such as wood warbler and chickweed wintergreen.

## 2. Conservation issues

The sites which would once have been occupied by acidic oak woodland in the Howardian Hills have almost all been replanted with conifer crops. Key conservation issues include **maintaining the few remaining fragments** and **restoring representative areas** to native tree cover.

Remnant sessile oak woodland at Gilling Woods has been threatened in the past by regenerating Norway spruce from a neighbouring plantation. The spruce within the oak woodland were removed in 2004, although some young saplings will have been missed. In addition, until the neighbouring plantation is felled (which is unlikely to happen until around 2050) regeneration will continue to be an issue. Other parts of Gilling Woods, managed by the Forestry Commission, are ancient oak woodland replanted with conifers. Eventual restoration of native broadleaves will provide a substantial opportunity to re-establish acidic

oak woodland (up to 62 ha.). This will be a gradual process with thinning towards native broadleaves rather than clear-felling and re-planting. Control of invasive rhododendron may be required as part of the restoration process.

There are unlikely to be significant opportunities to establish new acidic oak woods on agricultural land but opportunities for natural regeneration may occur during the restoration of worked-out sand quarries.

Acidic oak woodland is more widely distributed in the North York Moors National Park and elsewhere in upland Yorkshire but examples in Ryedale are intermediate between southern/lowland and northern/lowland types and therefore of particular ecological interest.

## 3. Action plan objectives

- Maintain remaining stands of semi-natural acidic oak woodland in Ryedale and encourage restoration at appropriate localities through restoration of native tree cover, rhododendron control and careful management of veteran trees.



Wood Sorrel

# Acidic Oak Woodland

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## 4. Current action

- As part of UK Woodland Assurance Standard (UKWAS), the Hovingham Estate is identifying opportunities to restore semi-natural woodland, including acidic oak woodland.
- The Forestry Commission and others have recently published an overview of native woodland in the North York Moors and Howardian Hills which proposes the creation of Forest Habitat Networks.
- North Yorkshire County Council is currently reviewing opportunities for nature conservation in the restoration of consented mineral workings.
- A UK Habitat Action Plan for upland oakwoods has been published. This has limited relevance to Ryedale but aims to maintain the current resource, expand the area by 10% and restore a similar area by removing conifers and rhododendron.
- Norway spruce have been removed from sessile oak woodland at Gilling with considerable support from the Forestry Commission and the Howardian Hills AONB.

## 5. Proposed action

- During 2007, assess the potential to regenerate native woodland at Gilling Woods prior to the revision of the Forest Design Plan (FC).
- Initiate restoration of at least 10 ha. of acidic oak woodland in Ryedale by 2010. Ensure that restoration schemes make use of locally native seed sources (FC, HHAONB, landowners, RDS).
- Monitor Norway spruce regeneration in sessile oak woodland at Gilling and take action if necessary (landowner, HHAONB).

## 6. Links to other action plans

Implementation of this Action Plan will contribute to the targets set out in the UK Action Plan for upland oakwoods, although acidic oak woodland in Ryedale does not have a well-defined upland character.

## 7. Bibliography

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# Wood Pasture, Parkland and Veteran Trees

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## 1. Introduction

Parkland and wood pasture are characterised by large, open-grown trees set amongst grassland. In Ryedale this includes enclosed parkland landscapes and grazed pastures scattered with old trees.

'Post-mature' trees are a key feature of these landscapes, supporting specialised invertebrates, lichens and fungi which depend upon ageing timber. Such trees are rare in managed woodland, where they are normally cropped when they reach maturity. Many of the associated invertebrates and fungi have poor powers of dispersal, so parkland and wood pasture are richest in biodiversity where there has been a long continuity of old timber

Ryedale contained several medieval deer parks. None of these survive in a recognisable form today although Sheriff Hutton Park has its origins as an enclosure within the Royal Forest of Galtres, granted by the Crown in 1335. Landscaped parks associated with stately homes and country houses sometimes incorporated features of earlier deer parks, including ancient pollarded oaks. However, most of the designed parkland in the district was created on open land during the 18th century.

Outside parkland, some clusters of old field trees may be relics of historic pasture-woodland, e.g. veteran oaks and field maples in grassland near Oxpasture Wood at Bulmer and ash pollards at Allerston. Ancient trees occasionally occur in isolated locations such as the Mowbray oak at Slingsby, which is believed to be around 550 years old. Trees of well over 200 years age occur in several churchyards.

It is difficult to quantify the area of parkland and wood-pasture of significant wildlife interest in Ryedale. There are eight Registered Parks designated by English Heritage for their historical value. These cover around 2,000 ha. but include large areas of limited importance for biodiversity.

Two surveys have recently been undertaken which provide some valuable data on invertebrates within parkland and wood-pasture in part of the Ryedale area (Godfrey 2002 and Drane 2003). The surveys found that there are sites which should be considered to be of county importance for invertebrates, with some potentially of national importance. In addition, several Nationally Scarce species were found, including some Red Data Book ones.



*Veteran Tree*

# Wood Pasture, Parkland and Veteran Trees

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There are records of several rare insects and fungi associated with ancient trees from Castle Howard Park. Other species include bats and birds such as little owl and green woodpecker. Duncombe Park National Nature Reserve at Helmsley (within the North York Moors National Park) is of national importance for ancient trees and associated biodiversity.

Lowland wood pasture and parkland is identified as a Priority Habitat in the UK Biodiversity Action Plan. The Ryedale Action Plan covers pasture and historic parkland containing old trees and individual veteran trees in fields or hedgerows.

## 2. Conservation issues

Important biodiversity issues include **protecting veteran trees** from damage, **maintaining future continuity** of old timber and **encouraging low-intensity land-use and habitat enhancement**. **Establishment of new areas of wood-pasture landscape** close to existing habitats needs to be considered. **Conserving genetic characteristics** of ancient trees may also be important.

With an increasing fear of litigation, landowners are under pressure to remove potentially unsafe trees even when they are of special landscape or ecological value. A variety of techniques are available to manage veteran trees sympathetically but specialist arboricultural skills are needed and maintaining large old trees in situ may often be more expensive than felling.

On some sites substantial generation gaps exist, so that there are no mature trees to replace ancient trees close to the end of their lives. In such cases it is essential to maintain the longevity of veteran trees and carry out planting to ensure future continuity of the habitat.

Intensive land management can be detrimental to old trees and their associated wildlife, e.g. ploughing, fertiliser applications (which may affect beneficial fungi), soil compaction through livestock trampling, and bark damage by livestock. Fencing of individual trees or stands of trees will often be beneficial.

Opportunities for less intensive land management (e.g. reducing grazing pressure and fertiliser inputs, reversion of arable to grassland) could be encouraged through Environmental Stewardship.

Much designed parkland in Ryedale is of limited importance for biodiversity, especially where open areas are dominated by improved grassland or arable. Parkland management needs to integrate a range of objectives amongst which landscape/aesthetic and agricultural objectives are likely to be paramount. However, simple measures such as retaining old trees and fallen deadwood, and creating or maintaining herb-rich grassland could provide valuable wildlife benefits.

Some ancient trees may be genetically important, originating from wild populations not 'improved' by selection for their timber value. It will be valuable to maintain this gene pool, and saplings propagated from local veteran oaks have now been used in several planting schemes.

We know relatively little about the wildlife associated with old trees in Ryedale. Better knowledge would improve decision-making and advice to land managers.

As well as locally-native oak, ash and field maple, old specimens of cultivated limes, horse chestnut and beech can be important for specialised insects or fungi. This should be taken into account in planting schemes. Old open-grown hawthorns and other shrubs can support a rich and specialised insect fauna.

Many insects which develop inside old trees need nectar and pollen when they emerge as adults. Wildflowers and native shrub blossom should be encouraged in parkland/wood-pasture to provide this resource.

There may be opportunities to create new parkland/wood pasture habitats close to ancient woodland or existing populations of old trees, and where planting will not be detrimental to existing wildlife interest. In Ryedale, suitable conditions occur in the Howardian Hills, Tabular Hills and the Jurassic foothills of the Wolds.

# Wood Pasture, Parkland and Veteran Trees

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## 3. Action plan objectives

- Encourage and assist conservation of veteran trees, and conservation management of wood pasture habitats throughout the district.
- Disseminate specialist skills and good practice in the management of veteran trees.
- Encourage propagation of saplings from local veteran trees in order to conserve the gene pool of ancient open-grown trees.
- Support creation of new wood pasture/parkland in appropriate locations where this offers long-term opportunities to establish wildlife-rich habitat.
- Increase our knowledge of the wildlife associated with old trees in Ryedale, to improve decision-making and advice to land managers.

## 4. Current action

A UK Action Plan for lowland wood pasture and parkland has been published. This aims to secure favourable management of key sites, restore derelict sites to favourable ecological condition and expand the UK resource of parkland and wood-pasture by 500 ha. in appropriate areas.

In recent years the Veteran Tree Initiative has raised awareness of ancient trees and developed an extensive body of expertise concerning their management. A Veteran Tree Handbook has been published.

Castle Howard Forest Nursery propagates stock from native trees in Ryedale and neighbouring areas including veteran oaks. A large number of saplings have been grown from acorns from the Mowbray Oak at Slingsby as a private initiative, and these have been used in a number of local planting schemes.

Locally native ash and oak have been planted to ensure continuity of open grown trees in the Rye valley at Sproxton, close to the Duncombe Park National Nature Reserve. This has been undertaken as part of the River Rye Conservation Project in co-operation with the landowners. Environmental Stewardship (ES) offers funding for conservation management of parkland landscapes but at present only one historic park in Ryedale is managed under

this scheme. Discretionary funding for wildlife and landscape enhancement is available within the Howardian Hills Area of Outstanding Natural Beauty.

## 5. Proposed action

- Carry out conservation management at four veteran tree/wood pasture sites by 2009, e.g. planting of new open-grown trees, protecting ancient trees and planting native shrubs as nectar/pollen sources (RDC, HHAONB, DEFRA).
- Raise awareness of veteran tree management amongst local arborists, tree surgeons, land managers and foresters by organising training events and visits to see successful practice. Hold one event in 2007 (RDC, HHAONB, FC).
- Provide discretionary grants for protection of isolated veteran trees, e.g. for fencing to prevent damage by livestock (RDC, HHAONB).
- Encourage the establishment of at least 5 ha. of new parkland/wood pasture habitat in appropriate locations in the district by 2009 (RDC, HHAONB).
- Commission surveys to gather information on the wildlife interest of veteran trees in Ryedale, in order to guide conservation management (HHAONB, RDC, FC, EN).
- Provide information boards at one key site on the importance of veteran oaks (HHAONB, RDC, Castle Howard Estate).

## 6. Links to other action plans

This Action Plan contributes to the UK Action Plan for lowland wood pasture and parkland.

## 7. Bibliography

UK BIODIVERSITY GROUP (1998). Lowland wood-pasture and parkland: a Habitat Action Plan. In: Tranche 2 Action Plans, Vol. II – terrestrial and freshwater habitats. English Nature: Peterborough.



# Ancient/Species-rich hedgerows

## 1. Introduction

Ancient hedgerows (those pre-dating the Parliamentary Enclosure period of ca. 1750 - 1850) are of wildlife, landscape and heritage importance. They can support a wide range of plants, birds, mammals and invertebrates, especially where there is a high diversity of shrub species and other features such as old trees. Some are linked to ancient woodland and support wildflowers such as bluebell and primrose in the hedge bottom.

Ancient hedgerows are often associated with historic landscape features such as country lanes, Parish boundaries or the former boundaries of ancient woodland. In Ryedale, ancient hedgerows are concentrated in the Howardian and Tabular Hills and the foothills of the Yorkshire Wolds. There are few ancient and/or species-rich hedgerows in the Vale of Pickering or in the Ryedale Wolds. It has been estimated that 42% of British hedges are ancient and/or species-rich but the proportion in Ryedale may be much smaller.

Old, species-rich hedgerows are also associated with small field systems around settlements. A good example is the Crofts at Flaxton, where narrow strip fields were enclosed in the mid 17th century. Occasionally, Enclosure period field hedges are species-rich perhaps because of linkages to ancient hedge systems or woodland, or because other features such as ditch banks have encouraged colonisation by a variety of species.

The wildlife value of ancient/species-rich hedgerows in Ryedale is poorly recorded. Hedgerow trees provide nesting sites for barn owls or tree sparrows, although these are not necessarily associated with ancient hedges. The nationally scarce small egg moth has a stronghold in the district, where its caterpillars spin webs in blackthorn hedges. Single native black poplars grow in two hedges in the district. This tree is rare as a native species.

Although it has been estimated that 21% of all hedgerows were lost in England between 1984 and 1990, we have no accurate figures for Ryedale. In recent years, there has been a dramatic reversal of hedgerow loss with far more hedges being restored or replanted than being removed. This is largely

due to incentives available under the old Countryside Stewardship Scheme and now Environmental Stewardship, as well as increased environmental awareness amongst land managers.

## 2. Conservation issues

Factors leading to the loss or deterioration of all hedgerows have included removal for field enlargement or building development; spraying, ploughing or grazing into hedge bottoms; and unsympathetic cutting. Traditional management such as laying has largely been abandoned in favour of mechanical trimming.

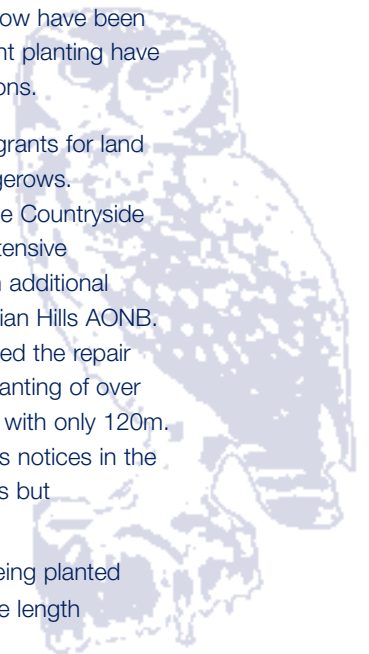
Hedgerow trees are of conservation value in their own right and provide habitat for species such as barn owl, tree sparrow and bats. Old trees associated with ancient hedgerows are likely to be of special value, particularly in Ryedale where 'post mature' trees are rare within woodland. Dutch elm disease caused the loss of many hedgerow elm trees in the 1960s and '70s.

The Hedgerow Regulations (1997) protect historic and species-rich hedges. Of 46 applications to remove hedgerows received by Ryedale District Council, 10 Hedgerow Retention Notices have been issued, mostly on the basis of historic interest. Since June 1997, 10.7 km. of hedgerow have been removed whilst 1.4 km. of replacement planting have been carried out under these regulations.

Environmental Stewardship provides grants for land managers to replant and restore hedgerows. The previous agri-environment scheme Countryside Stewardship has encouraged very extensive restoration of hedges in Ryedale, with additional grant aid also available in the Howardian Hills AONB. New agreements in 2002 alone involved the repair or restoration of over 9.75 km. and planting of over 6 km. of new hedges<sup>4</sup>. This contrasts with only 120m. removed under Hedgerow Regulations notices in the same year. These are minimum figures but indicate that:

- The length of new farm hedges being planted each year now greatly exceeds the length being removed.

<sup>4</sup>includes hedge planting funded by the Howardian Hills AONB Project



# Ancient/Species-rich Hedgerows

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- The length of hedgerows being restored annually is many times the amount being removed.

Commercially grown hedging plants are often imported or grown from Continental seed. Local-origin shrubs are preferable on ecological grounds (e.g. timing of flowering in relation to insect activity) and likely to be better adapted. Although production of local origin hedgerow shrubs has increased, this is still on a relatively small scale.

We have little idea of whether or not the number of hedgerow trees has declined in Ryedale. It would be useful to assess trends in the number and distribution of hedgerow trees.

### 3. Action plan objectives

- Encourage the conservation of ancient/species-rich hedgerows throughout the district via a gri-environment schemes, provision of advice, practical assistance to land managers and the planning system.
- Encourage hedgerow management schemes which enhance and restore locally-characteristic hedgerow habitats and use locally-native species.
- Increase the availability of local origin hedgerow plants at affordable prices to land managers in Ryedale.
- Assess trends affecting the number of hedgerow trees in Ryedale.

### 4. Current action

A UK Action Plan has been published for ancient/species-rich hedgerows. This aims to halt the loss of such hedges, ensure the favourable management of 50% by 2005 and maintain the number of hedgerow trees in each County or district.

Environmental Stewardship provides grants for conserving and restoring rural hedgerows. Discretionary grants for hedge planting/ restoration are also available within the Howardian Hills AONB and recently within the wide Ryedale area.

Castle Howard Forest Nursery has increased production of trees and shrubs of locally-native provenance with assistance from the BTCV's

Yorkshire Hedgerow Campaign, which organises local seed gathering.

Through the Development Control process conditions are being applied to planning approvals for the retention of landscape features, including existing hedgerows that serve to enclose, enhance, or screen new developments in open countryside.

### 5. Proposed action

- Continue to encourage uptake of Environmental Stewardship options for hedgerow conservation and restoration, giving priority to ancient/species-rich hedges. Ensure that hedgerow management schemes use locally native species (DEFRA, FWAG, RDC, HHAONB).
- During 2007, assess means of expanding the propagation of locally-native hedgerow shrubs at affordable prices (BTCV).
- By 2008, assess trends affecting hedgerow trees in the district. If appropriate, identify means of encouraging the re-establishment of hedgerow trees in key areas (RDC, FC).
- Produce an information leaflet on hedgerow conservation aimed at land managers in Ryedale with advice on appropriate species for different soil types and Natural Areas, establishment and management practices and sources of grant aid (RDC, HHAONB).
- Continue to work through the Development Control process to help protect and enhance ancient/species-rich hedges.

### 6. Links to other action plans

Successful implementation of this Action Plan will support the local Action Plans for farmland birds and wildlife in towns and villages. It will also contribute to the UK Action Plan for ancient/species-rich hedgerows.

### 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Costed Habitat Action Plan for ancient and/or species-rich hedgerows. In: Biodiversity: the UK Steering Group Report. Volume 2: Action Plans. HMSO: London.



# Neutral Grassland

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## 1. Introduction

This Action Plan covers herb-rich grassland on clay or loam ('neutral') soils. This includes old, unfertilised meadows and pastures as well as some churchyards and road verges. Unimproved neutral grasslands support characteristic wildflowers such as pignut, great burnet, birdsfoot trefoil, lesser stitchwort and betony along with grasses such as red fescue, sweet vernal grass and meadow barley.

Herb-rich meadows would have been common in Ryedale during the first half of the 20th century. The vast majority of this habitat has been changed to arable or converted to more productive ('improved') grassland. Some losses have also resulted from building development. Both nationally and locally, 'unimproved' neutral grassland is one of our most threatened habitats. In Ryedale, once widespread wildflowers like adderstongue fern and green-winged orchid are now very rare as a result. The district resource of herb-rich neutral grassland is currently estimated to be as little as 26 hectares.

Some neutral grassland is dominated by tall grasses such as false oat but still contains a wide variety of meadow plants. This occurs mainly in churchyards and on road verges.

Species-rich neutral grassland is identified as a Priority Habitat in the UK Biodiversity Action Plan, covered by the Action Plan for lowland meadows.

## 2. Conservation issues

Both locally and nationally, herb-rich neutral grassland has greatly decreased since World War II as a result of changing farming practices. Large areas have been converted to arable or reseeded with more productive grasses and maintained with artificial fertilisers to support intensive grazing or silage production.

In Ryedale, remnants of herb-rich neutral grassland survive in a few unimproved hay meadows and pastures. These are mainly SSSIs, small fields which have been difficult to manage more productively or meadows which have been conserved by land owners for their aesthetic and wildlife value. A significant area survives on common land at Flaxton Village Green.



*Betony*

Current threats include continued agricultural improvement (one SSSI is threatened by repeated slurring), neglect, tree planting and urban or recreational development. Fragmentation is also a serious problem in Ryedale, with sites being small and isolated. Some characteristic plants such as adderstongue fern and lousewort are now confined to just one or two locations in the district and in danger of local extinction. In many Parishes, the only remaining herb-rich grassland is on road verges or in churchyards.

In the past, some rural road verges were cropped for hay or grazed by 'tented' livestock. Nowadays, only a handful of wide lane verges are cut for hay or grazed by tethered ponies. Flail mowing of road verges encourages coarse grasses but conservation hay-cutting is costly and labour intensive.

Traditional management of churchyards consisted of scything for hay and/or sheep grazing. Very few churchyards are now managed in this way. Conservation hay cuts are now taken in several churchyards in the district but this is a labour-intensive and costly unless local volunteers are available.

# Neutral Grassland

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Several old hay meadows in the district have not been intensively improved but are dressed with nitrogen fertiliser. Whilst these retain some ecological interest, regular fertiliser applications nonetheless result in a decline in botanical diversity. ES regulations have recently been reviewed to allow occasional manuring of hay meadows, which may encourage more farmers to enter the scheme (dressing with well-rotted farmyard manure has been shown to be far less detrimental to botanical diversity than use of artificial fertilisers).

Herb-rich meadows have often developed over hundreds of year and are irreplaceable. As well as a rich diversity of plantlife and associated invertebrates, such meadows often have historic interest. Some plants and invertebrates characteristic of old unimproved grassland have poor dispersal capabilities and are therefore unlikely to colonise new habitats.

Nonetheless, re-creation of herb-rich grassland is the only means of restoring this habitat beyond the few surviving fragments. Agri-environment schemes now provide incentives to re-create grassland on arable land. These schemes are relatively short-term (e.g. ten year agreements under ES) but it will take several years of detailed management to begin to establish a herb-rich sward. Unfortunately, many arable reversion grasslands do not fulfil their conservation potential because of unsuitable site conditions, inappropriate seed mixtures or insufficient advisory support.

There are also opportunities to restore the wildlife interest of grasslands which have been damaged by unfavourable management in the past.

Local-origin wildflower seed should be used during habitat re-creation, in order to conserve local genetic variation. This is difficult to obtain in adequate quantities and a local seed harvesting scheme would be of major benefit to land managers wishing to restore herb-rich grassland.

## 3. Action plan objectives

- Ensure that as much as possible of the herb-rich neutral grassland including farmland, roadside verges and churchyards remaining in Ryedale is maintained in a favourable condition.
- Encourage the restoration of herb-rich grassland on sites such as farmland, roadside verges and churchyards, which have lost some of their ecological interest but have potential for recovery.
- Encourage re-creation of herb-rich meadows, preferably using local seed sources, especially close to existing unimproved grassland.

## 4. Current action

A UK Habitat Action Plan for lowland meadows covers all types of species-rich neutral grassland (except grazing marsh). This aims to: halt the loss of unimproved meadows; restore all SSSI meadows which are in poor condition; ensure that 30% of unimproved meadows outside SSSIs are in favourable condition by 2005 (with as many as possible by 2015); and re-establish 500 ha. of lowland meadow at targeted locations by 2010.

Several species-rich grassland sites in Ryedale are managed under ES or SSSI agreements. Several churchyards in Ryedale containing old meadow grassland have conservation management plans.

Work is underway to restore the ecological interest of one neutral grassland site near Terrington, by planting using local-origin plants and seed matched to the former vegetation type. Work to re-establish herb-rich grassland under ES agreements is either planned or underway on several farms in Ryedale, including land on the Derwent floodplain.

The feasibility of establishing a local seed-harvesting business covering north-east Yorkshire is currently being assessed.

# Neutral Grassland

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## 5. Proposed action

- Ensure that as many as possible of the remaining unimproved neutral grasslands in Ryedale are in favourable condition and managed under conservation agreements by 2009 (EN, RDC, HHAONB, FWAG, NYCC).
- Promote restoration of neutral grasslands which have lost some of their wildlife value due to unfavourable management or neglect in the past. This may include restoration of grazing/mowing on neglected sites, or the use of local-origin plants or seeds to recover botanical diversity. Carry out restoration work on 5 ha. by 2009 (DEFRA, RDC, HHAONB, NYCC).
- Aim to re-create 20 hectares of herb-rich meadow or pasture in Ryedale by 2012 through agri-environment schemes and the use of locally-native seed sources (DEFRA, RDC, FWAG, NYCC).
- Identify and record the most species-rich roadside verges.
- Identify and implement appropriate management for the most important verges such as restoration of conservation mowing.

## 6. Links to other action plans

This Action Plan will contribute to the UK Habitat Action Plan for lowland meadows.

## 7. Bibliography

UK BIODIVERSITY GROUP (1998). Tranche 2 Action Plans. Vol. II – terrestrial and freshwater habitats. English Nature: Peterborough [UK Action Plan for lowland meadows].



# Chalk and Limestone Grassland

## 1. Introduction

Semi-natural grasslands on calcareous soils support a distinctive flora of lime-loving plants. In Ryedale such grasslands survive in small areas on the Jurassic limestone of the Howardian and Tabular Hills – mainly on steep banks, at the edges of woods, in disused quarries or on road verges. More extensive areas occur on valley sides and scarp slopes on the Yorkshire Wolds, representing the most northerly chalk grasslands in Britain.

Characteristic plants of chalk and limestone grassland include rockrose, thyme, small scabious and pyramidal orchid. Species of more localised occurrence include saw-wort, woolly thistle, autumn gentian and fragrant orchid. A few sites also support regionally or nationally uncommon plants like bloody cranesbill, frog orchid, perennial flax and the very rare thistle broomrape. A number of uncommon annual plants grow on chalk scree.



Marbled White on Field Scabious

Within the district there are a range of calcareous grassland types. These include sparse, open vegetation associated with rock outcrops or skeletal soils through species-rich swards of well-grazed dale slopes to taller vegetation dominated by coarse grasses such as upright brome and tor grass.

Chalk and limestone grasslands in Ryedale support a wide range of uncommon invertebrates including butterflies and moths like the marbled white, brown argus, cistus forester and chalk carpet. Nationally scarce insects include the leaf beetle *Cryptocephalus aureolus* and the pollen beetle *Meligethes brevis*, both of which feed on rockrose. Open habitats like disused quarries also support a distinctive invertebrate fauna including scarce species such as the ground beetle *Licinus depressus* and the wolf spider *Alopecosa cuneata* although the current status of others such as the heath snail *Helicella itala* and the glow-worm is uncertain. Chalk grassland adjoining arable provides habitat for grey partridge.

It is estimated that there are between 300 and 320 hectares of chalk and limestone grassland in Ryedale. This represents around 0.8% of the UK resource and about 1% of UK chalk grassland.

Lowland calcareous grassland is identified as a Priority Habitat in the UK Biodiversity Action Plan. It is also of special local importance as a characteristic and ancient feature of the Ryedale countryside.

## 2. Conservation issues

Although significant areas of unimproved calcareous grassland survive in Ryedale, this is a threatened habitat because of extensive losses in the past and continuing reduction in habitat quality on some sites.

In the Yorkshire Wolds as a whole, 35% of chalk grassland outside of Sites of Special Scientific Interest was estimated to have disappeared or deteriorated in botanical quality during the 1980s. There have been few losses of unimproved chalk grassland since 1990 in Ryedale and conversion to more intensive agricultural use is probably no longer a major issue. The most significant current threats to the biodiversity of chalk and limestone grassland in Ryedale are now considered to be:

# Chalk and Limestone Grassland

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**Fragmentation:** the small size and isolation of limestone grasslands in the Howardian Hills and northern Ryedale makes them vulnerable with little chance of re-colonisation if species disappear. Some sites are too small or isolated to graze with farm stock and require active conservation management. Fragmentation is less severe on the Wolds, though in some valleys unimproved grassland is now restricted to small patches.

**Scrub encroachment:** thickets of hawthorn and gorse are a long-established feature of the Wolds valleys and have wildlife value in their own right but scrub invasion has increased due to changes in grazing patterns. Once closed scrub develops, clearance will often result in weed vegetation rather than herb-rich grassland. Since the introduction of Countryside Stewardship (CSS) in 1991, scrub encroachment has been reversed but remains a serious problem on several important sites.

**Tor grass invasion:** tor grass is a native chalk grassland plant but has greatly increased on many sites in Ryedale. Its dense, unpalatable growth suppresses other plants, creating a very species-poor sward. It is known to be encouraged by increased nitrogen levels but changes in grazing patterns are probably equally important. Reversing tor-grass invasion will require additional incentives to encourage targeted spring grazing, or a conservation grazing scheme using hardy native stock (Exmoor Ponies have been found to be effective in controlling tor grass).

The Countryside Stewardship Scheme (CSS) has been widely taken up on the Wolds, and CSS or SSSI agreements now cover most of the high quality chalk grassland. Grants for fencing and scrub control have helped make traditional grazing management more viable but the 2002 CSS payment rate for managing calcareous grassland was poor (£65/ha/yr), leading to some landowners not renewing their agreements.

Grazing has been abandoned on a few sites engulfed by scrub growth or on all-arable farms without livestock. By contrast, over-grazing by cattle is a localised problem in a few Wolds dales. Over-grazed swards can usually recover under favourable management but infestation of noxious weeds like ragwort and creeping thistle can be a problem.

Road verges are an important grassland resource on the chalk and limestone, although they support different flora to grazed pastures. On thin soils, such as on road cuttings and steep banks, occasional scrub control may be sufficient to maintain the grassland interest. On more fertile verges, flail mowing is less than ideal but conservation management is costly and labour-intensive.

Re-creation of calcareous grassland is an important objective but requires detailed planning and management. There are considerable areas of CSS arable reversion grassland on the Yorkshire Wolds but few of these have succeeded in re-creating species-rich swards. Successful re-creation of calcareous grassland needs to focus on the most promising sites and should employ creative techniques such as using locally harvested seed or seed-rich cuttings. Practical assistance and support needs to be available to farmers entering schemes aimed at re-creating herb-rich grassland.

## 3. Action plan objectives

- Maintain the current extent of unimproved chalk and limestone grassland in Ryedale.
- Address threats to the wildlife quality of chalk and limestone grassland in Ryedale through provision of advice, grant-aid, practical support and voluntary agreements with land managers.
- Re-create calcareous grassland through agri-environment schemes and by providing practical assistance and support to land managers.
- Assess and implement opportunities to improve the management of road verges on the chalk and limestone in Ryedale for wildlife.



# Chalk and Limestone Grassland

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## 4. Current action

A UK Action Plan has been published for lowland calcareous grassland. This aims to arrest depletion of the habitat, improve the condition of lowland calcareous grassland inside and outside SSSIs and re-establish 1000 ha. at targeted sites by 2010.

Many chalk and limestone grasslands in Ryedale are already managed under CSS or SSSI agreements. Wharram Quarry SSSI is managed by the Yorkshire Wildlife Trust. Practical assistance with scrub management has been provided on several non-SSSI chalk grassland sites by Ryedale District Council and the BTCV.

North Yorkshire County Council is currently reviewing restoration plans for minerals sites to identify opportunities for habitat creation, including calcareous grassland.

A survey of road verges in the Howardian Hills AONB was undertaken in 1999 to identify sites of botanical importance. Several key verges have subsequently been brought into sympathetic management.

Conservation grazing using Exmoor Ponies has been successfully tested on one chalk grassland site in Ryedale and has therefore been extended to other sites.

## 5. Proposed action

- By 2010, ensure that as many chalk and limestone grassland sites as possible including farmland, roadside verges and churchyards, are in favourable management through agri-environment or SSSI agreements and practical assistance to land managers (DEFRA, EN, RDC, HHAONB).
- Implement restoration management of 10ha. of tor-grass dominated chalk grassland by 2009 (DEFRA, EN, RDC, land owners).
- Ensure that resources are available to manage scrub on calcareous grassland sites where this is a threat, including those not managed under agri-environment agreements (e.g. quarries and isolated banks). By 2012, effective management should be implemented at all such sites where land owners are agreeable (DEFRA, EN, RDC, HHAONB).
- Ensure that a conservation grazing scheme is operational in Ryedale by 2008 so that suitable stock are available to graze neglected/under-grazed calcareous grassland sites (YEPT, HHAONB, RDC).
- Aim to re-create at least 10 hectares of herb-rich calcareous grassland on arable land or mineral sites by 2012. This will require detailed ecological assessment and the use of locally-native seed sources or natural regeneration (NYCC, HHAONB, RDC, DEFRA).
- Ensure that as many as possible floristically-rich road verges are in favourable management by 2012 (NYCC, HHAONB).



# Chalk and Limestone Grassland

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## 6. Links to other action plans

This Action Plan complements the UK Action Plan for **lowland calcareous grasslands**. It also complements the local Action Plans for **knapweed broomrape** and **red hemp-nettle**. An English Nature Species Recovery Plan for thistle broomrape includes the Ryedale population of this species.

## 7. Bibliography

UK BIODIVERSITY GROUP (1998). Tranche 2 Action Plans. Volume II – terrestrial and freshwater habitats. [Habitat Action Plan for lowland calcareous grassland] English Nature: Peterborough.



*Pyramidal Orchid*



# Acidic Grassland

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## 1. Introduction

Acidic grasslands are characterised by plants requiring lime-deficient soils. In Ryedale, acidic grassland occurs very locally in the Howardian Hills, along the southern edge of the Vale of Pickering and on pockets of very leached ground (usually on north-facing slopes) in the Yorkshire Wolds.

Acidic grassland is widespread in the upland fringes of Britain but scarce and localised in lowland England. In Ryedale, only a few hectares remain. Pockets of acidic grassland on valley slopes in the Wolds are difficult to define and are considered under the Habitat Action Plan for chalk and limestone grassland.

In the Howardian Hills, small fragments of acidic grassland occur over sandstone outcrops, often amongst mosaics of other semi-natural vegetation. Examples also occur on the verges of forest rides and on long-established sandy set-aside. Typical plants include sheep's sorrel, tormentil, heath bedstraw and wavy hair-grass. More species-rich examples include mouse-ear hawkweed, heath speedwell, betony, bitter vetch and devilsbit scabious.

In the Vale of Pickering, small areas of acidic grassland occur very locally on the verges of the A64 and in sandy horse paddocks. Associated species include bugloss, knotted clover, haresfoot clover and silver hair-grass. In one or two very sandy set-aside fields, the vegetation is dominated by small annuals such as thyme-leaved sandwort, storksbill, birdsfoot, haresfoot clover and the rare dense silky-bent. This rare type of vegetation is mainly found in the Breckland district of East Anglia and in North Lincolnshire. Associated with drought-prone sands in areas with relatively low rainfall, this is the nearest British equivalent to the Steppe vegetation of eastern Europe.

The fauna of acidic grassland in Ryedale is poorly recorded but open sandy areas are valuable for various warmth-loving invertebrates such as the green tiger beetle and various bees and wasps. Birds such as green woodpecker forage on acidic grassland and this habitat could potentially support woodlark, a UK BAP Priority Species which has recently recolonised southern Ryedale.

Lowland dry acidic grassland is identified as a Priority Habitat in the UK Biodiversity Action Plan.

## 2. Conservation issues

Acidic grassland is a rare and threatened habitat in Ryedale. Some small areas are in favourable condition but fragments in the Howardian Hills are vulnerable to scrub encroachment due to lack of regular grazing. Sandy set-aside with annual-rich vegetation is of special biodiversity interest but could easily be brought back into agricultural production.

High priority should be given to conserving existing remnants of this habitat. However, there is considerable potential for re-creating acidic grassland on suitable soils where productivity is limited by poor nutrient retention, low pH or drought. The arable reversion option of ES may provide opportunities but the most suitable sites have been retained as set-aside.

Other competing demands on land use include turf growing and conifer planting. It seems likely that either competitively funded management agreements or lease/purchase of land by conservation bodies would be necessary for the restoration of acidic grassland on a significant scale. This would require ongoing management, such as sheep or rabbit grazing.

In the past, disused sand pits in the Vale of Pickering were important for specialised flora and invertebrates. These have mainly been reclaimed for agricultural use or converted to caravan sites. There may be some potential for re-creation of acidic grassland as part of the restoration of working sand quarries in the district. Site managers need to be made aware of the conservation value of open sandy habitats, as opposed to more conventional restoration options.

The proposed Rillington bypass could provide opportunities to re-create this habitat along road verges or through environmental mitigation schemes. This would depend on careful planning and management.



# Acidic Grassland

A number of plants associated with acidic grassland have become extinct in Ryedale including field gentian, smooth catsear and maiden pink. Several uncommon species associated with open sandy grassland or heathy habitats survive in the district only as small populations at one or two locations including small cudweed, heath cudweed, heath milkwort and rough clover.

### 3. Action plan objectives

- Conserve existing areas of acidic grassland in Ryedale in favourable condition.
- Re-create acidic grassland on suitable sites in order to enlarge the small, threatened and fragmented local resource of this habitat.
- Secure long-term conservation management of at least one site with species-rich annual vegetation on the Vale of Pickering sand belt.

### 4. Current action

North Yorkshire County Council is currently undergoing a review of restoration schemes for active mineral sites. This will identify opportunities for restoration of key habitats, including acidic grassland.

A UK Habitat Action Plan has been published for lowland dry acidic grasslands. This aims to arrest loss of the habitat, restore areas which are in unfavourable condition and re-establish 500 ha. on targeted sites by 2010.

### 5. Proposed action

- Encourage sympathetic management of existing acidic grassland sites through grant aid and advice; aim to bring as many sites as possible into favourable management by 2009 (RDC, HHAONB).
- Encourage the re-creation of acidic grassland on suitable sites through arable reversion or the restoration of mineral workings. By 2009, aim to re-create 1 ha. within the Howardian Hills AONB and 1 ha. in the Vale of Pickering, managed under long-term conservation agreements (DEFRA, RDC, HHAONB, NYCC).
- Raise awareness of the conservation value of annual-rich sandy grassland as a nationally rare habitat. Aim to secure long-term conservation management of at least one example of this habitat in Ryedale (RDC, FWAG, DEFRA, EN).

### 6. Links to other action plans

This Action Plan complements the UK Habitat Action Plans for lowland dry acidic grassland. Implementation of this Action Plan could benefit some farmland birds which use acidic grassland (e.g. skylark). Some threatened arable flowers also occur in annual-rich sandy grassland.

### 7. Bibliography

UK BIODIVERSITY GROUP (1998). Tranche 2 Action Plans. Vol. II – terrestrial and freshwater habitats. English Nature: Peterborough (UK Habitat Action Plan for lowland dry acidic grassland).





# Heathland

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## 1. Introduction

Heathland develops on impoverished, highly acidic soils subject to grazing. It is characterised by mixtures of heathers, bilberry, purple moor-grass and wavy hair-grass. Heathland once occurred quite widely on the sandstone plateaux of the Howardian Hills around Grimston and Coulton, in parishes fringing the North York Moors and in the south-west of the district. Map evidence suggests that there were around 256 ha. of heathland and acidic rough grazing at the beginning of the 20th Century.

No significant examples of open heathland survive in Ryedale, former areas having been lost either to agriculture or forestry. However, there are fragments of heath flora on woodland rides in the western part of the Howardian Hills. Most notably, part of Grimston Moor Plantation contains more or less intact heathland vegetation under 1960s pine plantations.

Areas of former heath in south western Ryedale once formed part of an extensive tract of sandy commons with characteristic lowland flora and fauna. The former biodiversity of heathland in the hill areas of Ryedale is largely unknown; sites in the Howardian Hills would probably have supported a mixture of upland and lowland species.

In England as a whole, only one one-sixth of the lowland heath present in 1800 now remains. In Ryedale the loss has effectively been total.

## 2. Conservation issues

The principal challenge is to restore heathland in Ryedale; the only site with real potential to do so is Grimston Moor.

Some heathland species would benefit from conservation management of woodland rides in plantations in the south of the district and in the Howardian Hills.

## 3. Action plan objectives

- To consider opportunities for heathland restoration at Grimston Moor Plantation and for enhanced management of forest rides with remnant heathland flora in the Howardian Hills and south-western Ryedale.



## 4. Current action

A UK Habitat Action Plan has been published for lowland heathland. This aims to maintain and improve the condition of existing lowland heath and re-establish a further 6,000 ha. (mainly in south and central England).

## 5. Proposed action

In 2007, assess opportunities for restoring open heathland at Grimston Moor. If appropriate, carry forward to the next revision of the Forest Design Plan (FC).

## 6. Links to other action plans

This Action Plan contributes to the UK Action Plan for lowland heathland. It could potentially benefit UK BAP Priority Species such as nightjar and woodlark. Heathland restoration would benefit some bumblebees (see Species Action Plan for bumblebees).

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995).  
Biodiversity: the UK Steering Group report.  
Vol. 2: Action Plans. HMSO. [Habitat Action Plan for lowland heathland]





# Wetlands

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## 1. Introduction

Ryedale contains a range of wetland habitats including:

- Floodplain swamps dominated by tall grasses such as reed sweet grass and streamside sedge swamps. Examples of floodplain swamp are found on the Derwent floodplain at Norton Ings, Kirkham Park and Howsham Park; streamside sedge swamps occur locally in the Howardian Hills and alongside chalk streams descending from the Wolds.
- Grazed or mown fen meadows with a rich mixture of sedges, rushes and wildflowers such as marsh valerian, fen bedstraw and ragged robin. The flora varies according to the acidity or alkalinity of the site. Fen meadows occur mainly in the Howardian Hills, where it associated with spring lines, and more locally on river and stream floodplains. There are about 29 ha. of fen meadow in Ryedale. Important examples include Dalby Bush and Coulton Beck fens, Hollin Hill fen, Jeffrey Bog and Wintringham Marsh.
- Tall herb fens develop on ungrazed wetlands and are dominated by species such as reed canary grass, common reed and meadowsweet. Amotherby Ings SSSI is former flood meadow which has developed into tall-herb fen and this habitat is also found at the Kelds (Ness) with smaller fragments elsewhere, often alongside ditches.
- Grazing marsh includes wet rushy pastures; once very widespread in the Vale of Pickering there are only a few remaining examples such as Keld Head pastures (Pickering).
- Reedbeds are restricted to lake margins at Castle Howard.
- Acidic peat mires occur very locally in the Howardian Hills at Hollin Hill, Gilling Fishponds and Terrington Carr. There are less than 2 ha. of this habitat remaining in Ryedale.

The total area of wetland habitats in Ryedale is only around 60 ha. Some sites, especially on floodplains, support a mixture of different components.

Over 95% of wetland habitat has been lost in Ryedale during the past 200 years; there were 2,000 to 3,000 acres (810 - 1215 ha.) of marshy land in the Vale of Pickering at the end of the 18th century. Losses have mainly resulted from agricultural reclamation with other factors including river engineering and afforestation.

Nonetheless, wetlands are still enormously important for biodiversity in Ryedale. They support a huge range of invertebrates including over 25 nationally rare or scarce beetles and flies. Floodplain swamps support breeding reed bunting (a UK BAP Priority Species) and wintering flocks of Snipe. Purple moor-grass fen meadows (represented at Coulton and Wintringham Marsh) are a habitat of European conservation concern. Reedbeds, grazing marsh, fens and purple moor-grass/rush pastures are identified as Priority Habitats in the UK Biodiversity Action Plan. Wetlands also have important functions in relation to flood management.

## 2. Conservation issues

Conservation of remaining wetland habitats in Ryedale is a challenging task. They are of little agricultural value and often difficult to manage. Sites are often small, isolated and vulnerable to the effects of surrounding land use.

Loss of wetland habitats has resulted in the disappearance of plants such as greater water-parsnip, frogbit and birdseye primrose. 40% of plant extinctions in the district since 1800 have been species associated with fens, swamps and mires including several which are now nationally threatened. Snipe, once a common breeding bird in Ryedale, is now reduced to a handful of nesting pairs, whilst redshank is probably extinct as a local breeding species.

Fen meadows and grazing marshes have been managed historically by seasonal grazing with cattle and sheep or, to a lesser, extent by hay-making and litter cropping. Nowadays these habitats are of marginal use for livestock grazing. In the case of small valley fens, the cost and inconvenience of fencing and checking on stock often outweighs forage value. Consequently several such sites are no longer managed. This may not be detrimental in the short term, but in the long term results in scrub encroachment and the dominance of a few vigorous grasses or rushes, no longer kept in check by grazing. Conversely, a few more accessible sites are over-grazed. In one instance this has led to the replacement of fen meadow by species-poor vegetation dominated by soft rush.

An additional problem in seepage fens is that boggy flushes pose a hazard to livestock used to grazing on improved pastures. This has led to occasional loss of cattle, which is unacceptable from an economic and animal welfare point of view. Grazing by hardy native breeds adapted to wetland conditions may provide an alternative means of management. Use of Exmoor ponies to graze small fens is currently working well in the Howardian Hills AONB.

Opportunities exist to restore nutrient-rich fen and wet grassland habitats on river floodplains, e.g. as part of flood defence schemes or through reversion of unprofitable arable land under Environmental Stewardship. However, it is often difficult to restore the hydrology of drained soils and few arable reversion sites have the potential to support key wet grassland species such as breeding waders. Opportunities may arise to create new wetlands during the restoration of mineral extraction sites. Detailed ecological input is needed to ensure that these are suitably planned.

Opportunities to restore lowland peat bog are very limited but a trial project in the Howardian Hills has

### 3. Action plan objectives

- Maintain the diversity and extent of wetland habitats in Ryedale.
- Ensure that as many wetland sites as possible are in favourable management.
- Encourage the restoration of appropriate wetland habitats through agri-environment schemes and mineral site restoration.
- Recover wet grassland breeding bird populations in the district.

### 4. Current action

Five Sites of Special Scientific Interest in Ryedale are designated mainly for their fen habitats. Several non-statutory Sites of Importance for Nature Conservation have been identified mainly or partly for their wetland interest. Several sites containing fen habitat are managed under ES or SSSI agreements.

A trial project has begun to restore lowland bog vegetation on 0.2 ha. of wet peat in the Howardian Hills. After promising initial results, this is now being expanded to cover 1.8 ha.

Management work has been undertaken on parts of Coulton Beck and Bulmer Beck fens on behalf of the landowners. Grazing has been restored on a small mire near Terrington and is planned at one other valley fen site in the Howardian Hills AONB.

An entomological survey of spring-fed fens in Ryedale was undertaken in 2000. This identified an outstandingly rich assemblage of flies, including many nationally rare or scarce species.

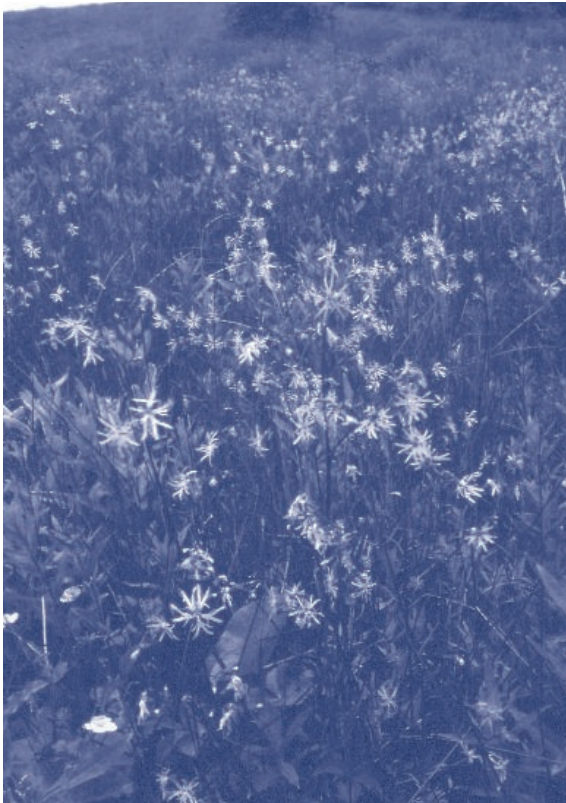
One substantial scheme to create wet grassland on former arable land in the west of the district has been accepted for ES funding. This project offers a significant opportunity to restore breeding populations of wet grassland birds in the district. Scarborough Borough Council is involved in a major scheme to restore grazing marsh at Star Carr near Flixton in the eastern Vale of Pickering.

# Wetlands

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North Yorkshire County Council is currently reviewing opportunities for habitat creation during the restoration of consented mineral workings, including wetland creation at appropriate sites.

Norton Wildlife Watch have used Norton Ings (owned by Ryedale District Council) as an educational resource, raising awareness of the environmental importance of floodplain habitats.



## 5. Proposed action

- Ensure that as many wetland sites in Ryedale are in favourable management through agri-environment or other agreements, provision of advice and practical assistance to land managers (e.g. mowing, fencing, scrub control) (EN, RDC, HHAONB, FWAG).
- Continue to develop a conservation grazing scheme to manage fens in the Howardian Hills AONB, and consider whether this might be extended to other sites in Ryedale which cannot be grazed by farm livestock (HHAONB, YEPT, RDC).
- Assess opportunities for creating wetland habitats (fen, swamp, reedbed, grazing marsh) during the restoration of mineral extraction sites in Ryedale (NYCC).
- Monitor progress in restoring peat bog habitat at the trial site in Howardian Hills and consider whether reintroduction of former plant species is appropriate in 2007 (HHAONB, RDC).

## 6. Links to other action plans

This Action Plan contributes to the UK Action Plans for grazing marsh, purple moor grass and rush pastures and fens.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group report. Vol. 2: Action Plans. HMSO. [Habitat Action Plans for coastal and floodplain grazing marsh & purple moor grass and rush pastures]



# Mesotrophic Lakes

## 1. Introduction

Mesotrophic lakes are moderately fertile with clear water and diverse aquatic vegetation. They are scarce in lowland eastern England, partly because of the natural character of water catchments but also due to the prevalence of pollution (agricultural run-off, sewage effluent and atmospheric deposition).

In Ryedale, Lower Park Fishponds near Gilling are small mesotrophic lakes in an afforested valley. These were created originally as part of the 18th century Gilling Park. The more acidic upper lake supports Sphagnum mire around the inflow and aquatic flora including various-leaved pondweed, alternate water-milfoil and bladderwort. The lower lake is more calcareous with fringing sedges, reedmace and club-rush.

The Reservoir Pond at Castle Howard Arboretum is a recently-restored, spring-fed parkland lake with meso-eutrophic conditions. This supports aquatic vegetation of small pondweed, fan-leaved water crowfoot and stonewort with fringing beds of bogbean and bottle sedge.

Mesotrophic standing waters in Ryedale support a rich invertebrate fauna due to their diverse vegetation and unpolluted water. Communities of aquatic beetles and bugs are particularly notable. Rarities include the whirligig beetle *Gyrinus distinctus*, the aquatic weevil *Eubrychius velutus* and the reed beetles *Donacia cinerea* and *Donacia impressa*. Other wildlife interest includes large amphibian populations (including great crested newt at one site).

Mesotrophic standing waters are identified as a Priority Habitat in the UK Biodiversity Action Plan.

## 2. Conservation issues

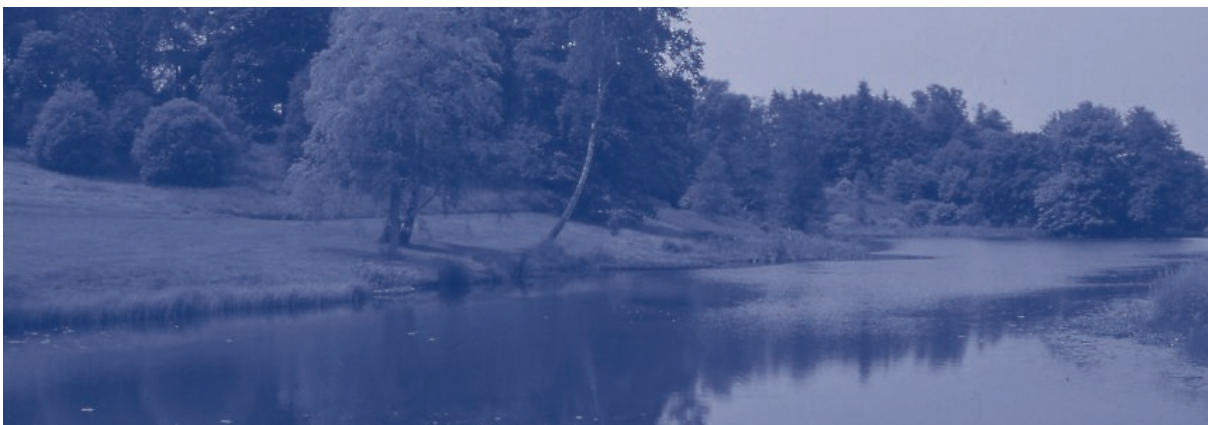
General threats to mesotrophic lakes include enrichment from agricultural run-off or sewage effluent, fouling by grain-fed ducks and stocking with high densities of coarse fish such as carp and bream. None of these factors are significant in Ryedale at present.

The extensively wooded catchment of Lower Park Fishponds is beneficial in maintaining water quality. The Reservoir Pond has recently been restored and the development of Castle Howard Arboretum has converted former agricultural land within the lake catchment to parkland.

There may be occasional opportunities for creating new mesotrophic water bodies as part of the restoration of mineral workings, especially where sites are isolated from eutrophication.

## 3. Action plan objectives

- Mesotrophic lake habitats in Ryedale should be maintained in favourable condition through avoidance of nutrient-enrichment, sympathetic catchment land use and appropriate fishery management.
- Appropriate opportunities should be considered for the creation of new mesotrophic water bodies, e.g. through restoration of mineral workings.



# Mesotrophic Lakes

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## 4. Current action

A UK Action Plan for mesotrophic lakes has been published. This aims to maintain their characteristic plant and animal communities and to redress nutrient-enrichment of polluted examples by 2010.

North Yorkshire County Council are currently reviewing opportunities for nature conservation in the restoration of mineral workings. This may include opportunities for creating new areas of mesotrophic standing water.

## 5. Proposed action

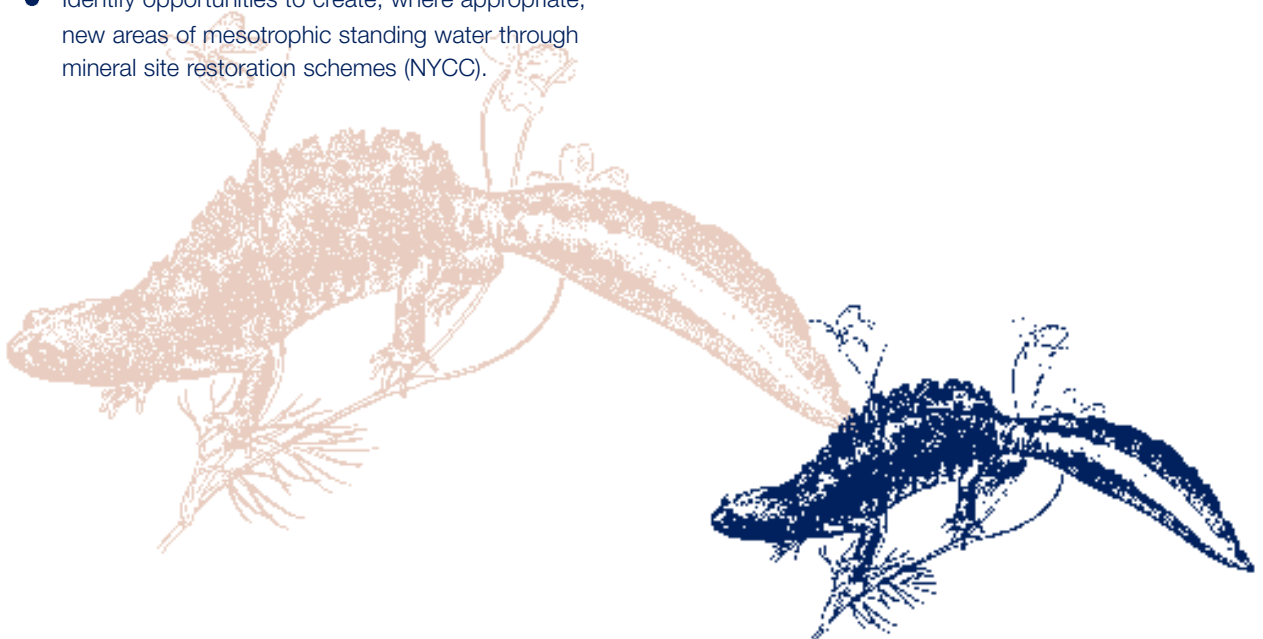
- Raise awareness of the conservation value of mesotrophic lakes, especially amongst land owners and those managing land within lake catchments. Support sympathetic management of mesotrophic lake catchments and reduction in nutrient inputs where applicable (HHAONB, FC, DEFRA).
- Ensure that fisheries guidance and licensing takes account of the ecological value and sensitivity of mesotrophic lakes (EA).
- Establish a monitoring programme for water quality in mesotrophic lakes to establish baseline data (EA, RDC).
- Identify opportunities to create, where appropriate, new areas of mesotrophic standing water through mineral site restoration schemes (NYCC).

## 6. Links to other action plans

This Action Plan should be considered in conjunction with the UK Action Plan for mesotrophic standing waters and the local and UK Action Plans for great crested newt.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group report. Vol. 2: Action Plans. HMSO. [Habitat Action Plan for mesotrophic lakes]







# Arable Field Margins

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## 1. Introduction

The margins of arable fields are of crucial importance to many farmland species such as grey partridge, hare, bumblebees and threatened arable flowers. In the past, some of these species would have occurred throughout the cropped area but intensive farming methods have tended to push them towards the edges of the fields. Agri-environment schemes now encourage restoration and enhancement of arable field margin habitats.

Field margins provide a range of ecological resources. Perennial cover such as sown ES margins and natural vegetation alongside boundaries provides shelter, food and breeding habitat for birds and mammals. It also harbours predatory invertebrates such as ground and rove beetles which are economically-important predators on crop pests such as field slugs and aphids. Sown or naturally-regenerated perennial

vegetation in arable field margins also helps buffer adjoining habitats such as watercourses, ponds, hedges, woodland or herb-rich grassland against the effects of soil erosion, spray drift and fertiliser leachate.

Conservation headlands with reduced pesticide inputs allow non-invasive weeds to survive, providing seeds and chick-food invertebrates for farmland birds, whilst the ES option for annually cultivated un-cropped margins could assist the survival of rare arable flowers, especially on sandy or calcareous soils.

This Action Plan mainly addresses arable field margins and conservation headlands but also covers other conservation opportunities in arable farmland such as beetle banks (perennial grass balks crossing fields) and wildlife refuges within the cropped area.



# Arable Field Margins

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## 2. Conservation issues

Environmental Stewardship encourages farmers to integrate wildlife conservation with profitable crop production. As well as compensating farmers for the loss of crop yield involved, positive management of field margins helps protect adjoining habitats such as watercourses, woodland and hedges, thus providing wider environmental benefits.

Appropriate management of arable field margins could potentially benefit a wide range of nationally or locally threatened farmland species. At Manor Farm, Eddlethorpe, for example, creation of extensive grass and wildflower margins (together with other conservation management) has resulted in the colonisation of barn owl, grey partridge and marbled white butterfly, a significant increase in songbird populations as well as demonstrable benefits to small mammals, predatory beetles and bumblebees.

Annually cultivated un-cropped margins offer major benefits to wildlife. These are most appropriate on poor sandy or calcareous soils where scarce arable flowers often occur and invasive weeds such as cleavers, sterile brome, couch and black grass are less prevalent. Annually cultivated un-cropped margins are also likely to benefit declining farmland birds such as grey partridge, corn bunting and skylark by providing abundant seeds and invertebrates, including winter seed sources. However, uptake of this option under Environmental Stewardship has been low and farmers remain concerned about weed control.

## 3. Action plan objectives

- Promote the creation of arable field margin habitats through ES and encourage management to benefit biodiversity. Increase the amount of annually-cultivated un-cropped margin in appropriate sites.
- Disseminate good practice, offer training and advice and make results of scientific research accessible to those involved in creating and managing arable field margin habitats (e.g. farmers/farm managers, agronomists, game keepers, seed merchants and conservation advisors).

## 4. Current action

A UK Action Plan for cereal field margins has been published. This aims to improve the biodiversity of 15,000 ha. of arable field margins by 2010.

ES currently offers ten-year agreements for farmland conservation schemes including the creation of beetle banks, management of conservation headlands, sowing of wildlife seed crops, management of un-cropped field margins and six-metre or two-metre perennial grass strips.

Much research into the ecology of arable field margins has been undertaken nationally. Within Ryedale, the Centre for Ecology and Hydrology has been involved since 1999 in monitoring arable field margins and other habitats at Manor Farm, Eddlethorpe on behalf of the Farmed Environment Company. Also in Ryedale, ADAS have monitored un-cropped, cultivated margins on a farm at West Heslerton as part of a national project examining the value of such habitats for threatened arable flora. Field visits for land managers have been held as part of this project.

A number of agencies can advise land managers about creating and managing arable field margins in Ryedale and help with grant applications. These include FWAG, the Howardian Hills AONB Project and the District Council.

The River Rye Conservation Project has resulted in successful ES applications including the creation of several kilometres of six-metre grass margins along the river corridor. The Project was a joint initiative between the Howardian Hills AONB Project, Ryedale District Council, the Environment Agency and English Nature.

A seminar on the management of arable field margins for wildlife was attended by 100 farmers, agronomists, gamekeepers and farm advisors in February 2002. This was organised by Ryedale District Council and FWAG.

# Arable Field Margins

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## 5. Proposed action

- Organise further training events for land managers, including farm-based visits to learn about the problems and opportunities involved in managing arable field margins (RDC, FWAG, Farmed Environment Company).
- Aim to substantially increase the length of field margins managed as annually-cultivated un-cropped headlands, especially on poor sandy or calcareous soils (DEFRA, FWAG, RDC, HHAONB).

## 6. Links to other action plans

This Action Plan is closely linked to those for **farmland birds** and **bumblebees**. It also complements a range of Habitat Action Plans including Acid Grassland which can contain a few annually cultivated margins with one or more of the species mentioned within this HAP.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995).  
Biodiversity: the UK Steering Group report.  
Vol. 2: Action Plans. HMSO. [Habitat Action Plan for cereal field margins]





# Wildlife-rich Ponds

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## 1. Introduction

Ryedale contains hundreds of ponds of varying origins including field ponds, spring-fed ponds, oxbow ponds, dew ponds, clay pits, marl pits, flooded mineral workings, mill ponds, village ponds, garden ponds and fish ponds. These vary enormously in their wildlife interest: village ponds fouled by feral ducks or intensively-managed fish ponds provide a very poor habitat but others support a great diversity of flora and fauna.

In general, wildlife-rich ponds have extensive vegetation cover, shallow water and are long-established. Most (but not all) are relatively isolated from pollution. Clusters of ponds are particularly valuable for some species, especially amphibians.

Examples of wildlife-rich ponds in Ryedale include:

- Ancient ponds on naturally-wet sites such as seepage-fed ponds at Castle Howard Arboretum (Sata Pond) and Thixendale. These support extensive areas of mossy vegetation rich in invertebrates, including several scarce species.
- Flaxton village has an exceptionally high concentration of small ponds, providing a stronghold for great crested newt. One pond on the village green is possibly of ancient origin and has an important insect fauna.
- Oxbows originate as cut-off river bends. About 16 oxbow ponds can be found along the River Rye between Sproxton and Nunnington. Some of these have been modified but in their natural state form shallow, fluctuating water bodies, which are rapidly colonised by fen vegetation.
- Uncommon plants such as water violet and hop sedge have been recorded from old clay pits, along with great crested newts and scarce invertebrates.
- Silted-up medieval fishponds at Old Malton support a rich fen flora including species that are now rare in the Vale of Pickering such as great water dock, marsh cinquefoil, purple small-reed and tufted sedge.
- Several dew ponds on the Yorkshire Wolds are of special biodiversity interest. Although in isolated locations and often surrounded by arable, some of these have floating rafts of mossy vegetation which provide habitat for specialised invertebrates.
- Some old field ponds are notable for their amphibians, plants and invertebrates.



# Wildlife-rich Ponds

## 2. Conservation issues

Many field ponds were lost in Ryedale during the 20th century due to infilling, land drainage, conversion to arable and urban development. Surveys in former Southern Ryedale in the early 1990s indicated that one third of field ponds shown on current OS maps had disappeared with a further 10% reduced to dried-up hollows. Surveys of the Helmsley – Eberston and Malton – Pickering road corridors in 1994 indicated that around 33% of ponds had either disappeared or were permanently dried-up.

There has been a particularly marked loss of dew ponds, which have often been removed or have dried-out due as their clay linings have perished. One sample survey on the Yorkshire Wolds indicated a loss of 80% of dew ponds between the 1950s and 1980s. Although of man-made origin in isolated locations, dew ponds can be of significant wildlife interest and are also of historic importance.

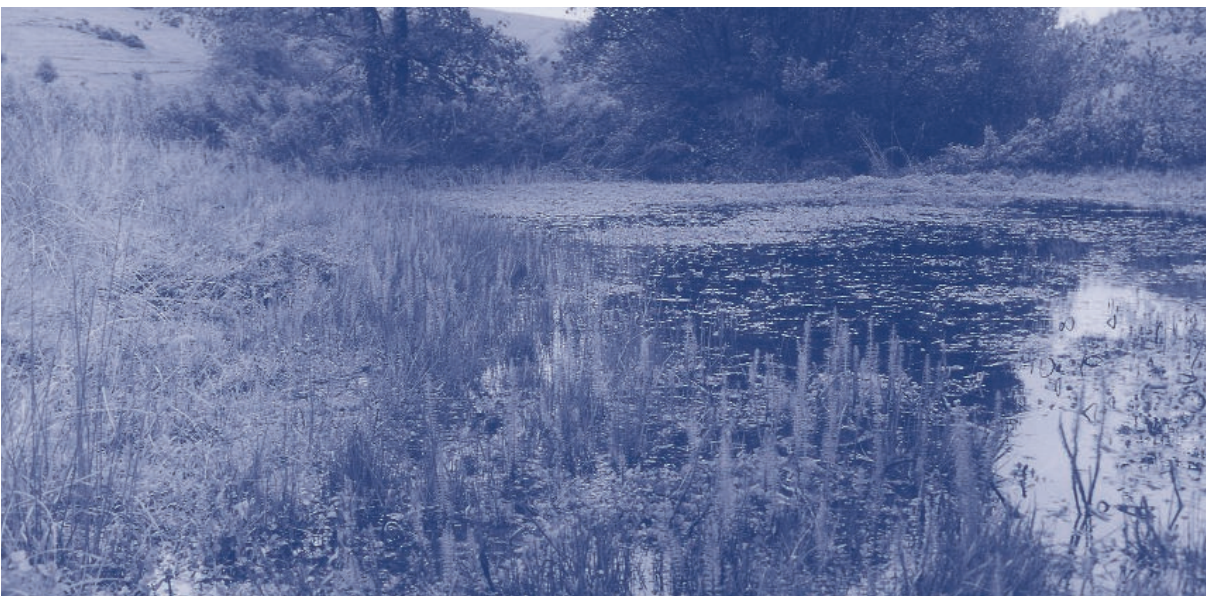
In recent years there has been a marked reversal of this trend with many new ponds created in farmland, gardens and amenity areas. However, these are often isolated and will mainly benefit common and mobile species. Wildlife-rich ponds are mostly located amongst other semi-natural habitats such as wetland, native woodland or herb-rich grassland. These provide

insects which breed in ponds) and buffer the effects of more intensive land use.

Historically, mineral extraction has created many ponds in Ryedale (e.g. clay and marl pits). Current extraction of limestone, sand and gravel will create new ponds of potentially high wildlife value since these will often remain isolated from pollution.

There are relatively few areas in the district with a high density of ponds. These include clay pit complexes at Costa Lodge, Anchor Plain and Claxton; Flaxton village; Castle Howard; Lillings Ambo marl pits; Thixendale and the outskirts of Pickering. Pond clusters facilitate the dispersal of species (including recolonisation of individual ponds after temporarily adverse conditions) and maintain gene flow.

Management of wildlife-rich ponds needs to be assessed on a site-by-site basis, using detailed ecological surveys where possible. ‘Overgrown’ ponds, for example, can be very rich in biodiversity and drastic management may be inappropriate. In other cases, active management may be essential. Features such as richly-vegetated margins with extremely shallow water can support a high proportion of biodiversity in ponds; these can easily be lost or damaged through insensitive management.



# Wildlife-rich Ponds

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Seasonal, fluctuating or periodically dry ponds can be very valuable for biodiversity, so that 'improvement' by deepening or reprofiling may be damaging.

Conversion of wildlife-rich ponds to angling ponds is always likely to be detrimental, both directly by deepening/reprofiling and indirectly by introducing high densities of predatory fish. Fish predation can eliminate sensitive species such as great crested newt whilst coarse fish also affect water and habitat quality.

The deliberate introduction of non-native species of fish/aquarium species can have a significantly detrimental affect on the biodiversity of ponds as can the deliberate or accidental introduction of exotic water plants. Highly invasive ornamental species such as parrot's feather, curly waterweed, water fern and New Zealand swamp stonecrop are becoming a nation-wide problem.

Some species associated with wildlife-rich ponds have been recorded from single sites in Ryedale and may be vulnerable to local extinction if these sites are lost or degraded. These include plants such as water violet, great water dock and tufted sedge and insects like the rare diving beetle *Laccornis oblongus* (a local BAP Priority Species).

Pond creation, management and restoration are popular amongst land managers. On farm holdings, grants will often be available through Environmental Stewardship (ES) but elsewhere funding is limited.

## 3. Action plan objectives

- Maintain the characteristic biodiversity of wildlife-rich ponds throughout Ryedale and encourage sympathetic management of surrounding habitat, including creation of buffer zones around ponds.
- Encourage restoration of wildlife-rich ponds where these have deteriorated due to natural succession, hydrological changes, drying-out or dense shading.
- Conserve and enhance pond clusters.
- Ensure that management of wildlife-rich ponds is sensitive and well-informed.

## 4. Current action

One wildlife-rich pond is located within a Site of Special Scientific Interest (SSSI) and several are within Sites of Importance for Nature Conservation.

A number of wildlife-rich ponds have been managed through CSS, local authority grants and other sources of public funding.

Work is underway to restore silted-up and heavily shaded clay ponds at Whey Carr Plantation (Claxton), as a joint initiative between Forestry Commission and Ryedale District Council.

Work has been undertaken to restore open water and fen habitats in the River Rye oxbows. This has been carried out as part of the River Rye Conservation Project.

Ecological surveys have been undertaken to inform management of several wildlife-rich ponds in the district.

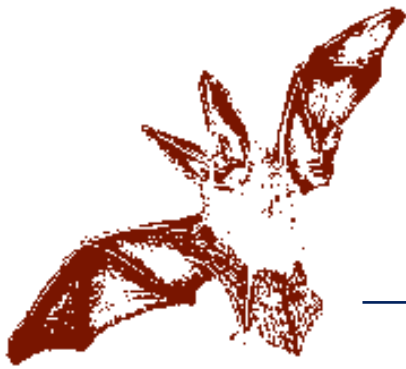
## 5. Proposed action

- Ensure that management of wildlife-rich ponds in Ryedale takes full account of the biodiversity interest of individual sites. This will often require detailed ecological surveys and the preparation of management plans (DEFRA, RDC, HHAONB, FWAG, EN).
- Encourage grant-aided schemes which help protect wildlife-rich ponds, e.g. by creating buffer zones such as new native woodland or grass field margins on neighbouring arable (FC, DEFRA).
- Undertake a geographical analysis of wildlife-rich ponds in Ryedale to identify areas where restoration or creation of ponds is likely to be most profitable for biodiversity (RDC, NEYEDC).
- Seek funding to promote restoration or creation of wildlife ponds in key areas following the above study (RDC).
- Identify opportunities to create wildlife-rich ponds during the restoration of mineral extraction sites (NYCC).

## 6. Links to other action plans

This Action Plan will contribute to the UK and local Species Action Plans for great crested newt and water vole, and the local Action Plans for water violet and the diving beetle *Laccornis oblongus*.

# **Species Action Plans & Species Statements**



# Wildlife in Towns and Villages

## 1. Introduction

Ryedale is a predominantly rural district so the local Biodiversity Action Plan focuses mainly on habitats and species associated either with farmland or semi-natural places. However, gardens, allotments, churchyards, school and community wildlife areas and village greens can also provide important wildlife habitats.

### Key species especially associated with towns and villages in Ryedale include:

*Song thrush*: A familiar but seriously declining bird that occurs in woodland and hedgerows throughout the district but probably has some of its strongest populations around settlements.

*Spotted flycatcher*: A migratory songbird that breeds in large gardens and churchyards with mature trees and also in parkland or open woodland. It is also in serious decline, as with song thrush, habitats in local towns and villages are important to the survival of this species in Ryedale.

*Pipistrelle bat*: Although still the most abundant British bat, pipistrelle numbers were estimated to have declined by 70% between 1978 and 1993. pipistrelle bat roosts probably occur in every settlement in Ryedale with towns and villages supporting a large proportion of the district's population. It has recently been discovered that there are two distinct species of pipistrelle, both of which seem to be widespread in Ryedale.

There are several other bat species in the district. All of these occur to some extent in settlements, although Daubenton's bat is mainly found around river corridors, long-eared bat favours well-wooded parts of the district and the Noctule usually roosts in old trees.

A number of other priority species sometimes occur within towns and villages in Ryedale including great crested newt, tree sparrow and bumblebees (see separate Species Action Plans).

### Towns and villages also support a range of other habitats and features of conservation interest. These include:

*Rivers and streams*: important species like brook lamprey, otter, freshwater crayfish and rare mayflies have all been recorded from watercourses within towns and villages.

*Wildlife-rich ponds*

*Unimproved, flower-rich grassland* (e.g. Flaxton village green, some small pastures on the outskirts of Pickering)

*Churchyards*: Important for lichens and sometimes containing remnants of ancient meadow.

*Veteran trees* (e.g. at Slingsby churchyard)

*Ancient monuments* can support interesting wall-growing plants and insects which nest in the dry, sandy ground around wall-footings

*Allotments*: Important habitats for declining birds like song thrush and house sparrow

*Ancient/species-rich hedgerows* (e.g. the Crofts at Flaxton) and small orchards (often with tree sparrow colonies)

*Amenity tree and shrub planting*: Provides food and nesting sites for songbirds, with the rare hawfinch sometimes seen feeding on tree seeds in a Helmsley car park.

## 2. Conservation issues

Individuals, businesses and community groups in Ryedale's towns and villages can play a vital role in protecting some of the district's threatened wildlife. Much general information and advice is readily available, e.g., on wildlife-friendly gardening, creating school nature areas, planting native-species hedgerows and bat conservation. An important role of this Action Plan will be to make this information available to a wider audience with a focus on simple, practical measures to conserve key species associated with towns and villages.



# Wildlife in Towns and Villages

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Ryedale District Council has very limited land holdings, so there are relatively few opportunities for the local authority to manage land directly for biodiversity. However, opportunities arise through the planning process to encourage the creation of wildlife habitats in new developments.

Simple, inexpensive local projects could play a major role in conserving some threatened species in towns and villages. However, all species are dependent on the viability of wider 'metapopulations', often including those in the farmed countryside. Species capable of dispersal over only short distances such as great crested newt may be vulnerable to the effects of in-breeding depression so that isolated populations in village ponds may not be viable in the long-term if these are isolated from other colonies. Long distance migrants such as spotted flycatcher are vulnerable to unfavourable influences on migration and in-wintering habitats. All of this means that conservation projects in towns and villages should not be seen in isolation.

### 3. Action plan objectives

- Promote management of gardens, allotments, public open spaces, the grounds of business premises, churchyards, school grounds and other greenspaces to benefit wildlife with an emphasis on priority species such as song thrush, spotted flycatcher, bats and bumblebees. This will be achieved primarily through information and advice, supported by small grants where resources allow.

### 4. Current action

The Yorkshire Wildlife Trust's Living Churchyards Project has advised on the conservation management of several churchyards in Ryedale and drawn up Management Plans (see [www.yorkshire-wildlife-trust.org.uk](http://www.yorkshire-wildlife-trust.org.uk)).

Ryedale District Council has assisted in the creation of several school wildlife areas through grants and advice. In 2000, grants were provided to plant native trees and hedges in school grounds.

The District Council and several Parish Councils have restored a number of village ponds. New ponds and wildlife areas were created at Ampleforth and Nawton in 2000 as part of the Millennium celebrations.

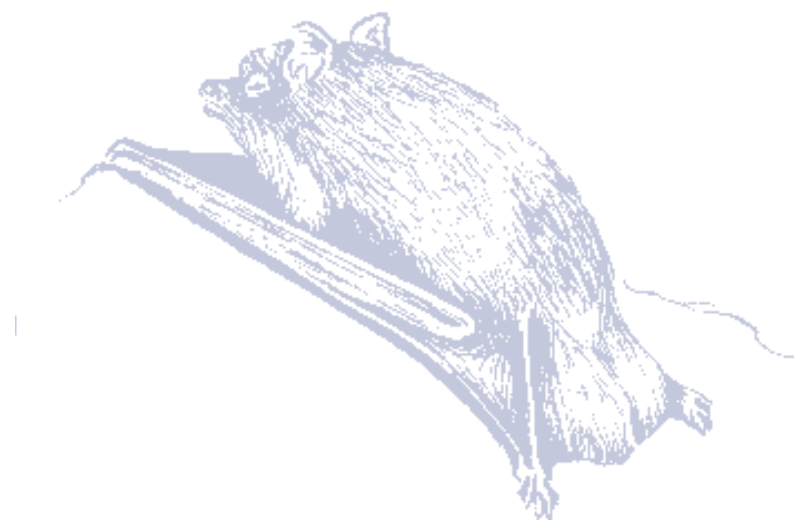
Tree and shrub planting has been undertaken in the grounds of Ryedale House with the aim of encouraging species such as song thrush and bumblebees.

Ryedale District Council's REACT fund has assisted several community-based wildlife projects. This provides grants for voluntary bodies carrying out environmental projects in areas with public access.

In 2003, 30 nest boxes suitable for spotted flycatcher were made available to Parish Councils, community groups, schools and churchyard managers for erection in suitable locations (RDC).

### 5. Proposed action

- In 2007, produce an information pack on biodiversity in towns and villages comprising a range of leaflets and booklets, including an information sheet focussing on local priority species and habitats, such as ancient/species rich hedgerows and the management of village ponds. These leaflets should include information on grants/support available to assist with management. Distribute this to Parish Councils, schools, community groups and interested individuals in Ryedale (BAP Partnership).



# Wildlife in Towns and Villages

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## Possible actions to benefit key species in towns and villages

### *Pipistrelle bat*

- Protect roosts (usually in buildings).
- Protect/create insect-rich feeding habitats (hedgerows, copses, wildflower grassland, ponds).
- Bat boxes may be useful in some situations.
- Night-flowering plants in gardens encourage nocturnal insects.

### *Song thrush*

- Protect and create hedges and small native woodland around towns and villages.
- Dense stands of spiny shrubs can provide secure nesting sites.
- Plant berry bearing shrubs as winter food.
- Avoid or reduce pesticide use.
- Encourage cat owners to fit bells.

### *Spotted flycatcher*

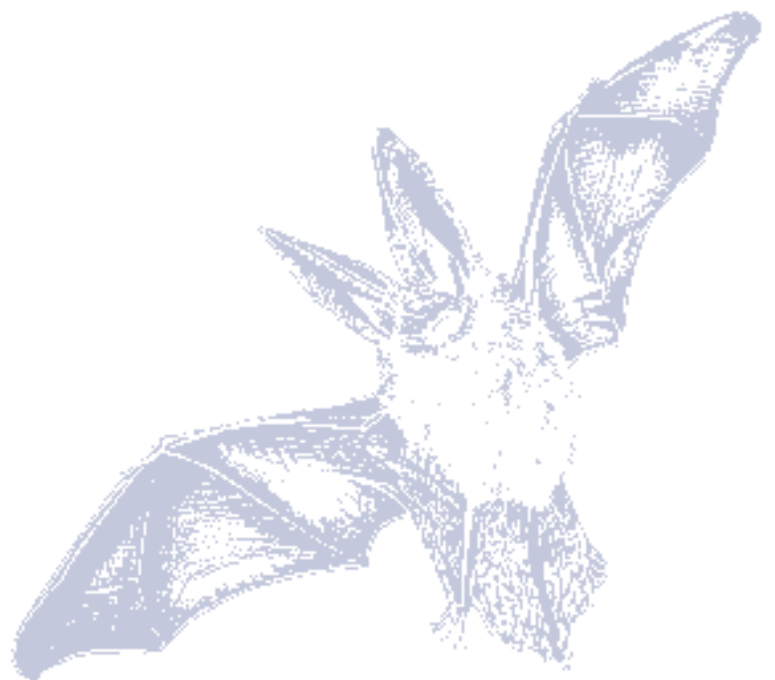
- Manage large grounds and churchyards with mature trees to create glade-type habitats.
- Install nestboxes in suitable locations (trees overlooking open areas, ivy-covered walls).

## 6. Links to other action plans

This Action Plan complements those for tree sparrow, great crested newt and bumblebees, neutral grassland, ancient/species-rich hedgerows and wildlife-rich ponds.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group report. Vol. 2: Action Plans. HMSO. [Species Action Plans for pipistrelle bat and great crested newt]





# Water Vole

(*Arvicola terrestris*)

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## 1. Introduction

The water vole was once a common and familiar mammal of rivers, streams and drains, especially those with steep banks and extensive bankside vegetation cover. It has undergone a serious decline during the 20th century, having disappeared from around two thirds of its former haunts by 1990.

This decline seems to be continuing. Recent records are widely scattered but most of these probably refer to very small populations or wandering individuals.

Evidence indicating breeding populations has been recorded during the past few years from ditches at Staxton Carr, the Derwent around Foul Bridge, the Rye at Low Waterholmes, Mill Beck at Eddlethorpe and Settrington Beck. There have been scattered reports from Costa Beck near Marishes, the River Riccall, the River Seven between Normanby and Great Barugh, Hodge Beck at Welburn, the River Dove near Salton and Wath Beck at Slingsby.

## 2. Conservation issues

Water voles are believed to have declined due to a combination of impoverished waterside habitats and intense predation by feral American mink. Loss of lush waterside vegetation has often been the result of agricultural intensification, over-grazing or drainage engineering. This leaves water vole populations more vulnerable to predation.

There is still plenty of good quality water vole habitat in Ryedale. In recent years waterside habitat has been improved on many arable farms by the creation of grass margins alongside watercourses. It is likely that predation is the main threat to water vole in the district, rather than habitat loss. Local populations appear to have gone into a downward spiral with isolated and increasingly small breeding colonies struggling to survive.

Conservation of water vole in Ryedale will depend on safeguarding remaining breeding colonies from predation, and maintaining or creating good quality waterside habitats to allow for future recovery.

Main rivers in Ryedale may only be marginally suitable for water voles because the flow of water is often too fast and there is limited marginal/bankside habitat and vegetation for the voles. However, they have also disappeared from Costa Beck that has relatively stable flows. It is possible that viable water vole populations survive unrecorded in ditches in the Vale of Pickering carrs.

Insensitive management of watercourses can be a threat to water voles, e.g. wholesale removal of aquatic or bankside vegetation during the summer months or re-sectioning banks containing their burrows.

Use of rodenticides to control brown rats near watercourses is a potential threat to water voles. Appropriate training of public and private sector pest control staff is therefore required.

## 3. Action plan objectives

- Prevent further extinctions of water vole in Ryedale by encouraging active conservation of all remaining breeding colonies.
- Encourage sympathetic management of water vole habitats to allow recovery of populations in the district.
- Raise awareness of the species, its requirements and protected status amongst land managers, pest control staff and local communities.
- Gather further information on the distribution of water vole in Ryedale, especially in habitats such as farmland drains that have not been covered by recent surveys. This information is necessary to target conservation measures.
- Ensure that development proposals affecting watercourses do not adversely affect water voles and comply with legal requirements.

# Water Vole

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## 4. Current action

A UK Action Plan for water vole has been published, and detailed information and guidance on water vole conservation is readily available. The UK Species Action Plan aims to maintain the current distribution and abundance of the species and to restore its 1970s range by 2010.

The Yorkshire Wildlife Trust's Water for Wildlife Project promotes water vole conservation. A water vole conservation project also operates in East Yorkshire, providing advice on habitat management and mink control.

The Environment Agency undertook a water vole survey of main rivers in the Derwent catchment in 2000.

A water vole training event for pest control staff, engineers and drainage staff was held in York in May 2002.

Water vole records are collated by the Yorkshire Mammal Group and the Environment Agency. The North & East Yorkshire Ecological Data Centre will play an increasingly important role as a central source of records of species of conservation concern.

## 5. Proposed action

- In 2007, identify appropriate conservation measures for all known water vole breeding populations in Ryedale and seek to implement these in co-operation with land owners. (EA, Water for Wildlife).

- Assess the need for and, if appropriate, carry out mink control on at least one water vole site in 2007/2008 (BAP Partnership).
- Ensure that any development proposals affecting watercourses include a survey for water voles. If the species is found to be present, ensure that adequate mitigation measures are agreed (EA, EN, NYCC, RDC).
- Encourage surveys of potential water vole habitats such as farmland drains in the Vale of Pickering to ensure that any further sites supporting this species can be sympathetically managed. Where Environment Agency land holdings have not been surveyed, ensure that these are assessed for water voles in 2007 (EA).
- Forward water vole records to the Yorkshire Mammal Group, Environment Agency and North & East Yorkshire Ecological Data Centre (BAP Partnership).

## 6. Links to other action plans

Successful implementation of the local Action Plans for arable field margins and wetlands should benefit water vole.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group report. Volume 2: Action Plans. HMSO: London. [Action Plan for water vole: p82]





# Tree Sparrow *(Passer montanus)*

## 1. Introduction

Tree sparrow is a familiar but seriously declining songbird associated with farmland, orchards and the outskirts of settlements. British breeding populations are estimated to have declined by 87% during the period 1970-98 and this species has disappeared from some parts of England. It is a Priority Species in the UK Biodiversity Action Plan.

Tree sparrows nest mainly in tree holes in hedgerows or the edges of woodland, in loose colonies. Nests are occasionally built in bushes or farm buildings. It is mainly a seed-eater, feeding on weed seeds, spilt grain and seeds of some perennial plants. During the breeding season, nestlings are fed on invertebrates such as spiders, caterpillars, grasshoppers and bugs.

The severe decline of tree sparrow is associated with loss of food sources and nest sites in the farmed countryside. This includes the decrease in seed-rich winter stubbles and loss of old hedgerow trees (e.g. through removal or as a result of Dutch elm disease). However, tree sparrows do take readily to nest boxes in suitable locations and will often visit bird tables and winter-feeding stations in farms and villages.

Ryedale remains an important stronghold for tree sparrows. Breeding colonies are currently known from around 50 locations.

## 2. Conservation issues

As tree sparrow is a social species, small populations surviving in less favourable habitats may be vulnerable to extinction. Conservation measures should therefore aim to maintain and enhance individual populations and maintain the overall distribution of the species.

Loss of hedgerow trees through Dutch elm disease or deliberate removal may have affected local populations in the past, and some populations appear to be dependent on a small number of old ash trees which may be vulnerable to natural death or felling for safety reasons. Hedgerow restoration, replanting of hedgerow ash and oak trees and maintaining a continuity of mature hedgerow trees over time will benefit tree sparrows.

Tree sparrow is a popular bird that responds well to targeted measures such as provision of nest boxes and supplementary feeding in winter.

## 3. Action plan objective

- Maintain and expand the distribution and abundance of tree sparrows in Ryedale.

## 4. Current action

A UK Species Action Plan for tree sparrow has been published. This aims to reverse population decline and ensure a long-term recovery of the species' abundance and distribution in Britain.

Tree sparrows are currently benefiting from provision of wild bird food at several farm and village locations, including feeding of tail corn at two farms. At Manor Farm, Eddlethorpe, up to 200 tree sparrows fed on tail corn spread along farm tracks in winter 2002/2003. The RSPB BirdAid scheme encourages farmers to provide waste grain to songbirds over winter.

Tree sparrow is an ES target species in the Vale of York, Yorkshire Wolds, Vale of Pickering and North York Moors fringes.

In spring 2002, over 200 tree sparrow nest boxes were installed on over 30 land holdings in Ryedale. A study and ringing project at Manor Farm, Eddlethorpe, includes nest box monitoring.

In November 2002, Ryedale District Council and the Farmed Environment Company held a seminar on the study and conservation of tree sparrows in order to share information. Many research and conservation projects focussing on tree sparrows are underway nationally.



# Tree Sparrow

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## 5. Proposed actions

- In 2007, collate baseline information on tree sparrows in Ryedale. This information will be used to monitor future trends and target conservation measures (RDC).
- Establish winter feeding sites for farmland birds by providing feeding hoppers, subsidised seed or using tallings. Aim to establish six winter feeding sites by 2007 (BAP Partnership).
- Ensure that hedgerow restoration schemes under Environmental Stewardship include provision of new hedgerow trees within tree sparrow areas, in order to maintain future continuity of nesting habitat (DEFRA, FWAG, HHAONB, RDC).

## 6. Links to other action plans

Tree sparrow is likely to benefit from local Action Plans covering farmland birds, wildlife in towns and villages, arable field margins and ancient/species-rich hedgerows. This Species Action Plan for tree sparrow will contribute to the UK Species Action Plan.

## 7. Bibliography

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. Volume I – vertebrates and vascular plants. [Action Plan for tree sparrow: p. 93-95]





# Woodlark *(Lullula arborea)*

## 1. Introduction

Woodlark is a partially migratory songbird traditionally associated with lowland heaths in southern Britain. It also occurs in other habitats such as mixed farmland, set-aside, parkland and forestry clear-fells. It requires extensive areas of short vegetation and bare ground for foraging, with patchy tree and shrub cover.

British breeding populations severely declined during the 20th century with an estimated population of only around 350 pairs in 1990 and a serious contraction in range. In recent years there has been a significant recovery including re-colonisation of areas at the northern edge of its distribution. In 1997, the national population was estimated to be around 1500 pairs. North Yorkshire is at the northern edge of woodlark's historic range; in Ryedale it formerly extended into the western Vale of Pickering.

Very small numbers of woodlark have become re-established in the Vale of York since the late 1990s. Three to four pairs have bred annually for several years at a single location in southern Ryedale. This marks the northern extremity of the species' current distribution, so conservation of this population is important in maintaining its geographical range. The local population is migratory, with birds arriving in March.

Woodlark is a Priority Species in the UK Biodiversity Action Plan.

## 2. Conservation issues

Woodlark has declined historically because of loss of lowland heaths and associated habitats. Recently restocked clearfells in conifer plantations on former heathland can provide a favourable habitat. Woodlarks also exploit other habitats with varied vegetation structure including wasteground, set-aside and large forest glades.

At present, conditions appear to be favourable at the sole locality for woodlark in Ryedale. There may be scope for small-scale habitat management in nearby plantations to encourage spread of the population.

Small areas of habitat may be temporarily suitable for this species but become less so due to successional

change or change in land use, e.g. clear felled compartments in plantations. Therefore the successful re-colonisation of woodlark in Ryedale is likely to depend on the availability of suitable habitat mosaics over relatively extensive areas in order to establish core-breeding populations.

## 3. Action plan objective

- Maintain a viable population of woodlark in Ryedale and encourage expansion into other suitable habitat.

## 4. Current action

In Ryedale the population is monitored annually, by the Central Science Laboratory, based at Sand Hutton.

A UK Species Action Plan has been published for woodlark. This aims to increase the species' range and populations in Britain by 2008.

## 5. Proposed actions

- Assess management requirements to maintain a viable population of woodlark at the existing Ryedale location (site owner).
- In 2007, assess opportunities to create favourable habitat for woodlark within 1 km. of the established breeding site (FC, RDC).
- Monitor any colonisation of further locations and encourage sympathetic management. If colonisation of Forestry Commission land takes place, ensure that the needs of woodlark are taken into account during management operations (FC).

## 6. Links to other action plans

Woodlark may benefit from the local Habitat Action Plans covering acidic grassland and heathland. This Action Plan will contribute to the objectives of the UK Species Action Plan for Woodlark.

## 7. Bibliography

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. I – vertebrates and vascular plants. [Species Action Plan for Woodlark: pp77-79]. English Nature: Peterborough.



# Farmland Birds

## 1. Introduction

Many farmland birds have seriously declined during the past 30 years (see Table 1. below for recent statistics) and several are identified as priorities for conservation in the UK Biodiversity Action Plan. These include grey partridge, turtle dove, skylark, linnet, tree sparrow and corn bunting. Other birds of conservation concern mainly dependent on agricultural habitats include lapwing, barn owl and yellowhammer.

Species	Average (%) decline on Farmland 1974-1999
Linnet . . . . .	55
Reed bunting . . . . .	62
Lapwing . . . . .	41
Yellowhammer . . . . .	54
Tree sparrow. . . . .	95
Corn bunting . . . . .	89
Grey partridge . . . . .	84
Turtle dove . . . . .	69
Song thrush . . . . .	53
Skylark . . . . .	55

Source: The population statistics of birds in the United Kingdom, Channel Islands and Isle of Man: an analysis of conservation concern 2002 – 2007. Richard D Gregory et al 2002. British Birds 95. September 2002. pp 410 – 488.

Although factors affecting individual species vary, important influences include:

- The switch from spring-sown to autumn-sown cereals, resulting in loss of winter stubbles and suitable conditions for species which nest in short vegetation (e.g. lapwing and skylark).
- Intensive pesticide and herbicide use which reduces the availability of seed and invertebrate food.
- Loss of marginal habitats such as uncropped headlands, wet field corners etc.

Key habitat features for threatened farmland birds in Ryedale are summarised in Table 2.

## 2. Conservation issues

Reversing the decline in farmland bird populations in Ryedale will require:

- Maintaining food resources for seed-eating species throughout the year.

- Widespread improvement in breeding habitats and numbers of invertebrates needed for chick-food.
- Carefully targeted farm conservation schemes aimed at priority species.

## 3. Action plan objectives

- Maintain and enhance populations of declining farmland birds in Ryedale.

### Requirements of key farmland birds in Ryedale

*Lapwing:* Spring sown crops, rotational set-aside or un-intensive grassland (rough pasture/hay meadows); damp hollows for chick-feeding. Mainly breeds in open countryside with large fields, especially on the Wolds & Vale of Pickering. There is a small and declining breeding population with sizeable flocks of migrant birds boosting the numbers outside the breeding season.

*Grey partridge:* Grass headlands and un-improved grasslands, rich in insect food necessary for breeding. Requires seeds, grains and shoots for food throughout the year. Key food plants include black bindweed and knotgrass. Occurs thinly throughout the district; much scarcer than formerly.

*Barn owl:* Nests in old buildings, hollow trees or nest boxes; hunts over rough grassland (hay meadows, rough pasture, ditch banks, verges, field margins) with plentiful small mammals. Occurs thinly throughout the district with concentrations along river valleys. Populations are recovering due to conservation projects.

*Turtle dove:* Summer migrant using thickety hedgerows, scrub, woodland edges or young copses for breeding; needs plentiful weed and grass seeds for food. Very small and probably declining population in Wolds' valleys and Howardian Hills.

*Skylark:* Breeds in arable, rotational set-aside and un-intensive grassland; requires short to medium height vegetation for nesting. Requires invertebrates for chick food and seeds, grains and shoots throughout the year. Still very common in Ryedale, probably favoured by the large acreage of spring-sown crops.



# Farmland Birds

*Linnet*: Hedgerows, scrub or tall perennial vegetation for breeding; weed seeds, ripe rape seed and game cover crops for feeding throughout year. Occurs throughout Ryedale except in heavily wooded areas; locally common.

*Corn Bunting*: Nests in cereals or field margins, avoiding tall hedges. Requires insects as chick food and seeds or grains throughout year. Mainly found in open countryside with large fields, especially on the Wolds.

*Reed Bunting*: Nests in wetlands, ditch and river banks with tall vegetation; frequently feeds on weedy stubbles and rotational set-aside. They mainly occur along river floodplains and farmland drains.

## 4. Current action

UK Action Plans have been published for several declining farmland birds including grey partridge, skylark, turtle dove, linnet, corn bunting, reed bunting and tree sparrow.

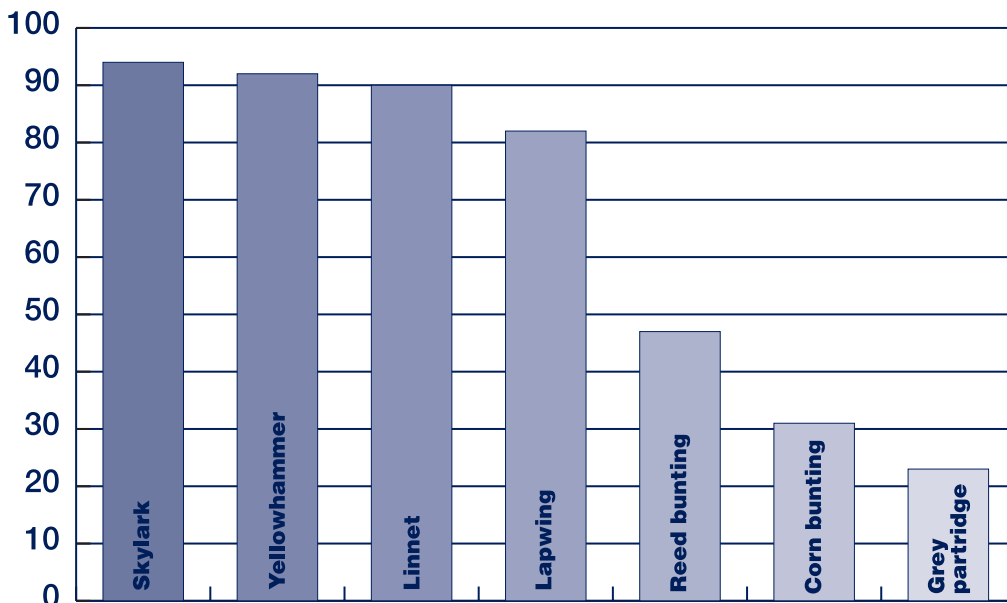
Agri-environment schemes such as Countryside Stewardship have benefited farmland birds by funding hedgerow restoration, establishment of arable field margin habitats and re-creation of wetland and grassland habitats within the farmed landscape.

New arable options introduced to the Countryside Stewardship Scheme in 2002 have greatly increased the scope for conserving farmland birds. These include management of conservation headlands, summer fallows and overwinter stubbles, establishment of wildlife seed crops and cultivation of low-input spring cereals. These options have attracted considerable interest from local farmers and have been implemented widely over the past few years.

Detailed monitoring of bird populations has been undertaken at Manor Farm, Eddlethorpe, to assess the effect of habitat management within a commercial arable enterprise. Nationally, much research has been undertaken concerning farmland bird conservation.

The RSPB's Farmer & Volunteer Alliance have provided free bird surveys to help farmers apply for Countryside Stewardship and carry out bird-friendly management. A number of local farmers are using harvest waste (tailings) to provide supplementary food for seed-eating birds in winter.

**Percentage of lowland farms in North Yorkshire from which key bird species were recorded in 2001-02 (sample = 41 farms). Source: RSPB Farmer & Volunteer Alliance.**



# Farmland Birds

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## 5. Proposed action

- Agri-environment schemes will provide the principal mechanism for conserving farmland birds in Ryedale.
- Make available information on the distribution of key species in Ryedale, to help land managers to plan ES applications (RDC, DEFRA).
- Establish six regular winter feeding stations for farmland birds in the district by 2007 (BAP Partnership).
- In 2007, initiate a targeted project to recover grey partridge populations in key areas, working with farmers and gamekeepers (HHAONB, RDC).
- Hold regular training events to help farmers make the most of their ES agreements (RDC, HHAONB, FWAG, FEC).

## 6. Links to other action plans

This Action Plan complements UK Species Action Plans for grey partridge, turtle dove, skylark, linnet, tree sparrow, reed bunting and corn bunting as well as the UK and local Habitat Action Plans for arable field margins.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group Report. Volume 2: Action Plans. [Species Action Plans for Grey Partridge and Skylark]. HMSO: London.

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. I – vertebrates and vascular plants. [Species Action Plans for turtle dove, linnet, corn bunting and reed bunting]. English Nature: Peterborough.





# Great Crested Newt *(Triturus cristatus)*

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## 1. Introduction

Great crested newt is a widespread but local and declining amphibian found mainly in lowland areas. British populations are of global importance for this species. In Ryedale, great crested newts are predominantly associated with traditional field ponds in permanent pasture but also occur in some parkland and garden ponds close to established populations.

Surveys in the early 1990s suggested that around one third of field ponds had disappeared in Ryedale during the previous 20 years, whilst many more no longer provide suitable breeding habitat for amphibians. Today more ponds are being created than lost but many of these are unsuitable for great crested newts or unlikely to be colonised.

Great crested newts favour ponds with a balance of open water and submerged or emergent vegetation. Fish are major predators on the young tadpoles of this species, so it usually avoids ponds containing fish. Great crested newts favour clusters of nearby ponds, especially where they are connected by favourable terrestrial habitat such as woodland, rough grassland and wetland. Pond clusters reduce the effects of in-breeding and safeguard against adverse conditions affecting individual sites. Favourable terrestrial habitat is essential for adult foraging, hibernation and migration.

In Ryedale, great crested newts have been found in around 35 ponds in recent years, mainly in the west and centre of the district. Strongholds occur around Flaxton village, the Parish of Lillings Ambo and the outskirts of Pickering, all areas with a high density of ponds. Only one, albeit important, colony was found in a recent survey of oxbow ponds along the River Rye. The species has been found in three water bodies at Castle Howard Arboretum but is otherwise unrecorded from the Howardian Hills. There are no known records from the eastern Vale of Pickering within Ryedale but this may be due to under-recording.

Great crested newt has been identified as a UK BAP Priority Species because it is considered to be seriously declining and because of the international importance of British populations. It is included in the Ryedale BAP for the same reasons.

## 2. Conservation issues

Although it is not currently threatened, great crested newt has probably declined in Ryedale due to the loss of old field ponds. The creation of new wildlife ponds near to existing populations could be beneficial but requires careful design and management.

Stocking with fish for ornament or sport, often involving enlargement and deepening of ponds, is always likely to be detrimental to this species. Stocking with waterfowl is liable to be equally detrimental. Fouling by feral ducks has become a serious problem at Warhill village pond, formerly one of the most important great crested newt ponds in the district.

Both over-management and neglect of breeding ponds can be a threat. Great crested newts sometimes inhabit muddy ponds used by livestock, seasonal grassy pools or urban-fringe ponds containing unattractive debris. Well-intended efforts to improve such ponds can be detrimental, e.g. deepening can allow predatory fish to become established. Equally, silting-up can lead to the loss of standing water whilst ponds choked with swamp vegetation or heavily shaded by trees are unsuitable for the species. Occasional drying up of breeding ponds is not necessarily detrimental and may be beneficial in preventing fish populations establishing. The adults are long lived and, provided habitat conditions are otherwise favourable, successful breeding is not required every year. However, prolonged drying-out is a threat.

Loss of ponds and surrounding terrestrial habitat through building development is now less of a threat because of the strict legal protection afforded to this species. However, it is essential that thorough surveys are undertaken and, where appropriate, suitable mitigation measures are implemented. Any development affecting great crested newts now requires licensing under strict guidelines via DEFRA to comply with UK and EC legislation. Detailed advice on mitigation measures is readily available.

The water quality requirements of great crested newt are not well understood. It is likely that anaerobic conditions in highly eutrophic ponds prevent breeding whilst toxic pollutants such as oils and road run-off contaminants will be detrimental.

# Great Crested Newt

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## 3. Action plan objectives

- Maintain the current distribution of great crested newt in Ryedale and to protect all known breeding ponds together with surrounding terrestrial habitat required for colony survival.
- Ensure favourable management of as many great crested newt breeding ponds as possible, including adjoining terrestrial habitats.
- Encourage habitat creation for great crested newts in Parishes known to support the species.
- Ensure that adequate surveys for this species are undertaken wherever great crested newt habitats may be affected by development.
- Encourage further recording of great crested newt in Ryedale in order to ensure conservation of presently undocumented populations.

## 4. Current action

Comprehensive guidance on the conservation of great crested newts is readily available, especially through English Nature publications.

A UK Species Action Plan for great crested newt has been published. This aims to maintain the range, distribution and viability of existing populations and to restore populations to 100 sites in the UK each year.

Policies in the Ryedale Local Plan promote strict protection of great crested newt and other legally protected species through the development control process.

During the past ten years, the three ponds on Flaxton village green have been carefully restored (Flaxton village supports a very high density of great crested newt ponds).

## 5. Proposed action

- Encourage conservation of all known great crested newt sites through provision of advice, use of development control policies and legislation (EN, DEFRA, RDC).
- Encourage grant-aided schemes that create new breeding ponds or improve terrestrial habitats in the vicinity of great crested newt sites (e.g. planting of new native woodland on agricultural land, wetland creation and sowing of arable field margins). Ensure that grant-aided pond management takes account of great crested newts (DEFRA, FC, RDC, HHAONB).
- Ensure that all development proposals (including minerals & infrastructure schemes) take full account of great crested newt (RDC, NYCC, EN, statutory agencies, developers).

## 6. Links to other action plans

Successful implementation of several local Habitat Action Plans could benefit great crested newt, e.g. those for arable field margins, wetlands and wildlife in towns and villages.

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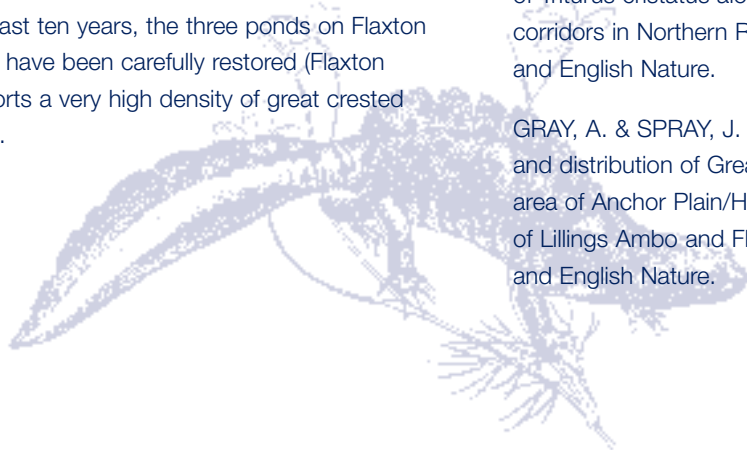
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# Bumblebees

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## 1. Introduction

Bumblebees are amongst our most familiar insects but many species are in serious decline in Britain. Of the 19 British species of true bumblebee, five are highly threatened and listed as Priority Species in the UK Biodiversity Action Plan; one is possibly extinct and two more may be on the verge of extinction nation-wide. Serious declines have also been reported from Continental Europe. Cuckoo bumblebees are brood parasites of true bumblebees, and thus depend on the fortunes of the host species.

Three or four of the five most threatened species formerly occurred in Ryedale. Of the sixteen bumblebees recorded in Yorkshire, six are believed to be extinct in our region and two more are now rare.

The reasons for this dramatic decline include:

- Reduced supplies of nectar and pollen due to the loss of wildflower-rich habitats.
- Loss of nesting and hibernation habitats in places such as hedge banks and field margins.

Bumblebee colonies are started each year by a single over-wintering queen, who seeks out a suitable nest site in early spring. Grass tussocks, old mouse nests or mossy debris are favoured sites for different species, often in hedge bottoms, field margins or gardens. Plentiful nectar and pollen are needed throughout the life of the colony. Bumblebees store little food and are susceptible to seasonal shortages of nectar, e.g. in late summer. Long-tongued and short-tongued species use different types of food plants but key nectar and pollen sources include legumes (e.g. birdsfoot trefoil, clovers), labiates (e.g. deadnettle) and compositae (e.g. knapweeds).

Honey bees and wild bees are of major importance as pollinators of crops and wild plants. It has been estimated that the value of bees to crop pollination in the European Union is around £3 billion each year. Wild bumblebees are especially useful in the pollination of field beans and other legumes, oilseed rape and borage.

12 species of bumblebee currently occur in Ryedale outside the North York Moors National Park. Two further species may also occur.

## 2. Conservation issues

The most threatened bumblebees are now very rare in Britain, so there may be little prospect of recovering species that have disappeared from Yorkshire. For example, the great yellow bumblebee *Bombus distinguendus* was once widespread and formerly occurred in Ryedale but is now known mainly from the Outer Hebrides, where there are still large areas of flower-rich grassland.

Bumblebees are popular and economically important insects, beneficial to farmers, growers and gardeners. Because bumblebees are amongst the most familiar insects, they are useful in raising public awareness of biodiversity and invertebrate conservation.

Arable field margins created through Environmental Stewardship offer considerable potential for recovery of bumblebee populations on farmland. Perennial grass margins can provide nesting and over-wintering sites and, if suitable wildflowers are encouraged, enhance the supply of nectar and pollen sources. Simple measures such as sowing red clover and knapweed into grass margins and avoiding cutting close to ground level could be of significant benefit. Recreation of herb-rich grassland through Environmental Stewardship will also be beneficial for bumblebees.

Arable options within ES include payments for creating nectar-rich insect foraging strips.

There are plenty of opportunities to encourage bumblebees in towns and villages, e.g. by providing nectar sources and nesting sites in gardens, allotments and orchards and sympathetic management of green spaces such as churchyards.

Considerable research is underway into the conservation of bumblebees, especially in the farmed environment. This includes work at Manor Farm, Eddlethorpe.

The status and distribution of bumblebee species in Ryedale requires further research, especially in favourable habitats such as herb-rich chalk grassland.

# Bumblebees

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Declines in the diversity and abundance of pollinating insects are a cause for concern amongst ecologists and agronomists worldwide. The São Paulo Declaration on Pollinators (1998) is an international initiative on the conservation and sustainable management of pollinating insects.

## 3. Action plan objectives

- Maintain and expand bumblebee populations in Ryedale.
- Raise awareness of bumblebees as indicators of environmental quality and the importance of biodiversity.
- Gain a better understanding of the remaining bumblebee fauna in Ryedale through targeted surveys.

## 4. Current action

Species Action Plans have been published for six seriously declining bumblebees as part of the UK Biodiversity Action Plan. A Bumblebee Working Group has been established to promote conservation projects and provide advice.

A Red Data Book covering threatened bees, wasps and ants has been published for Yorkshire, which has highlighted the disappearance of several bumblebee species from the region.

Bumblebee research at Manor Farm, Eddlethorpe (a Farmed Environment Company demonstration farm) includes transect surveys and studies of the use by bumblebees of arable field margins and insect foraging strips.

## 5. Proposed action

- Use bumblebees to raise public awareness of the importance of pollinating insects. In 2007, initiate a bumblebee conservation project (BAP Partnership).
- Assess current knowledge of the status of bumblebees in Ryedale and identify any additional survey requirements to provide a working knowledge of *Bombus* species in the district (BAP Partnership).

## 6. Links to other action plans

Bumblebees are likely to benefit from local Habitat Action Plans covering chalk and limestone grassland, neutral grassland, acidic grassland/heath and arable field margins. The Action Plan for wildlife in towns and villages will focus on bumblebees amongst other species.

This Action Plan is generic and is likely to benefit the less threatened species of bumblebee remaining in Ryedale, rather than UK BAP Priority Species that have become extinct in the district.

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# Glow-worm *(Lampyris noctiluca)*

## 1. Introduction

Despite its name, the glow-worm *Lampyris noctiluca* is a beetle up to an inch in length. The wingless female emits a luminous glow to attract mates in the months of June to August. The species has a two to three year lifecycle, the slow-growing larvae predated on small snails. Glow-worms occur in a variety of habitats, mainly on chalk or limestone soils, but avoid dense tree cover and favour habitats with some short grass.

Glow-worms appear to be declining in Britain and have disappeared from many areas where they were once common. The females are unable to fly so colonies are vulnerable. Habitat loss and fragmentation, use of pesticides and herbicides, scrub invasion of open calcareous habitats and light pollution have been suggested as factors leading to the loss of some populations.

Glow-worms appear to have been widespread in Yorkshire up to the 1970s. In Ryedale there are old records from Pickering and Helmsley with a more recent record from Burdale.

## 2. Conservation issues

Although glow-worms are better recorded than previously, this species is considered to be declining, at least in some parts of its range. The scarcity of recent records in North-east Yorkshire is cause for concern and it is important to assess the current status of glow-worm in Ryedale, as part of the national survey initiative. Conservation requirements can be assessed when more information about its distribution in the district is available.

Glow-worm is an interesting and unusual insect so there is good potential to involve people in undertaking surveys.

## 3. Action plan objectives

- Assess the current status and distribution of glow-worm in Ryedale, and its conservation requirements.
- Contribute records to the national glow-worm survey.

## 4. Current action

A national glow-worm survey is ongoing (see [www.glowworms.org.uk](http://www.glowworms.org.uk))

Glow-worm surveys have been undertaken recently in some areas neighbouring Ryedale with positive records from Langdale Forest.

## 5. Proposed action

- Organise a survey to search for glow-worm sites in Ryedale in 2007/2008 (BAP Partnership).
- Assess conservation requirements after survey records have been collated (BAP Partnership).
- Forward records to the national glow-worm survey and NEYEDC (RDC).

## 6. Links to other action plans

Glow-worm may benefit from the national and local Habitat Action Plans for calcareous grassland (chalk and limestone grassland in the Ryedale BAP).



Male



Female

Photos by Roger Key, English Nature.



# Laccornis Oblongus

## (a diving beetle)

### 1. Introduction

*Laccornis oblongus* is a small, chestnut coloured diving beetle. It lives amongst mossy vegetation in shallow water in ponds, mires and lake edges. This species has a highly localised British distribution concentrated in East Anglia and the Scottish border mires with a handful of locations elsewhere. These include three sites in Yorkshire: Throxenby Mere near Scarborough, Hornsea Mere in Holderness and a pond near Thixendale in Ryedale. There appears to be a strong population at the Ryedale locality.

*Laccornis oblongus* is one of several water beetles considered to have a relict distribution in Britain, with surviving populations representing remnants of a wider prehistoric distribution. It is apparently unable to fly and hence incapable of colonising new habitats except in close proximity to existing populations. The Ryedale site is a man-made pond on the site of a natural seepage fen. It forms part of a biodiversity 'hotspot', with the pond and nearby wetlands supporting numerous scarce invertebrates.

*Laccornis oblongus* is a Red Data Book species. It is included as a Priority Species in the Ryedale Biodiversity Action Plan as an example of a nationally rare, relict species restricted to a single locality and hence potentially vulnerable to local extinction.

### 2. Conservation issues

The Ryedale site is within a SSSI and was partially cleared in the recent past. Future management to maintain open water in the pond is unlikely to be detrimental provided the extensive mossy margins are maintained and spoil is not deposited around the pond edge. However, the site is located close to a public road so there is some risk of accidental pollution.

Since *Laccornis oblongus* appears to be incapable of dispersal over significant distances, conservation measures should focus on maintaining the existing habitat in favourable condition and creating mossy shallow water habitats in the immediate vicinity. Extension of the existing habitat will be beneficial in maintaining a viable population.

### 3. Action plan objective

- The existing *Laccornis oblongus* pond should be maintained in favourable condition with extensive mossy margins. Appropriate wetland creation in the immediate vicinity should be encouraged to extend existing habitat through the creation of a shallow pond or pools.

### 4. Current action

The land manager has agreed the creation of additional pools close to the existing pond, with grant aid offered by the Environment Agency.

### 5. Proposed action

- Ensure that the presence of *Laccornis oblongus* is identified as an important conservation issue in future site management (English Nature).
- Create additional habitat in 2007 (land owner, EA, RDC).
- Consider the potential effects on this species and its habitat of any future application for water abstraction or road improvements that might impact on the known site. (EA, NYCC).

### 6. Links to other action plans

This Species Action Plan complements the local Habitat Action Plan for wildlife-rich ponds.







# Bellflower *(Platyparea discoidea)* Picture-winged Fly

## 1. Introduction

The bellflower picture-winged fly *Platyparea discoidea* is a member of the gall-fly family, a group of flies whose larvae develop inside plant tissues and whose adults have intricately-patterned wings. It is a rare species with modern records from a handful of British localities, all in Yorkshire. It is also rare in Continental Europe.

The adults fly in May and June, with the female laying eggs in the emerging stems of giant bellflower *Campanula latifolia*, a plant mainly found in open woodland and woodland rides on base-rich soils. The larvae bore down into the plant stem after hatching.

The Yorkshire records appear to be all on limestone. It has recently been recorded from three sites in Ryedale and may occur more widely in suitable habitat in the Howardian Hills and Tabular Hills.

The bellflower picture-winged fly has the status of Vulnerable. It has been identified as a Priority Species in the Ryedale Biodiversity Action Plan because of its extremely restricted distribution and specialised ecological requirements.

## 2. Conservation issues

Bellflower picture-winged fly has recently been recorded from broad-leaved woodland in the Howardian Hills and Northern Ryedale. It could potentially occur in other woods with good populations of its host plant.

This species could be vulnerable to replacement of semi-natural ash woodland by conifer or beech plantations, although giant bellflower favours edge habitats that often remain less disturbed. Its main requirement is an adequate population of the host plant. It could be threatened if giant bellflower is cut during the growing season or if timber is stacked or tracks widened where it grows.

The UK Woodland Accreditation Scheme encourages forest managers to identify and protect species of conservation concern and their habitats. This could include identifying stands of giant bellflower in forestry plans so that they can be protected.

## 3. Action plan objectives

- To raise awareness of bellflower picture-winged fly and its food plant amongst woodland managers.

## 4. Current Action

A targeted survey for this species was commissioned by Ryedale District Council in 2002. Bellflower picture-winged fly was found at all three sites surveyed.

One site from which this species has been recorded in Ryedale is on the Hovingham Estate, which is in the process of entering woodland into the UK Woodland Accreditation Scheme.

## 5. Proposed Action

- An information leaflet about this rare insect and its conservation should be produced, aimed at woodland managers (RDC).

## 6. Links to other Action Plans

This Action Plan complements the local Habitat Action Plan for ancient ash woodland.

## 7. Bibliography

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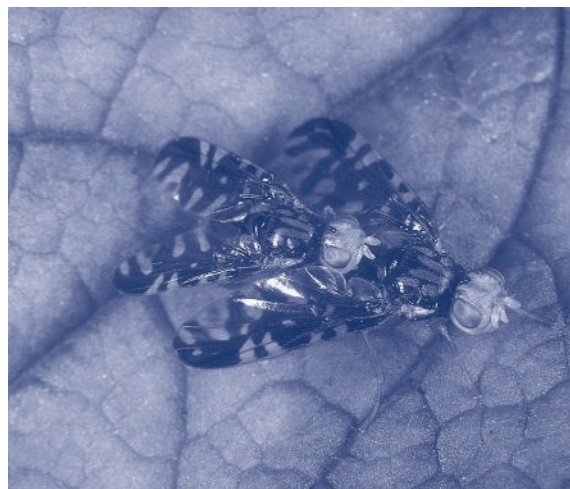


Photo by Roger Key, English Nature.

*Platyparea discoidea*, male and female in copulo.



# Electrogena Affinis (a mayfly)

## 1. Introduction

*Electrogena affinis* is a mayfly belonging to the family Heptageniidae. It was recorded as new to Britain in 1995 from the River Derwent at Norton and has not been found at any other British site. Mayflies are a relatively well-known group of insects that have long been studied by anglers because the flying stages are used as templates for fly-fishing lures. Mayflies are also important indicators of biological water quality, with most species being highly sensitive to pollution, so their distribution and ecology has been well studied. Although *E. affinis* is difficult to identify, it seems very likely that it has a highly restricted distribution in the UK.

*E. affinis* occurs in lowland rivers in Continental Europe and may well be a relict species in Britain, perhaps having colonised the River Derwent when the catchment was connected to the River Rhine system 8 - 10, 000 years ago. It is considered part of a relict Continental fauna in the Derwent which includes fish such as Barbel, Ruffe and, formerly, Burbot.

The ecological requirements of this insect are not well known but it probably requires unpolluted water with emergent vegetation on which newly-hatched adults can perch. At the Norton site, adults have been found in July and August.

The section of the river where this species has been recorded is contained by walls and steep earth banks but has varied aquatic and emergent vegetation. A very rich invertebrate fauna has been recorded from this location including other scarce mayflies.

*E. affinis* is identified as a Priority Species in the Ryedale Biodiversity Action Plan because the River Derwent at Norton is the only known British locality.

## 2. Conservation issues

*Electrogena affinis* is likely to be vulnerable to acute pollution, long-term changes in water quality and loss of emergent vegetation. However, the section of river from which it has been recorded has been extensively modified, is subject to severe scour during floods and has suffered from pollution in the past.

Current flood defence works have had an impact on the river channel habitats.

The Malton/Norton section of the River Derwent where *Electrogena affinis* is known to occur is excluded from the Site of Special Scientific Interest / Special Area of Conservation which covers the rest of the river downstream of Rye Mouth. The excluded section of river is designated as a Site of Importance for Nature Conservation in the Ryedale Local Plan but this affords a much lower level of protection.

## 3. Action plan objective

- Ensure that the River Derwent at Norton is maintained in favourable condition for this species. This includes ensuring sensitive management of the river channel, bankside habitats and marginal vegetation and maintaining high water quality.

## 4. Current action

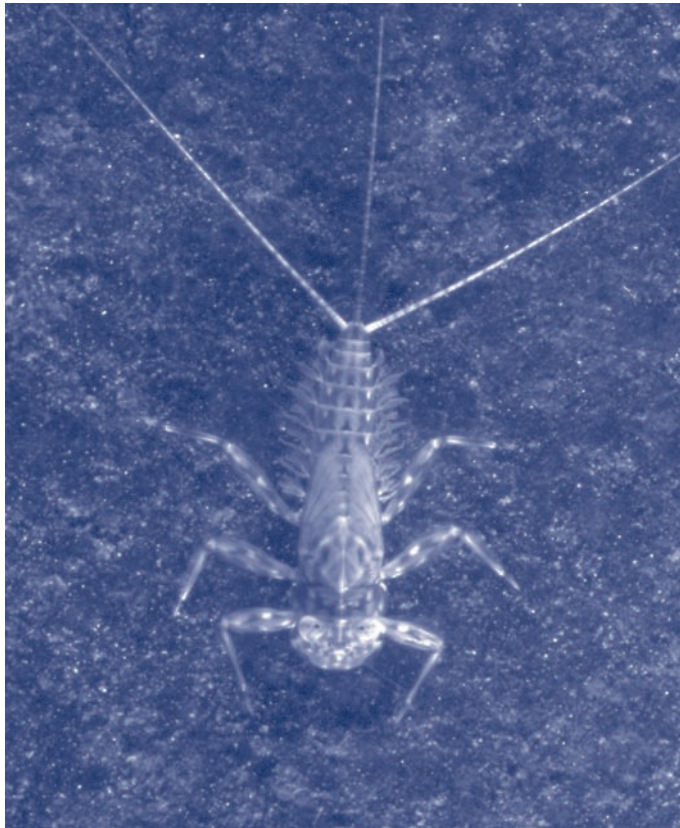
The presence of *Electrogena affinis* in the UK has been identified as a result of biological surveys of the River Derwent undertaken by the Institute of Freshwater Ecology (now part of the NERC Centre for Ecology and Hydrology), commissioned by the Environment Agency.

## 5. Proposed action

- In 2007/2008, commission a specialist survey to assess the distribution of *Electrogena affinis* in the River Derwent and gain information on its ecology/habitat requirements (EA) (CEH). The status of *Electrogena affinis* at Norton should be monitored when current flood defence works have been completed (EA).

## 6. Bibliography

BLACKBURN, J.H., GUNN, R.J.M. & HAMMETT, M.J. (1998). *Electrogena affinis* (Eaton, 1885) (Ephemeroptera, Heptageniidae), a mayfly new to Britain. *Entomologists' Monthly Magazine*, 134: 257-263.



*Electrogena Affinis* nymph



Photo by Michael Hammett.

*Electrogena Affinis* female



# White-clawed Crayfish

(*Austropotamobius pallipes*)

## 1. Introduction

The native white-clawed crayfish *Austropotamobius pallipes* is a large freshwater crustacean inhabiting base-rich streams, rivers and lakes. It is widespread but local and declining in hard water catchments in Britain, with nationally important populations in North Yorkshire.

In Ryedale, it remains locally common in the middle section of the River Rye and has been recorded from other streams in the Rye system including the Holbeck, Gilling Beck and Marrs Beck. There are also recent records from the River Derwent upstream of the Hertford confluence and at Sherburn Carr within the North York Moors National Park, there are large populations in the upper Derwent and upper Rye.

Records indicate that white-clawed crayfish formerly occurred in Costa Beck, the River Derwent at Norton and chalk streams descending from the Yorkshire Wolds including Settrington Beck, Scampston Beck and Ganton Beck. Although there are no confirmed recent records from the chalk streams, the species may still be present at one location.

Native crayfish require a diverse river habitat, which includes submerged tree roots, earth banks and a stony substrate. However, some North Yorkshire populations are associated with less typical in-stream habitats such as deep silt beds in the River Derwent at Forge Valley and water-crowfoot (*Ranunculus penicillatus*) beds in the Rye at Nunnington.

White-clawed crayfish enjoys limited legal protection under the Wildlife & Countryside Act and is a Priority Species in the UK Biodiversity Action Plan.

## 2. Conservation issues

The principal threat to white-clawed crayfish is considered to be the introduction of alien crayfish species, especially the North American signal crayfish. These act as vectors of a virulent fungal pathogen ('crayfish plague') and are also significant predators and competitors.

The colonisation of the Derwent system or River Foss by exotic crayfish would present a serious threat to the native species. There is no evidence that this

has taken place. It is important to monitor any potential colonisation of alien crayfish on a catchment-wide basis.

River engineering frequently disrupts instream and bankside habitat these actions are likely to be detrimental to white-clawed crayfish. The strong populations in the Middle Rye are associated with a near-natural river that is managed as a sport fishery for wild brown trout and grayling. Much of the Middle Derwent and other watercourses such as Costa Beck may now be unsuitable habitat for native crayfish.

Reductions in flow and/or water quality may have been a factor in the disappearance of crayfish from the Wolds chalk streams.

Swallow holes (fissures in the Corallian limestone) periodically result in loss of flow in the River Rye between Helmsley and Sproxtun. Considerable numbers of white-clawed crayfish have been removed from pools in the drying river bed during fish rescue operations. However, intermittent loss of flow does not appear to be having long-term effects on crayfish populations in the Middle Rye.

Sympathetic management of riparian habitats is likely to benefit white-clawed crayfish, at least indirectly, by regenerating semi-natural bankside vegetation and reducing siltation and pollution. This could include establishment of native woodland, or arable reversion grassland or grass margins around arable fields.

## 3. Action plan objectives

- Maintain existing white-clawed crayfish populations in Ryedale at a favourable level.
- Promote sympathetic management of riparian habitats alongside watercourses and extend to in channel habitat features known to support the species.

## 4. Current action

Yorkshire is designated as a 'no go' area for stocking of alien crayfish by DEFRA (formerly MAFF), in order to reduce the risk of feral populations colonising watercourses inhabited by the native species.

# White-clawed Crayfish



Courtesy of British Waterways

Records of white-clawed crayfish in North Yorkshire are collated on an ongoing basis by the Environment Agency (York office).

During the past three years, crayfish surveys have been undertaken in Pickering Beck at Pickering, Costa Beck at Pickering Low Carr Farm, Ebberston Beck and the River Derwent at Norton. These have all produced negative results. Ecological surveys of chalk streams in the Yorkshire Wolds have been undertaken by the Environment Agency; these have produced no evidence of crayfish.

The River Rye Conservation Project is a joint initiative involving Ryedale District Council, North Yorkshire County Council, the Environment Agency and English Nature. This has been successful in promoting conservation management of the Rye corridor between Helmsley and Ness with the support of several landowners. Ecological surveys have also helped highlight the special conservation value of the Middle Rye.

North Yorkshire County Council adopts best practice methods where crayfish may be affected by works to bridges crossing watercourses.

A national Species Action Plan for white-clawed crayfish has been published. A Species Action Plan for white-clawed crayfish has been produced on behalf of the North York Moors National Park, which includes catchment-wide recommendations. White-clawed crayfish has also been identified as a Priority Species in Local Biodiversity Action Plans for Hambleton district and the City of York, which share borders with Ryedale.

The Environment Agency are monitoring a population of alien Crayfish at one site which is within a short distance of the river Derwent system.

## 5. Proposed action

- A survey of historic crayfish sites in North Yorkshire will be undertaken by the Environment Agency if resources are available (EA).
- Sympathetic management of waterside habitats should be encouraged on river corridors known or suspected to support white-clawed crayfish, e.g. creation of ES field margins and new riparian woodland in appropriate locations (EA, RDC, HHAONB, FC, RDA).
- Anglers and other river users should be encouraged to report records of crayfish to the Environment Agency (EA, RDC, HHAONB).
- Establish a monitoring programme for alien species of crayfish.

## 6. Links to other Action Plans

This Action Plan should be considered in conjunction with the UK SAP for freshwater crayfish, and SAPs for neighbouring districts.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group Report. Volume 2: Action Plans. Species Action Plan for white-clawed crayfish *Austropotamobius pallipes*. HMSO London.



# Water Violet

(*Hottonia palustris*)

## 1. Introduction

Water violet *Hottonia palustris* is a distinctive member of the primrose family that is found in ponds and ditches with good water quality. It is uncommon and very local with evidence of considerable decline. Although not identified as a national priority for conservation, water violet is considered endangered in Ryedale and has consequently been included in the district BAP. Active conservation measures are considered essential to maintain the species in Ryedale.

Water violet disappeared from two Ryedale locations in the 1980s following scrub encroachment over old, shallow clay ponds. At one location, it re-appeared following scrub clearance but this site is not secure. The second site, managed by the Forestry Commission, is currently being restored to a favourable condition.

Water violet favours mineral-rich water and will tolerate some shade but is vulnerable to pollution. Fluctuating water levels are needed for seedlings to establish, although plants will also reproduce vegetatively. This species may benefit from rotational clearance of ponds and drains.

## 2. Conservation issues

In the past, water violet is likely to have been widespread in species-rich aquatic plant communities in Ryedale. The loss of associated species such as greater water parsnip, bladderwort and frogbit from floodplain ditches in the Malton/Rye Mouth area is indicative of the disappearance of this type of vegetation.

Infill of old clay pits by tipping remains a potential threat at the single currently-known Ryedale locality for the species.

Conservation management of shallow clay ponds at Whey Carr Plantation (Claxton) provides a valuable opportunity for re-establishing water violet. The species occurred at this site until ca. 1990 but has failed to regenerate from seed following recent clearance of encroaching scrub. Re-introduction from a healthy donor population within the Vale of York Natural Area is now being considered.

## 3. Action plan objective

- Water violet should be re-established at Whey Carr Plantation and opportunities for further re-introductions to appropriate sites should be monitored.

## 4. Current action

The British Trust for Conservation Volunteers undertook extensive scrub clearance at Whey Carr clay ponds in 2000. Ryedale District Council and Forestry Commission jointly funded this work. However, there was no evidence of natural regeneration of water violet in 2001/2002.

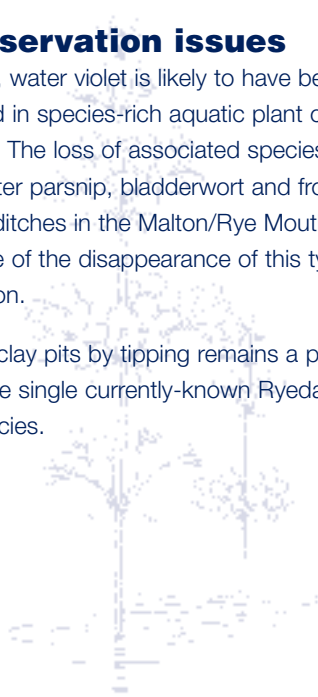
A potential source of propagules within the Vale of York Natural Area has been identified should reintroduction be appropriate.

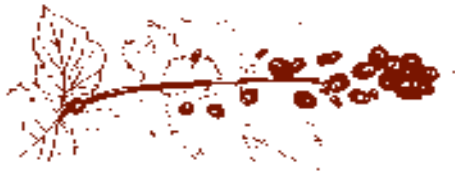
## 5. Proposed action

- Reintroduce water violet to Whey Carr ponds in 2007 using locally-native plants (RDC, FC).
- Monitor opportunities to secure favourable long-term management of the existing location for Water Violet in Ryedale.

## 6. Links to other action plans

Other Priority Species such as great crested newt may benefit from actions to conserve water violet.





# Baneberry *(Actaea spicata)*

## 1. Introduction

Baneberry *Actaea spicata* is a rare plant mainly associated with ancient ash woodland. It has a highly restricted distribution in the British Isles with modern records from only around 22 ten kilometre squares in a narrow band encompassing the Yorkshire Wolds and the Jurassic limestone foothills of the North York Moors, the magnesian limestone belt in Mid-West Yorkshire and the carboniferous limestone of the Yorkshire Pennines and Cumbria. The Howardian and Tabular Hills in Ryedale, along with calcareous woodlands in the southern North York Moors are a major national stronghold for the species.

There are recent records from nine Ryedale localities with historic records from a further nine. Populations are occasionally quite vigorous but usually very localised and often comprise a handful of plants, sometimes in two or three discrete colonies within a wood.

At most of its Ryedale stations, baneberry grows on free-draining, shallow or rocky soil over limestone. Typical locations are close to the top of slopes in valley or scarp woodlands, although populations also occur in disused limestone quarries within ancient ash woodland and, in one case, on a retaining bank alongside a sunken forest track. All locations in the district are ancient woodland sites and the species appears to have poor powers of dispersal.

Baneberry is a long-lived perennial herb pollinated by small insects. The species is slow-growing and may take many years to reach flowering stage. Although populations of baneberry colonising old quarries must have originated from seed, many populations appear to persist in the same location over long periods of time, perhaps relying on vegetative regeneration.

Baneberry is identified as a Priority Species in the Ryedale Biodiversity Action Plan because the district supports nationally important populations and the species may be vulnerable to extinction at some sites.

## 2. Conservation issues

Some Ryedale sites for baneberry support only a few plants and these populations could easily be

vulnerable to adverse changes in habitat conditions. It is therefore important to alert woodland managers to the presence of this species and encourage its conservation.

This plant apparently tolerates considerable shade but is unlikely to survive under dense conifers. It is vulnerable to competition from vigorous vegetation or brambles. Baneberry disappeared from Howsham Wood following clear-felling in the 1940's. Nutrient-enrichment such as fertiliser leachate from arable fields encourages competitive herb layer vegetation (including nettle beds) and may be a direct threat to the survival of baneberry at two Ryedale sites. Physical disturbance resulting from forestry operations is also likely to be a threat.

Most sites are in ancient semi-natural ash woodland but some occur within or at the edge of replanted stands. In such cases, gradual restoration of native tree cover around baneberry colonies is likely to be beneficial but needs to be assessed on a case-by-case basis. Removal of conifers from potentially suitable habitats within baneberry woods (e.g. small quarries or rock outcrops) should be encouraged and will often be possible without compromising economic forestry objectives.

There may be scope for increasing individual populations through careful management of surrounding vegetation (e.g. controlling vigorous species such as nettle and dog's mercury). However, further ecological research is needed to identify appropriate measures.

In the long-term, creation of new native woodland adjacent to baneberry woods may provide potential future habitats, especially on steep slopes with thin, rocky soils. However, it is important to ensure that such planting does not result in the loss of existing wildlife interest (eg. limestone grassland flora). There is a case for encouraging natural regeneration of ash woodland on quarry sites close to existing colonies.

The current status of baneberry in Ryedale is reasonably well-known but there is a need to re-check historic sites in case residual populations survive.

# Baneberry

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## 3. Action plan objectives

- Ensure that all known populations of baneberry in the district are conserved through sympathetic management and, where appropriate, measures to reduce nutrient-enrichment.
- Encourage sympathetic management of baneberry woods as a whole in order to increase populations and encourage the establishment of new colonies.
- Comprehensively assess current population status of the species in Ryedale by counting the number of plants in known colonies and re-visiting historic sites, especially if these have not been subject to recent botanical surveys.

## 4. Current action

Extensive botanical surveys have been undertaken of woodland in the Howardian Hills and northern Ryedale, so that the current distribution of baneberry is well-recorded. However, this plant can be elusive and some historic sites need to be revisited.

One Ryedale site for baneberry is a Yorkshire Wildlife Trust nature reserve (Netherby Dale, Ebberston) and another is a Site of Special Scientific Interest (Kirkham Park).

Management of the Hovingham Estate's woodlands under the UK Woodland Assurance Scheme includes detailed assessment of biodiversity interest. As part of this process, measures will be implemented to conserve two baneberry colonies and enhance adjacent habitat, e.g. by restoring native tree cover in part of South Wood.

## 5. Proposed action

- Adopt detailed conservation measures for baneberry on the Hovingham Estate and encourage similar measures at other sites in Ryedale through liaison with foresters and land owners (Hovingham Estate, HHAONB, RDC, FC).
- Ensure that the requirements of baneberry are taken into account in nature reserve management plans and SSSI management policies where appropriate (YWT, EN).
- Encourage the creation of six metre grass margins where arable fields abut baneberry woods through Environmental Stewardship (HHAONB, FWAG, RDC, RDS).
- Encourage new native woodland planting adjacent to baneberry woods to create buffer zones or potential future habitat for the species. (FC, HHAONB, RDC, RDS).
- Assess methods for managing vegetation around baneberry colonies to enhance their survival and spread (HHAONB, RDC, universities)

## 6. Links to other action plans

Implementation of this Action Plan will complement the local Habitat Action Plan for ancient ash woodland.







# Greater *(Sium latifolium)* Water Parsnip

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## 1. Introduction

Greater water parsnip *Sium latifolium* is a perennial plant belonging to the umbellifer (carrot) family. It grows in wet fen and swamp vegetation fringing open water and in wet ditches in fenland or floodplains. It favours shallow, alkaline water over peaty or alluvial soils. It is now restricted to lowland eastern and southern England.

Victorian botanical records suggest that it was once widespread in the Derwent valley around Malton and parts of the Howardian Hills with historic sites including Old Malton Ings, the banks of the Rye and Derwent, Rye Mouth, Crambeck, Ganthorpe and Terrington Carr. Within the Yorkshire region, small populations of greater water parsnip survive in the Lower Derwent Valley and in Holderness.

Greater water parsnip has declined catastrophically in Britain over the past 200 years and for this reason it has been identified as a Priority Species in the UK Biodiversity Action Plan. It is also listed as Nationally Scarce.

## 2. Conservation issues

Greater water parsnip is vulnerable to intensive management of ditches, frequent grazing by livestock, shading by scrub or dense reed growth, drainage and habitat destruction. Drainage and habitat loss are likely to have been the main factors leading to its extinction in Ryedale in the 19th century.

Re-introduction of greater water parsnip to appropriate sites in Ryedale is viable because of new opportunities to re-create floodplain wetlands within its historic range. This was a formerly widespread species and its re-introduction would be a flagship project for wider wetland re-creation schemes. Surviving populations in the Lower Derwent Valley, which are remnants of formerly more extensive populations along the Derwent, would provide a seed source.

The lakes at Castle Howard arboretum provide a suitable site for establishing a population close to one of the species' historic centres. The Arboretum Trust is involved in internationally important work in ex-situ

propagation of endangered plants in collaboration with Kew Gardens, and involvement with the Ryedale Biodiversity Action Plan complements this work.

A successful introduction at this site would provide seed or plants for re-introduction to other localities in Ryedale within the species' historic range.

Once knowledge of seed germination and propagation is gained then it should be possible to re-introduce this species on any suitable existing or re-created wetland area.

## 3. Action plan objectives

- The objective of this Action Plan is to establish an introduced population of greater water parsnip at Castle Howard Arboretum that can be used to re-introduce the species to suitable sites within its historic range in Ryedale.
- A self-sustaining population of greater water parsnip should be established at one site in the Derwent corridor by 2008.

## 4. Current action

A national Species Action Plan has been published for greater water parsnip.

Potential seed sources for re-introduction to Ryedale have been identified in the Lower Derwent Valley National Nature Reserve.



# Greater Water Parsnip

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## 5. Proposed action

- Obtain seed from the Lower Derwent Valley in 2007 for propagation in wet compost. Grow on seedling plants for introduction to lake margins and reedbeds at Castle Howard Arboretum in 2007/2008. Other suitable sites within Ryedale will be investigated.
- Undertake introduction of stock from the Arboretum site once mature plants become established or through further propagation from seed.
- Monitor other potential opportunities to re-establish self-sustaining populations in the Derwent corridor.
- Liaise with the national Species Action Plan co-ordinator concerning the above actions.

## 6. Links to other action plans

The local Habitat Action Plan for wetlands may create further opportunities to re-establish self-sustaining populations of greater water parsnip.

This Action Plan will contribute to the national SAP for the species by re-establishing greater water parsnip within its historic range in Ryedale.

## 7. Bibliography

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. I – vertebrates and vascular plants. [Species Action Plan for greater water parsnip: pp 241-243]. English Nature: Peterborough.





# Knapweed Broomrape

(*Orobanche elatior*)



*Knapweed Broomrape*

## 1. Introduction

Knapweed broomrape *Orobanche elatior* is a parasitic herb that obtains its nutrients from the roots of greater knapweed *Centaurea scabiosa*, although other tall perennial Compositae such as common knapweed *C. nigra* and field scabious *Knautia arvensis* have been recorded as host plants in Continental Europe. Some plants in Ryedale appear to use common knapweed as a host but this has not been proven.

It grows in tall grassland on base-rich soils and has a scattered and localised distribution on the chalk and limestone in England as far north as North Yorkshire. The most northerly British population is believed to be near Scarborough, so Ryedale is very close to the edge of its geographical range.

Knapweed broomrape is believed to be perennial although some related species behave as annuals. It is likely to be sensitive to summer grazing or mowing which would remove its flower spikes and eliminate or reduce the vigour of its host plant. Greater knapweed is predominantly a species of road and lane verges or under-grazed chalk and limestone grassland.

Knapweed broomrape has been known in Ryedale from the Howardian Hills since the late 18th century when it was recorded by the pioneering Yorkshire

botanist Robert Teesdale. It currently occurs at three locations, one of which (Broughton Lane) is probably Teesdale's original site.

At Broughton Lane, knapweed broomrape grows on the verges of a green lane amongst fairly species-rich false oat grassland containing lime-loving herbs such as greater knapweed, field scabious and wild marjoram. Soil pH is around 6.8. This site supports a number of other uncommon plants including bloody cranesbill, hoary cinquefoil and sand leek. The population has been in the range of five to ten flower spikes in recent years but 27 spikes were found in 2000 with around 45 in 2001. The population in 2003 fell back to its previous level of 27 spikes.

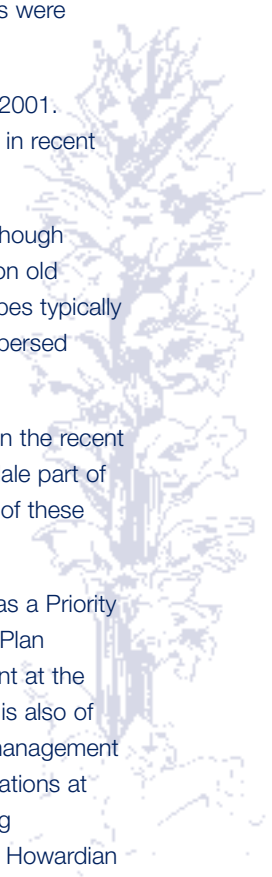
At Amotherby Lane, a very small population was recorded during the 1990s in a glade amongst dense scrub that supports fairly species-rich grassland with associates including yellow rattle, common spotted orchid and hawkweed oxtongue. No spikes were recorded in 2001.

At Swinton Lane, 13 spikes were found in 2001. This appears to be the first record, at least in recent times, from this site.

Pollination requirements are not known, although Lygaeid bugs have been noted swarming on old flower stalks at Amotherby Lane. Broomrapes typically produce large quantities of small, wind-dispersed seeds, similar to orchids.

Knapweed broomrape has been reported in the recent past from one or two locations in the Ryedale part of the Yorkshire Wolds but the current status of these populations is unknown.

Knapweed broomrape has been included as a Priority Species in the Ryedale Biodiversity Action Plan because this is a nationally uncommon plant at the northern edge of its geographical range. It is also of conservation importance because active management of its habitats is required to maintain populations at a favourable status, and because of its long documented history in country lanes in the Howardian Hills near Malton.



# Knapweed Broomrape

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## 2. Conservation issues

Small population size, isolation and vulnerability to habitat change are threats to the known populations of knapweed broomrape in the Howardian Hills. The flora of the HHAONB has been intensively recorded during the last ten years, including an extensive road verge survey, although its recent discovery at Swinton Lane suggests that it might be found at further locations between Malton and Amotherby. Many road verges in the HHAONB support greater knapweed but not knapweed broomrape.

This plant must have some capability to colonise new sites because the Amotherby Lane embankment is known to have been cultivated as allotment plots in the early 20th century. However, the Broughton Lane site may be a very long-established population. Loss of boundary habitats such as rough grassland along hedgebanks and field margins has probably resulted in increased isolation of knapweed broomrape populations but less intensive cutting of road verges in recent years may have benefited the species and its host plant.

Tethered ponies have grazed lane and road verges in the Howardian Hills for many years and this represents a sustainable form of verge management that, at low intensity, is likely to be positively beneficial to maintaining wildflower-rich grassland. However, knapweed broomrape is probably very sensitive to grazing during its summer flowering period.

The autecology of this species is poorly known, which makes it difficult to identify appropriate site management strategies. At Amotherby Lane, removal of encroaching scrub, rabbit fencing and winter grazing with ponies to reduce coarse grass cover has not resulted in recovery of the small population, with no flower spikes recorded in 2001. At Broughton Lane, liaison with the land owners and grazier appears to have produced remarkably positive results with a massive increase in flower spikes in 2001 following winter grazing. Unfortunately, resumption of grazing during August appeared to have removed most flower spikes prior to seed ripening.

At Broughton Lane, grazing outside the flowering period appears to have been beneficial, perhaps by reducing competition from brambles and coarse grasses or by creating germination niches. Such management is also likely to favour other uncommon plants. Removal of flower spikes by grazing between mid June and the end of August is, however, likely to be highly detrimental, both directly by preventing seeding and indirectly by reducing the vigour of the host plant and its ability to set seed. Lack of alternative grazing sites during the summer months may need to be addressed.

Some of the road verges at Swinton Lane were flailed in autumn 2000 in order to reduce scrub encroachment. At this site, knapweed broomrape is confined to a strip of around 50 metres where it might be threatened by invasion of dewberry (a relative of bramble). Adjoining sections of road verge are likely to be unsuitable due to summer cutting or, by contrast, lack of management resulting in encroachment of blackthorn suckers or dewberry underscrub.

More research and monitoring is clearly needed to identify the most favourable management regimes for this species.

Whilst establishment of new populations would be beneficial to ensure the survival of the species given its highly localised distribution in Ryedale, it is uncertain whether assisted colonisation (e.g. shedding seed on suitable sites) would be appropriate or effective. There are some potentially suitable sites, such as Hildenley Top covered reservoir, where there are banks of tall calcareous grassland rich in greater knapweed.

Broughton Lane is a popular local walk and bridleway. Many regular visitors have become interested in its special flora, raising local awareness and helping monitor the knapweed broomrape population.

# Knapweed Broomrape

## 3. Action plan objectives

- To recover a viable population of knapweed broomrape at Amotherby Lane, if possible and to maintain a population at Swinton Lane.
- To ensure favourable management of Broughton Lane through seasonal grazing, combined with ongoing monitoring of the knapweed broomrape population.
- To encourage favourable management of road verges and field margins adjacent to existing populations of knapweed broomrape to facilitate expansion of the highly localised populations.
- To search for any further populations of the species in Ryedale and to ensure their sympathetic management.

## 4. Current action

The Amotherby Lane site has been actively managed since the 1990s. Work has included rabbit fencing, removal of encroaching scrub and winter grazing by ponies (with the dung removed to avoid localised nutrient enrichment). This has so far failed to recover the very small knapweed broomrape population, with no flower spikes found in 2001.

Agreement has been sought with the grazier and land owners at Broughton Lane to allow winter and spring grazing with ponies whilst avoiding grazing of sections where knapweed broomrape grows in summer. This appeared to have encouraged a rapid expansion of the population in 2001 but this may have been offset by resumption of grazing whilst flower spikes were still present.

A botanical survey of road and lane verges in the Ryedale part of the Yorkshire Wolds is planned for 2005/6, which may identify further populations of knapweed broomrape.

## 5. Proposed action

- Ensure favourable management of the known sites for knapweed broomrape in the Howardian Hills AONB, including annual monitoring (HHAONB). This should include removal of encroaching scrub by cutting or winter/spring grazing and avoidance of mowing or grazing between late May and early September.
- Survey road verges between the A64 and Amotherby on Castle Howard Road and the B1257 in 2007, to search for further colonies of this species (HHAONB).
- Encourage local awareness of the special botanical interest of Broughton Lane (e.g. through guided walks) and encourage community involvement in monitoring scarce plants (HHAONB, RDC).
- Encourage the creation of grass margins on arable fields adjoining knapweed broomrape sites to buffer the habitat from agricultural operations and encourage expansion of the host plant and parasite into field margins (HHAONB).
- Knapweed broomrape should be sought for in the Ryedale Wolds road verges survey and appropriate management identified for any sites where it is found (NYCC).
- Sympathetic management should be sought for any further sites in the district where knapweed broomrape is identified (RDC).

## 6. Links to other action plans

Knapweed broomrape can be used as a flagship species to highlight the conservation value of road and lane verges as part of the Habitat Action Plans for neutral and calcareous grasslands. The species has recently colonised arable field headlands adjoining Broughton Lane, providing an example of a rare plant exploiting cereal field margins.





# Threatened Arable Flowers

## 1. Introduction

Annual plants have flourished for centuries in arable fields but many have disappeared or declined as a result of chemical weed control, use of highly competitive crop varieties, high fertiliser inputs and changes in cultivation methods. Several once common arable flowers are now threatened with extinction or have become increasingly rare in Britain, including cornflower *Centaurea cyanus*, shepherd's-needle *Scandix pecten-veneris*, small-flowered catchfly *Silene gallica* and red hemp-nettle *Galeopsis angustifolia*. Around 13% of plant extinctions in Ryedale have been of species associated with arable land.

Rarer arable plants are now mainly associated either with sandy or chalk and limestone soils in Ryedale although a few such as shepherd's needle grow on clay soils. Table 4 summarises species of conservation concern recently found in the district.

## 2. Conservation issues

Modern farming depends on the continuous control of crop weeds in both conventional and organic systems. This Action Plan does not seek to encourage nuisance weeds in the farmed countryside but to sustain tolerable levels of economically unimportant arable plants within the cultivated landscape and to create reserves for species threatened with local extinction.

Environmental Stewardship now offers a number of options that may help conserve threatened arable plants. These include un-cropped arable margins, conservation headlands, low-input spring cereals and wildlife seed crops.

## 3. Action plan objective

- Ensure that viable, self-sustaining populations of scarce or declining arable plants such as prickly poppy, flixweed, night-flowering catchfly, narrow-fruited cornsalad, corn marigold, dwarf spurge and dense silky-bent can be maintained in Ryedale.

## 4. Current action

A nature reserve for rare arable plants has been established in the North York Moors National Park.

Research into the management of annually cultivated arable field margins has been undertaken by ADAS in the Vale of Pickering.

The Centre for Ecology and Hydrology has monitored arable flowers at Manor Farm, Eddlethorpe.

## 5. Proposed action

- Encourage the uptake of Environmental Stewardship option for annually cultivated arable field margins on sandy and calcareous soils in the district (FWAG, RDC, RDS).
- Aim to establish two nature reserves for threatened arable flowers in Ryedale, one on the Vale of Pickering sand belt, the other on the chalk or limestone. These will need to be managed under long-term agreements with landowners.
- Where wild populations of threatened arable flowers are considered in danger of local extinction, seed should be harvested for introduction to the above reserves (flora locale, Cornflower Field Project).

## 6. Links to other action plans

This Action Plan should be considered in conjunction with the local and national Action Plans for arable field margins, farmland birds and red hemp-nettle.

## 7. Bibliography

UK BIODIVERSITY STEERING GROUP (1995). Biodiversity: the UK Steering Group Report. Volume 2: Action Plans. Habitat Action Plan for Cereal Field Margins. HMSO. London.

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans: I – vertebrates and vascular plants. [Species Action Plan for Red Hemp Nettle *Galeopsis angustifolia*: pp 177-179]. English Nature. Peterborough.

## Threatened Arable Flowers

Table 4 Rare arable plant species of conservation concern within Ryedale

SPECIES	HABITAT	NATIONAL STATUS	STATUS IN RYEDALE
<i>Apera interrupta</i> , Dense silky bent	Disturbed ground, set-aside, arable field margins on sand	Nationally Scarce	Restricted to the Vale of Pickering sand belt between Staxton and Rillington
<i>Euphorbia exigua</i> , Dwarf spurge	Chalky or sandy soils	Local and declining	Wolds, Howardian Hills, Vale of Pickering sand belt
<i>Fumaria parviflora</i> , Fine-leaved fumitory	Arable fields or rotational set aside on chalk	Nationally Scarce, declining	Recently recorded from West Knapton and Ganton
<i>Legousia hybrida</i> , Venus' looking-glass	Chalk or limestone soils	Local and declining	Rare nowadays; two recent sites (Wolds and Howardian Hills)
<i>Papaver argemone</i> , Prickly poppy	Arable margins/set-aside on light soils	Local and declining	Recently found at Eddlethorpe, Westow, Rillington, West Knapton, West Heselton and Ganton
<i>Scleranthus annuus</i> , Annual knawel	Arable margins/disturbed ground on sand	Uncommon and declining	Known from one site (Eddlethorpe)
<i>Scandix pecten-veneris</i> , Shepherd's needle	In autumn-sown cereal fields on heavy soils	UK BAP Priority Species	A few plants recently seen at Brawby and Keldholme; an introduced population appeared near Duggleby in 2002
<i>Silene noctiflora</i> , Night-flowering catchfly	Arable fields or set-aside on lime-rich soils	Uncommon and declining	Recently noted near Old Malton, Norton and Settrington
<i>Valerianella dentata</i> , Narrow-fruited cornsalad	Arable fields or set-aside on lime-rich soils	Nationally Scarce, declining	Recently seen near Ganton and Stonegrave



# Red Hemp Nettle *(Galeopsis angustifolia)*

## 1. Introduction

Red hemp nettle *Galeopsis angustifolia* is an annual wildflower associated with spring-sown arable crops and other disturbed open vegetation on chalk and limestone soils such as screes, disused railway embankments and old quarries. It requires well-drained, warm conditions and also occurs on coastal shingle in southern England.

It is a summer annual germinating in late spring and, in arable fields, setting seed amongst the cropped stubbles.

This plant was described as “common in cornfields and waste places” in north-east Yorkshire in the 1950’s and “locally frequent on the Wolds” in 1990. However, it is believed to be restricted to a single site in Ryedale and is probably now threatened on the Yorkshire Wolds as a whole. It has recently been recorded from just one location in the North York Moors National Park, near Thornton-le-Dale.

Red hemp nettle is one of the most rapidly disappearing British wildflowers, with a 90% decline in distribution estimated since the 1970’s. It is classed as Nationally Scarce and identified as a Priority Species in the UK Biodiversity Action Plan. It is included as a Priority Species in the Ryedale Biodiversity Action Plan because of its highly threatened status nationally and because active conservation measures are likely to be necessary for it to survive in Ryedale.

## 2. Conservation issues

Red hemp nettle has declined in arable habitats for similar reasons as other declining arable flowers. These include intensive use of herbicides and fertilisers, the switch from spring to autumn sowing of cereals and the use of high competitive crop varieties. As this species is late to germinate, flower and set seed, it is also threatened by the rapid ploughing in of stubbles. Because of its requirement for warm calcareous soils, the species has a naturally restricted distribution.

Conservation of threatened arable flowers is difficult to integrate into modern crop farming, either in conventional or organic systems. The most threatened species are small, uncompetitive annuals that pose

an insignificant threat to crop production but farmers need to control more competitive grasses and broadleaved weeds that do affect crop quality and yield.

Red hemp nettle has declined severely during the period in which rotational set-aside has been available, suggesting that set-aside has not assisted the survival of rarer arable flowers.

Red hemp nettle could benefit from the management of annually cultivated un-cropped field margins under Environmental Stewardship, but uptake of this option has so far been low in Ryedale.

However, this species is now so rare in a Yorkshire context that its continued survival cannot be guaranteed through agri-environment schemes. Its survival in Ryedale may depend on populations associated with open early successional vegetation on the chalk such as screes and quarries. Despite extensive botanical surveys in recent years, only one population is currently known in the district.

Non-arable habitats may become unsuitable through natural succession such as scrub invasion or development of closed grassland or competitive weed vegetation. Quarry sites may be threatened by fly tipping. In the early days of the Countryside Stewardship Scheme, land owners on the Wolds were encouraged to stabilise and re-vegetate chalk scree, which may have resulted in the loss of populations. Fortunately, scree is now recognised as a valuable habitat feature in its own right. Sympathetic management of chalk scree will also benefit other uncommon annual plants such as knotted hedge parley and small-flowered buttercup.

## 3. Action plan objectives

- The known Ryedale population of red hemp nettle should be conserved through appropriate site management.
- Seed should be harvested at a sustainable level from this population (or other populations in the Yorkshire Wolds) to establish a cultivated population to provide stock for introduction to appropriate sites.



# Red Hemp Nettle

- Self-sustaining populations of red hemp nettle should be established on at least one chalk scree site and one arable site in Ryedale within the Yorkshire Wolds Natural Area.

## 4. Current action

A cornfield flower nature reserve has been established in the North York Moors National Park.

A National Species Action Plan has been published for red hemp nettle. The key objectives of this Action Plan are to maintain the range and enhance the total population size of this species in the UK. Also, to facilitate the natural colonisation of new sites.

A chalk scree site on the Ryedale Wolds potentially suitable for introduction of this species has been identified and is in sympathetic management.

## 5. Proposed action

- A suitable Management Agreement should be sought with the owner of the known Ryedale site for red hemp nettle. If agreed, appropriate management prescriptions will need to be identified.
- Condition upon permission from the land owner, seed should be harvested from the Ryedale site if this is considered sustainable. Alternatively, seed should be obtained from other populations in the Yorkshire Wolds Natural Area.
- A cultivated population should be established from locally native seed sources to provide seeds or seedling plants for introductions.
- Provided a viable cultivated population can be established, agreement should be sought to introduce the species to one chalk scree site and one arable site (e.g. a dedicated arable flower conservation site) on the chalk or Jurassic limestone within the Ryedale part of the Yorkshire Wolds. This should be undertaken by 2007.
- Any introduced populations should be monitored annually to assess population status and fine-tune management prescriptions.

- Arable Stewardship/Environmental Stewardship proposals likely to favour threatened arable flowers (e.g. annually cultivated un-cropped margins or un-sprayed overwinter stubbles) should be given priority on sites with thin calcareous soils, especially in close proximity to natural or introduced population of red hemp nettle.

## 6. Links to other action plans

This Action Plan will contribute to the National SAP for red hemp nettle.

## 7. Bibliography

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. I – vertebrates and vascular plants. [Species Action Plan for red hemp nettle: pp 177-179]. English Nature: Peterborough.





# True Fox Sedge *(Carex vulpina)*

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## 1. Introduction

True fox sedge *Carex vulpina* is a tufted perennial sedge associated with wet ditches, water margins and marshy pools within wet grassland on base-rich soils. It reproduces from seed and is sensitive to shade, habitat loss and hydrological changes.

It is a rare species in Britain, now mainly restricted to South-East England. It is listed as 'Vulnerable' in the current Red Data Book and has been identified as a Priority Species in the UK Biodiversity Action Plan. Targets include conservation of viable populations at existing sites and restoration of viable populations at five suitable sites.

True fox sedge was formerly found in a marshy field on the floodplain of the River Derwent near Menethorpe according to records dating from 1955 until the mid 1970's. The site was drained and converted to arable land around about 1980 and the species is now considered extinct in Ryedale. This was its most northerly known locality in Britain. It was also formerly recorded from one other Yorkshire location, at the village of Fishlake, near Doncaster. However, it is not known whether this population is extinct, as it has not been recorded from there since 1983. Most of the remaining populations are in Kent, Sussex, Gloucestershire and Oxfordshire.

More recently (2001) there have been claims of a new location of *C. vulpina* in Yorkshire, at Loversall Delph, an area within Potteric Carr which is a Yorkshire Wildlife Trust Reserve situated on the boundary of Doncaster.

## 2. Conservation Issues

The past and present status of true fox sedge is somewhat confused because of its similarity to the much more widespread false fox sedge *Carex otrubae*, although material from the Ryedale site was expertly identified. Recent suggestions that British populations of true fox sedge may in fact be two distinct species, the other potentially being a hybrid between true and false fox sedge have so far been unconfirmed. (C.Smith, 2003, pers comm.) The genetics and taxonomy of British populations of true fox sedge are currently being investigated by English Nature.

True fox sedge became extinct in Ryedale in the recent past due to land drainage and conversion of its only known site to arable usage. The same site is now being reverted to flood meadow under Environmental Stewardship with shallow pools being created to benefit wading birds. This provides a potentially ideal opportunity for re-introducing the species, which can be grown easily from seed.

## 3. Action plan objectives

- This will aim to establish a self-sustaining population at its former site. Consideration would also be given to establishing self-sustaining populations at other wetland sites in the Derwent floodplain in the Norton – Menethorpe area.
- Efforts will be made to locate material for re-introduction that is of as 'local provenance' as possible.

## 4. Current action

The owners of the former site have agreed in principal to the re-introduction of this species.

Unsuccessful attempts have been made to locate preserved material from the former Ryedale population in accordance with IUCN guidelines for translocations. However, the previous existence of *C. vulpina* within the district has been well documented by respected experts in their field and it will therefore be on this basis that efforts towards a re-introduction will proceed.

## True Fox Sedge (*Carex vulpina*)



Pon Porley, English Nature

### 5. Proposed action

- In 2007 the site at Fishlake will be assessed to see if any remaining *C. vulpina* exist there. If the population is found to be extant, enquiries and assessments will need to be made regarding the possibility and viability of seed being collected for translocation to Ryedale (EN, DMBC, RDC).
- During 2007 enquiries will be made regarding *C. vulpina* at Potteric Carr, as to correct identification and the source of this species at this location, with a view to it also being a potential donor population (YWT, RDC).
- If neither of the above prove to be successful then re-introduction of *C. vulpina* to its former location will proceed with plants already available from Oxfordshire.

### 6. Links to other action plans

Implementation of this action plan will contribute to the national SAP for *Carex vulpina*.

### 7. Bibliography

UK BIODIVERSITY GROUP (1999). Tranche 2 Action Plans. I – vertebrates and vascular plants. [Species Action Plan for true fox sedge: pp 145-147]. English Nature: Peterborough.

# Species Statements

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## **Brown Hare**

### *Lepus europaeus*

Hares have decreased dramatically in Britain as a whole, with the Game Conservancy Trust estimating a 75% decline since World War II. On a national level, hare populations have been monitored by the Mammal Society and the Game Conservancy Trust. Aspects of Hare ecology have also been studied by several organisations.

To combat the decline a UK Action Plan for hare has been published. This aims to maintain and expand existing populations so that spring numbers in Britain are doubled by 2010.

In Ryedale however, the hare is a common mammal, found almost throughout the district. The favourable status of hare in Ryedale is probably due to the prevalence of mixed farming, with the patchwork landscape of arable, pasture and woodland providing ideal habitat. Populations are particularly strong in the Howardian Hills, the Vale of Pickering and on the Wolds. Hares appear to be less numerous in the south-west of the district. Because of the survival of varied rural habitats in Ryedale, hares have been less vulnerable to serious population decline than in areas dominated by winter cereal production. Woodland Grants and Countryside Stewardship have encouraged widespread planting of new farm woodlands, hedgerow restoration, creation of arable reversion grassland and sowing of grass margins around arable fields in recent years. All of these measures will have benefited hares by providing additional breeding, feeding and cover habitats. Set-aside is also likely to have benefited hare populations.

Hares can be a minor pest of cereal crops (especially in hard weather) and damage new hedge planting, so periodic culling is undertaken on some farms. Some sport shooting and hunting takes place in the district but neither activity appears to affect its population status. The value of hare as a quarry species may encourage sympathetic land management and tolerance of agricultural damage.

Whilst localised declines have been reported on some farms, on a landscape scale, farmland habitats remain favourable for hare in Ryedale. Given that agri-environment measures are likely to sustain the present favourable status of this species, it has been decided not to include hare in the Species Action Plans. It is however, intended to establish baseline data on its distribution in the district in order that future trends can be monitored. This will hopefully include input from farmers/landowners, farm advisors, gamekeepers and members of the public.

This data will contribute to the national hare project underway, which is focusing on why the species is in decline in some areas and yet thriving in others.

## ***Antichaeta brevipennis*** **(a snail killing fly)**

This fly is associated with lush waterside vegetation in wetlands. The larvae appear to develop as parasites on the egg masses of wetland snails such as *Succinea spp.*

Falk (1991) describes *A. brevipennis* as a very rare species and cites records from six post-1970 British localities. There is a 1960's record from Denaby Ings (S. Yorkshire) and only one further reported in Yorkshire in 2000: at Jeffrey Bog a YWT reserve in Ryedale District.

It has Red Data Book category 2 status (vulnerable). Threats to the species, include drainage and the wholesale clearance of marginal vegetation along the edge of ditches etc.

# Species Statements

## Otter *Lutra lutra*

The otter was once widespread throughout the UK, but underwent a rapid decline in population beginning in the middle of the last century, by the 1980's the species was virtually lost from southern and eastern (lowland) England. Strongholds still remain in south-western England, Scotland and Wales and Northern Ireland. Thankfully the decline appears now to have halted and the species shows signs of starting to be on the long road to recovery.

The factors contributing to the decline of the otter were; pollution of habitat (mainly by PCBs which adversely affected their reproductive capability).

Poor water quality was also detrimental to other organisms and this led to insufficient prey items being available for the otter.

Impoverished bankside vegetation meant there was less suitable habitat available for breeding and resting areas.

Incidental mortality also played its part, with road casualties and drownings in eel nets being the main cause.

A UK BAP priority species, the main objectives are to maintain and expand existing otter populations. By 2010, the goal is the restoration of breeding otters to all catchments and coastal areas where they have been recorded since 1960.

In Ryedale, there was a successful re-introduction programme of captive bred otters into the River Derwent corridor in the early 1990's and the status of otter is now favourable in the district.

Otter numbers will hopefully be monitored, on a regular (circa every 5 years) basis, surveys will be overseen by the Environment Agency. At present it is difficult to estimate exact numbers but ongoing research could in future enable exact population sizes to be determined via DNA analysis of spraints (fecal droppings).

The Yorkshire Otters & River Project of the Yorkshire Wildlife Trust is part of the national 'Water UK and The Wildlife Trusts' Otters & Rivers Project'. They are working with the Environment Agency, water

companies, landowners, local authorities and others, to implement the national Otter Biodiversity Action Plan.

The Ryedale Wet Woodland HAP and the implementation of certain options under Environmental Stewardship such as otter holt construction, will benefit otters and thus help contribute to the national SAP.

## *Lipsothrix errans* (a crane fly)

*Lipsothrix errans* is a crane fly of wet woodland, where the larvae are thought to develop in wet rotten wood. In Britain it has been recorded in Wales, Scotland and northern England and has a classification of 'nationally scarce'. The only Ryedale record is from Gilling East 'The Wilderness' (carr woodland) in 2000 (R.Crossley).

The district supports a significant resource of wet woodland, probably representing one of the most important concentrations in the Yorkshire and Humber region (Selman et al, 1999). Several wet woodland communities are represented but fen alder woods are of particular note, including some which can be regarded as 'near-natural': these are, hydrologically intact, isolated from sources of artificial nutrient-enrichment and little modified by human management. Indeed, some of Ryedale's valley alder woods probably represent the most natural habitats in the district. These woods support a range of specialised insects including rarities such as the crane fly *Dicranomyia omissinervis* a Red Data Book (2) species and the fungus gnat *Macrocera fastuosa*, a species known from only two other British localities.

Many of these wet woodland sites lies within SSSIs or SINCs (Sites of Importance for Nature Conservation) and so receive a limited degree of protection.

These species will also benefit from the local Habitat Action Plan for Wet Woodland.

### Bibliography

SELMAN, R., DODD, F. & BAYES, K. (1999). A biodiversity audit of Yorkshire and the Humber. Yorkshire & Humber Biodiversity Forum.

# Species Statements

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## Depressed (or compressed) River Mussel

### *Pseudanodonta complanata*

*Pseudanodonta complanata* is a large greeny brown coloured mussel that burrows into the silt of slow-flowing, hard-water rivers; it has a widespread but localised distribution in lowland England as far north as North Yorkshire (see map in Kerney, 1999). Its common name refers to its rather laterally flattened appearance. It is seriously threatened throughout its European range, some countries' populations bordering on extinction. The UK probably has the healthiest population in Europe (with the possible exception of Finland) but the species has undergone a 30% decline in numbers in the last century and is listed as a Priority Species in the UK Biodiversity Action Plan. Often overlooked and therefore potentially under recorded, more recent studies have led to the thought that it may be more common than previously thought. It is well established in the Derwent from Low Hutton downstream.

The main threats to this species appear to be water pollution and physical disturbance of river banks' and channels.

Little is known about the ecology of this species so the UK SAP has focused on research (mainly by the University of Cambridge). Results revealed so far have shown that the mussel may prefer rivers with high flow and a high algal content. They can also exist at very high densities along short stretches of river (up to 24 per m<sup>2</sup> have been recorded). *P. complanata* is a longlived species, living anywhere between 8 and 18 years. Averaging about 6cm in length they can grow up to 10cm. They reproduce between April and June, the larvae parasitising fish such as perch and sticklebacks.

There is a likelihood that mussels help reduce turbidity through their filtering activities and that their decline therefore may have an effect on water quality.

Current work is now focusing on breeding the depressed river mussels for future re-introduction programmes.

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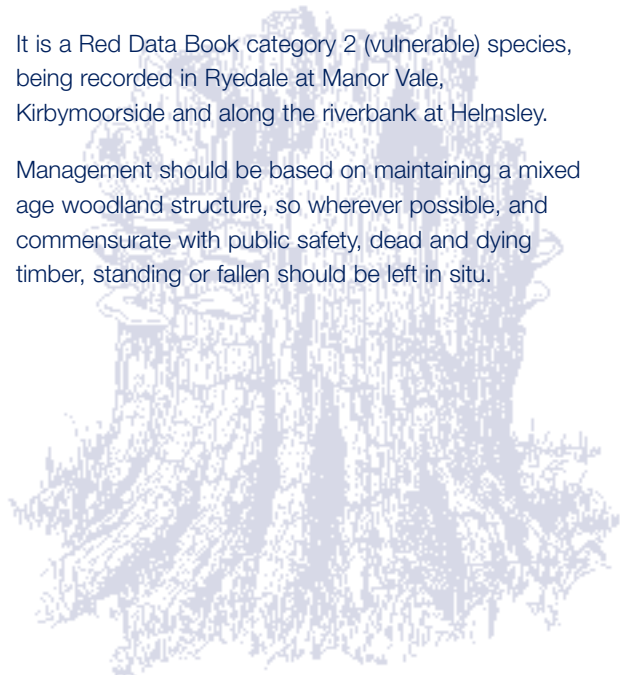
## *Oedemera virescens* (A flower beetle)

This is a long, elongated, dull metallic green beetle.

It probably develops in dead wood as a larva, with the adults feeding on flowers and blossom in late spring. It has its British stronghold in the Jurassic limestone valleys on the southern edge of the North York Moors between Rievaulx and Pickering. *O. virescens* seems to have disappeared from other parts of its English range such as Norfolk and Gloucestershire, although it has recently been recorded in Dumfriesshire, Scotland (R. Crossley 2000).

It is a Red Data Book category 2 (vulnerable) species, being recorded in Ryedale at Manor Vale, Kirbymoorside and along the riverbank at Helmsley.

Management should be based on maintaining a mixed age woodland structure, so wherever possible, and commensurate with public safety, dead and dying timber, standing or fallen should be left in situ.



# Species Statements

## Thistle Broomrape

### *Orabanche reticulata*

Thistle broomrape is as the name suggests a parasite of thistles, in particular creeping thistle. Although widely but scarcely distributed throughout Europe, in Britain this species has a curious distribution, being only found in Yorkshire on chalk (Wolds) or limestone (Dales).

The population is distributed across a number of key sites with ephemeral populations along the banks of the Wharfe and Ure. Monitoring of these individual sites over the last decade has revealed large fluctuations of spike numbers from year to year. Why the species should remain so scarce and localised when its primary host and the surrounding vegetation it is usually found in (fairly rank neutral grassland, despite growing on calcareous soils), are so abundant is not fully understood.

Disturbance is thought to be a key factor in its distribution, as it could facilitate seed coming into contact with thistle roots and thus the establishment of new plants. On sites where management is lacking, the invasion of scrub and dense grasses could threaten the survival of a population.

Thistle broomrape is nationally scarce in Britain and because of its localised distribution is additionally classified as 'near threatened'. Being included in English Nature's Species Recovery Programme, it is considered that effective conservation measures are already in place at the Ryedale site, which is mainly covered by SSSI designation.



## Cranefly

### *Arctocnopa melampodia*

A cranefly associated with sandy river banks. The first and only Yorkshire record so far being from the banks of the River Derwent at Norton Ings in 1997 (R.Crossley 2000), where it appeared to be well established. The species has only been recorded from four other very scattered localities nationally since 1960 and is listed as Red Data Book category 2 (vulnerable).

*A.melampodia* prefers shaded banks, the larvae may develop in wet sand or rotting vegetation.

Management should aim to maintain semi-natural vegetation along sandy riverbanks, with some trees and bushes for shade.

## Fungus Gnat

### *Macrocera fastuosa*

*Macrocera fastuosa* is a large fungus gnat with speckled wings and long slender legs. A single individual was found at Chafer Wood in 2000 and another at Forge Valley in 2001 the only other recent known British locality is Wyre Forest, Worcestershire in 1988. There is an old (1927) record from a site in Devon. It has Red Data book category 1 status (endangered).

The biology of this species is unknown; but larvae of other members of the genus have been reared from a range of substrates including turf and rotting wood. Larvae are thought to be carnivorous. In spite of the common name given to this group of flies, the majority of *Macrocera* species are not associated with fungus. All four British localities are woodland with streams, so damp shaded conditions are probably required.

The Ryedale site is a protected YWT reserve and management aims should be to maintain the present habitat intact.

# Key Wildlife Actions

Habitats and species do not exist in isolation and the whole Ryedale ecosystem is important to wildlife. There is therefore a need to identify actions which if implemented across the whole of the Ryedale area could benefit a range of habitats and species. These are detailed below.

## Agri-environmental schemes

### (and other grant schemes)

These are regarded as potentially the major deliverer of biodiversity targets on agricultural land. For example Environmental Stewardship provides funding to farmers and other land managers in England who deliver effective environmental management on their land. The scheme is intended to build on the recognised success of Environmentally Sensitive Areas and Countryside Stewardship and its primary objectives are to:

- Conserve wildlife (biodiversity)
- Maintain and enhance landscape quality and character
- Protect the historic environment and natural resources
- Promote public access and understanding of the countryside
- Natural resource protection

There are also two secondary objectives:

- Genetic conservation
- Flood management

### *Action:*

- Promote and support take-up of the Environmental Stewardship scheme and any other relevant agri-environmental schemes that promote biodiversity.
- Promote and facilitate the uptake of grants which provide opportunities for businesses, Parish Councils and community groups to undertake conservation work through charitable and other funding schemes.

## Statutory and strategic plans

Many organisations have the potential to influence biodiversity in Ryedale and most will have business or management plans, which govern policy and set work programmes. Where possible, these should incorporate the objectives, targets and actions set out in the Ryedale Biodiversity Action Plan.

### *Action:*

- Include protection policies for key habitats and species in Ryedale in all relevant strategic and statutory plans such as the Ryedale Local Plan/Local Development Framework, the Howardian Hills AONB Management Plan, the Rights of Way Improvement Plan and the Local Geodiversity Action Plan and ensure that the Ryedale BAP takes account of the relevant recommendations made within these plans.





# Key Wildlife Actions

## Site Safeguard

### **Sites of Special Scientific Interest (SSSIs) and other statutory sites such as Special Areas of Conservation (SACs)**

SSSIs and SACs are the country's very best wildlife and geological sites. There is one SAC in Ryedale and 29 SSSIs within the plan area, although it is possible that this list will grow.

SACs form a network of protected sites across the EU called 'Natura 2000'. Compared with other designations SACs tend to be large, often covering a number of separate but related sites, and sometimes including areas of developed land. All UK SACs are based on SSSIs. In planning law, they are effectively afforded the highest possible protection.

SSSIs are designated by English Nature under the 1981 Wildlife and Countryside Act and are areas of special interest by reason of their flora, fauna, geological or physiographic importance and represent the best remaining natural and semi-natural habitats. Government policy is that proposals for development within or likely to affect an SSSI should be subject to special scrutiny and that nature conservation should be a significant material consideration in determining such proposals. In addition the Government has set a target for 95% of SSSI land to be in 'favourable' or 'recovering' condition by 2010.

Wildlife and geological features are under pressure from development, pollution, climate change and unsustainable land management. Protecting and managing SSSIs is a shared responsibility, and an investment for the benefit of future generations.

#### **Action:**

- Support the aim for 95% of SSSI land to be in 'favourable' or 'recovering' condition and ensure that support is given to the designation of SACs in the Ryedale area.
- Take account of all relevant strategic and statutory plans which impact on SSSIs and SACs such as the Ryedale Local Plan/LDF.

### **Sites of Importance for Nature Conservation (SINCs)**

SINCs are nature conservation sites (other than SSSIs) that are of at least District significance and which provide a key element of the network necessary to ensure the maintenance of the current range of flora and fauna in the area. These are sites that whilst not quite of SSSI status, are similar in that they are of such quality and importance that they cannot be adequately recreated, relocated or compensated for elsewhere. There are 82 SINCs within the Ryedale area. These are therefore an extremely valuable resource and need to be managed sensitively and appropriately.

#### **Action:**

- Support a rolling programme of surveys on SINCs.
- Encourage all SINC sites to be in 'favourable conservation management'.
- Ensure farmers and landowners are aware of the existence and importance of sites on their land.
- Consider all sites of nature conservation interest as potential SINCS. If permission from site owners is forthcoming, sites of biological interest should be surveyed by an ecological surveyor and the NEYEDC should assess the results against the published guidelines. The results should be discussed by the SINC panel and a recommendation made to Ryedale District Council.

# Key Wildlife Actions

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## Planning controls and other statutory consultations

These include planning applications, felling licences, tree preservation orders, hedgerow removal notices, woodland grant schemes and regulations relating to conservation areas and listed buildings. All these can provide a safety net for protecting key sites and species from undesirable land use change. They can also provide an opportunity for enhancing biodiversity as in the case of provision for barn owls and bats in new barn conversions, new geological sites on roadside verges, and protection of wetlands from pollution. It is essential that such applications are evaluated in the context of the overall Ryedale resources of key species and habitats and that they comply with national legislation.

### **Action:**

- Safeguard integrity of individual sites by ensuring compliance with national legislation.
- Responses to planning and other consultations will seek to provide positive opportunities for wildlife wherever possible.
- Where it is considered that there is a wildlife interest on a site following a change of land use, an effective wildlife survey should be carried out.



# General Habitat Management

## Advice and support

Much of the biodiversity resource of Ryedale is not restricted to designated sites such as SSSIs and SINC. It is therefore vital that farmers across the area have access to advice and support which can help them achieve benefits for biodiversity. Some advice and support is available for example within the Howardian Hills AONB. This level of support is now available to all farmers within the Ryedale area due to the appointment of a Countryside Officer.

Many landowners know about and appreciate the wildlife on their land but they are not always aware of its national importance or management needs. Loss of biodiversity can take place through lack of knowledge rather than intent. There are often opportunities for combining legitimate economic management of land with management for wildlife. There are a plethora of grant schemes which can be used to fund biodiversity action, which in itself can be off-putting to landowners and farmers.

In addition, there may be a need for generic advice which can be given in a more resource-effective manner such as through the production of management information sheets. However these should only be produced where a particular need has been identified i.e. where no information exists at present or where there is a need for information which relates specifically to Ryedale.

Finally, advice and support should not only be targeted to those habitats and species for which specific Action plans have been written, but also to species which are known to be found on the key habitats and to habitats known to support key species identified in this report (see Tables 1 and 2).

### *Action:*

- Provide support and advice to farmers and landowners on the wildlife conservation value of their land and how best to maintain and enhance it.
- Provide advice and support on the range of grant schemes available to farmers and land managers.
- Consider the use of a variety of methods of disseminating information such as web sites, management information sheets and farm walks. These should be undertaken in a co-ordinated manner and where a need has been identified.
- Carry out work to benefit species and habitats which do not have their own individual Action Plan but which are connected to habitats and species identified within this Plan.

## Promotion of good practice

The promotion of good practice provides an excellent way of disseminating information to a wide audience. It embraces the sharing of skills and experience amongst land managers and the creation and promotion of demonstration sites. The demonstration and promotion of good practice will primarily be aimed at exchanging experiences and information between small groups of practitioners but could also occasionally include wider interest groups such as local communities and the public.

### *Action:*

- Support actions which promote good practice.
- Encourage the development of buffer zones around important wildlife habitats and encourage good practice on land boundaries including ditches, hedges and woodlands.

# General Habitat Management

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## Sites where access routes cross areas of high biodiversity value

Where access routes cross areas of high biodiversity value greater consideration needs to be given to the location and management of the routes.

### **Action:**

- Work with North Yorkshire County Council, farmers and owners, and access organisations to minimise the impact of the route on biodiversity and yet ensure that access routes are supported in line with statutory conditions.

## Invasive and non-native species

Invasive species and non-native species can be a threat to biodiversity such as Japanese knotweed, Himalayan balsam, giant hogweed, New Zealand swamp stonecrop, grey squirrels, roe deer, rabbits, American mink, North American signal crayfish and goldfish. Control of these species may need to be undertaken to benefit biodiversity but should only be carried out where they have a direct and clear positive nature conservation benefit.

### **Action:**

- Control invasive species in priority sites where appropriate.
- Produce leaflets on invasive species and their effects where appropriate.

## Wildlife corridors

The retention and enhancement of wildlife corridors is important in order to assist species dispersal, particularly with regard to climate change. Wildlife corridors include hedgerows, field margins, watercourses, woodland and areas of unimproved grassland. Although some of these will be supported under individual Species and Habitat Action Plans it is important that this Plan recognises the generic value of these corridors and includes an action to help protect and enhance these features.

### **Action:**

- Support the retention and enhancement of wildlife corridors where they are most appropriate.

## Water courses

Although many of the district's rivers and streams have good/excellent water quality, pollution, eutrophication, water levels, siltation and excessive vegetation growth can all have a negative impact on water courses. Support should therefore be given to the Water Framework Directive and other management plans that propose actions to help rectify the problems identified above.

### **Action:**

- Support the Water Framework Directive and other management plans that propose actions to help rectify problems associated with the district's rivers and streams.
- Support projects which help tackle problems known to undermine the water quality of the area, where appropriate.

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## **Wildlife gardening (including non use of peat and rock from limestone pavement)**

Wildlife gardeners should embrace two areas of best practice:

- a. The use of peat alternatives to help safeguard peat bogs. Retailers should be encouraged by customers and the BAP partnership to stock a good range of peat alternatives.
- b. The non-purchase of 'water worn limestone' sold as rockery stone. This produce exploits limestone pavement, a scarce and irreplaceable natural habitat, which is fully protected by law. (It might be marketed under other names such as 'Cumbrian limestone'). Eire still exports this rock, so everyone should seek to reduce the demand by not using it in the garden.

## **Reduced disturbance**

One of the fundamental requirements of wild animals is freedom from disturbance, so that they can concentrate resources on breeding, foraging or resting. Care should be taken to minimise disturbance, for example when exercising dogs close to a concentration of birds (e.g. at a roost or where ground-nesting birds may be present).

## **Habitat creation**

Nature conservation schemes should not be implemented until the site has been checked for existing wildlife interest. There are cases of habitat creation schemes, such as tree planting, being undertaken on established semi-natural habitats, to the overall detriment of biodiversity.

## **Non collection of fungi and flowers**

Many species of plant are specifically protected from up-rooting or picking by the Wildlife and Countryside Action 1981, and there is a code of conduct. Recent guidelines to protect fungi from over picking have been published. The BAP promotes the non-collection or picking of any wild plant or fungi.



# Knowledge of Wildlife Resource of Ryedale

## Provision of information

The biodiversity audit carried out to assist with the writing of this Biodiversity Action Plan, in conjunction with numerous surveys undertaken to date, provide a baseline of data on the current status of the biodiversity resource in Ryedale. However, it is essential that this information is kept up to date if we are to achieve Biodiversity Action Plan targets. Information is needed for the protection and management of key species and habitats, to ensure that resources are directed to the most appropriate areas, comply with Government policy and legislation, monitor the success of the work undertaken on the ground, help landowners and managers incorporate biodiversity measures in to their day to day activities and raise awareness and encourage appreciation and enjoyment of Ryedale's wildlife.

The duplication of effort must be avoided if we are to maximise resources and a data recording system will need to be used to assist with this work.

### *Action:*

- Maintain a register of key nature conservation sites
- Support a rolling programme of surveys on Sites of Importance for Nature Conservation
- Identify and co-ordinate the biodiversity information needs in Ryedale.
- Establish a recording mechanism to assist farmers, land managers and communities with monitoring wildlife.
- Establish a way of sharing information and the results of biodiversity monitoring in Ryedale with relevant agencies, individuals and organisations, possibly through the formation of the Ryedale Biodiversity Partnership Group.
- Establish a Service Level Agreement with the North and East Yorkshire Ecological Data Centre.
- Promote the use of the North and East Yorkshire Ecology Data Centre.
- Share information on ecology and distribution of key species and habitats.
- Make relevant information publicly accessible.
- Support the production of a Local Geodiversity Action Plan for the Ryedale area.
- Develop a series of maps to help identify key habitats and species within the district.



# Communication and publicity

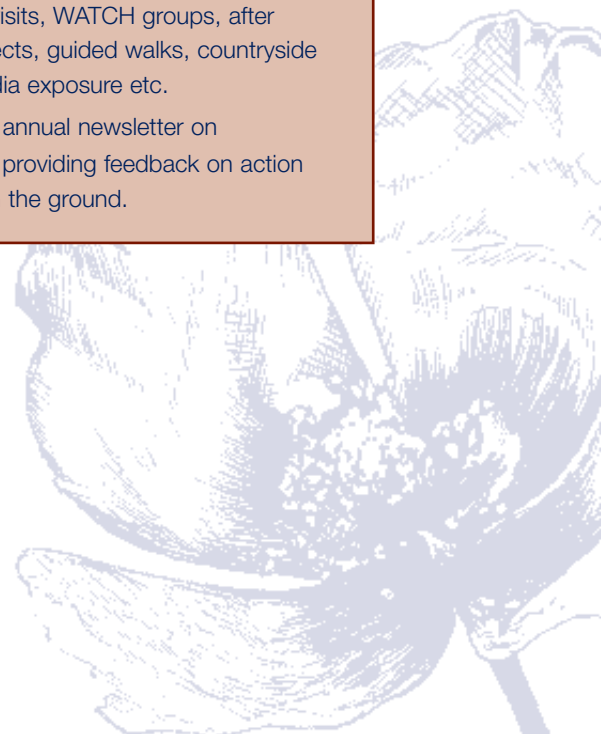
## Public enjoyment and interpretation

Public support is essential if the biodiversity targets in this Action Plan are to be achieved. Whilst not everyone wants to or is able to become actively involved with wildlife conservation, there is considerable interest amongst both local people and visitors in the natural environment of Ryedale.

Although individual plans concentrate on prioritising action on the ground, there are many opportunities to promote public enjoyment and understanding of Ryedale's wildlife, often with the use of public money.

### **Action:**

- Support Wild About Ryedale and use this as main mechanism for encouraging general public enjoyment and interpretation.
- Support other events undertaken for specific audiences where appropriate such as the annual FWAG events programme.
- Ensure information is easily accessible to a wide audience through avenues such as web sites, attendance at shows and promotional material.
- Use temporary explanatory signs for management works in public places.
- Assess if there is a need for promotional material and agree within the Biodiversity Partnership Group the most appropriate mechanism to provide the material.
- Promote media interest in biodiversity in Ryedale.
- Seek opportunities for undertaking environmental education opportunities through illustrated talks, trips to sites, classroom visits, WATCH groups, after school projects, guided walks, countryside events, media exposure etc.
- Produce an annual newsletter on biodiversity, providing feedback on action achieved on the ground.



# Making it Happen

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## Partnerships

Biodiversity planning is about prioritising and co-ordinating the work of all those who can have a direct influence on wildlife. This requires a high degree of partnership working. It is essential that this partnership is supported and encourages people/organisations to become involved at all levels, thereby pooling resources and sharing workloads. To achieve this a Ryedale Biodiversity Partnership Group will be formed in 2007. The role of this Partnership Group will not only be one of co-ordinating action on the ground but also one of identifying issues which are best tackled at a regional or national level and lobbying/passing it's recommendations on to the appropriate organisations. In addition, consideration will be given to identifying ways to integrate wildlife into day-to-day economic activities such as farming, forestry, fisheries management, tourism and others.

### *Action:*

- Offer practical assistance to landowners, farmers and managers to implement actions wherever possible.
- Set up the Ryedale Biodiversity Partnership.
- Explore scope for partnership projects based on particular themes and/or geographical areas such as wetlands project in Scarborough or work with neighbouring Authorities such as the North York Moors National Park and York City Council.
- Seek ways of including local business in implementing biodiversity actions.
- Support the production of a Local Geodiversity Action Plan for the Ryedale area

## Community action

It is essential that opportunities for people to contribute to the biodiversity resource of Ryedale are explored. Conservation anywhere in the world ultimately depends on local appreciation and value. It is likely that people within Ryedale are aware of the value of their local wildlife but the regional, national and international value is often less understood. Conversely the conservation agencies are not always aware of local sites for priority species nor of the work being undertaken to safeguard their future. A two-way flow of information should be encouraged.

### *Action:*

- Explore ways of working with local communities to identify and protect key species and habitats.
- Use existing volunteer groups to deliver biodiversity targets for key species and habitats and seek new opportunities for working with volunteers.
- Work with local interest groups to focus on particular biodiversity targets.

## Recreational users

Ryedale is an important area for recreation for both local people and visitors and provides many opportunities for integrating recreation with biodiversity. Although not a priority, opportunities to integrate recreational users with biodiversity should be explored where possible.

### *Action:*

- Provide ecological information and encourage wildlife appreciation amongst recreational users.
- Seek opportunities for encouraging public enjoyment of wildlife.



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## Other environmental interests

Ryedale's prime wildlife and geological sites often have other conservation interests. There are strong links between archaeological, wildlife, geological and landscape values. All projects need to take account of the links between these interests at the earliest opportunity and look at ways to interlink their needs.

### **Action:**

- Ensure that wildlife conservation measures take account of archaeological, historical and landscape values at the earliest opportunity.
- Include biodiversity measures in archaeological and landscape conservation work wherever possible.

## Funding

Much of the biodiversity work can be funded through existing grant schemes such as Environmental Stewardship, (English) Woodland Grant Scheme, HHAONB Management Grants and Ryedale District Council Management Grants. However it will be necessary to explore additional sources of funding to take forward some areas of the Biodiversity Action Plan.

### **Action:**

- Explore opportunities for external funding and sponsorship for actions, key species and habitats where appropriate.
- Support the retention of current funding sources.

## Monitoring and reviewing

It is essential to monitor and review the plan and the actions identified within it. It is certain that priorities for action will change over the life of the plan. Some targets will be achieved whilst others may become more difficult to reach. New information will become available and it may be necessary to add or delete key species and actions plans. Economic and political circumstances will inevitably change, as will environmental factors.

The Biodiversity Action Reporting System (BARS) will provide one mechanism for achieving this. This is a web-based information system developed to support the planning, monitoring and reporting requirements of national and local Biodiversity Action Plans. It provides a co-ordinated approach to recording Biodiversity Action Plan actions and delivery and will make it possible to identify what is and is not being done in Ryedale and the UK.

It will also be necessary to monitor and review the plan through the Ryedale Biodiversity Partnership Group on a regular basis.

### **Action:**

- Set up a system to pass on information to BARS.
- Report progress on individual plans annually at the Ryedale Biodiversity Partnership.
- Monitor the overall plan on an annual basis.
- Carry out major review of Ryedale Biodiversity Action Plan every five years.
- Disseminate results of the monitoring and reviews through the Ryedale Biodiversity Newsletter and other avenues.

# Glossary

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**Alluvial** A fine grained, fertile soil consisting of sand, mud and silt deposited by flowing water.

**Anaerobic** Absence of free oxygen or air.

**Annual** A plant that grows from seed, will flower, set seed and die in one growing season.

**Autecology** Study of the ecological relationships of a single species.

**Base-rich** Containing high amounts of neutral or alkaline constituents promoting good structure, aeration and fertility.

**Biennial** Plant that germinates and grows in one season, over winters and then flowers in its second year of growth.

**Calcareous** Containing calcium in the form of chalk or lime.

**Carr** An area of wet woodland and scrub, usually dominated by willow and/or alder.

**Coppice** Trees cut periodically so they produce straight poles from their stumps.

**Emergent vegetation** Wetland plants which typically have most of their leaves above water level, e.g. reeds and rushes and herbs such as water forget-me-not.

**English Woodland Grant Scheme** operated by the Forestry Commission, this grant scheme encourages private landowners to create new woodland and manage existing woodland.

**Entomology** Branch of science concerned with the study of insects.

**Ephemeral** Short lived.

**Eutrophic** Nutrient rich.

**Extant** Still in existence, surviving.

**Forest Habitat Networks** Aims to alleviate the consequences of fragmentation of woodland by linking woodlands with appropriate habitats.

**Heptageniidae** Family of Mayflies 10-35 mm across. Common in uplands where the water in streams runs faster and clearer.

**JIGSAW scheme** Grant scheme offered by the Forestry Commission to encourage the expansion and linkage of semi-natural woodland.

**Leachate** Particles of a substance lost as water drains through the ground.

**Local Provenance** Genetic material that has originated from a place and a source considered as local for the area where it has been planted.

**Lygaeidae** Large family of slender oval ground bugs.

**Mesotrophic** Having intermediate levels of productivity, with neither high nor low levels of nutrients.

**Metapopulations** A population perceived to exist as a series of subpopulations, linked by migration between them.

**Nationally Scarce** An inventory published by the Joint Nature Conservation Committee of species which are considered to have a very localised distribution in Great Britain and are estimated to occur in fewer than 100 hectares out of a total of

2877 hectares (10 km squares).

**Natural Areas** 120 areas within England whose boundaries are defined not administratively but by their natural features, wildlife and historical land use.

**Perennial** A woody or herbaceous plant that continues its growth for at least three years.

**Riparian** Inhabiting or situated on the bank of a river.

**REACT funds** grants given by Ryedale District Council for community environmental action.

**Red Data Book** An inventory published by the Joint Nature Conservation Committee. Red Data Book Species are those considered to be nationally:

- Endangered (RDB1) – species considered to be in serious danger of extinction in Great Britain.
- Vulnerable (RDB2) – species believed to be declining throughout their British range and which may become endangered.
- Rare (RDB3) – species which are not endangered or vulnerable but are extremely localised in Britain and believed to occur in fewer than 15 OS hectares (10 km squares).

**SACs** Special Areas of Conservation – areas which have been given special protection under the European Union's Habitats Directive. They provide increased protection to a variety of wild animals, plants and habitats and are a vital part of global efforts to conserve the world's biodiversity.

**Semi-natural woodland** Woodlands where trees native to the site predominate.

**SINC** Site of Importance for Nature Conservation. A non-statutory site designated by the Local Authority for its nature conservation interest.

**SSSIs** Sites of Special Scientific Interest. Designated by English Nature these statutory sites are areas of special interest by reason of their flora, fauna, geological or physiographic importance and represent the best remaining natural and semi-natural habitats.

**Successional** Natural changes in the structure and species composition of a community, e.g. transition from open water to fen then carr, culminating in a climax community of woodland.

**UK Woodland Assurance Scheme** A national woodland certification scheme developed through discussions between stakeholders in the UK forestry sector. It is a voluntary scheme that allows for third party independent evaluation and certification of woodland to internationally recognised standards of sustainable forest management.

**Vegetative reproduction** Asexual production of new plants without the involvement of seeds.

**WATCH** The junior membership club of the Wildlife Trusts.



## List of abbreviations

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ADAS	Environmental advisory service for Government and others	HHAONB	Howardian Hills Area of Outstanding Natural Beauty
AONB	Area of Outstanding Natural Beauty	IUCN	The World Conservation Union
BAP	Biodiversity Action Plan	NEYEDC	North and East Yorkshire Ecological Data Centre
BARS	Biodiversity Action Reporting System	NFU	National Farmers Union
BTCV	British Trust for Conservation Volunteers	NYBG	North Yorkshire Bat Group
CA	Countryside Agency	NYCC	North Yorkshire County Council
CEH	Centre of Ecology and Hydrology	NYMNP	North York Moors National Park
CLA	Country Landowners and Business Association	RDC	Ryedale District Council
DEFRA	Department for Environment, Food and Rural Affairs	RDS	Rural Development Service
EA	Environment Agency	RIGS	Regionally Important Geological Sites
EC	European Commission	RSPB	Royal Society for the Protection of Birds
EH	English Heritage	SAC	Special Area of Conservation
EN	English Nature	SAP	Species Action Plan
EU	European Union	SINC	Site of Importance for Nature Conservation
EWGS	English Woodland Grant Scheme	SS	Species Statement
FC	Forestry Commission	SSSI	Site of Special Scientific Interest
FEC	Farmed Environment Company	WFW	Water for Wildlife
FWAG	Farming and Wildlife Advisory Group	YEPT	Yorkshire Exmoor Pony Trust
HAP	Habitat Action Plan	YMG	Yorkshire Mammal Group
HE	Hovingham Estate	YWT	Yorkshire Wildlife Trust

## Latin names of species referred to in the text

Adderstongue fern	<i>Ophioglossum vulgatum</i>	Fine-leaved fumitory	<i>Fumaria parviflora</i>
Alder	<i>Alnus glutinosa</i>	Flixweed	<i>Descurainia sophia</i>
American mink	<i>Mustela vison</i>	Flower beetle	<i>Oedemera virescens</i>
Annual knawel	<i>Scleranthus annuus</i>	Fragrant orchid	<i>Gymnadenia conopsea</i>
Ash	<i>Fraxinus excelsior</i>	Frog orchid	<i>Coeloglossum viride</i>
Autumn gentian	<i>Gentianella amarella</i>	Frogbit	<i>Hydrocharis morsus-ranae</i>
Baneberry	<i>Actaea spicata</i>	Fungus gnat	<i>Macrocera fastuosa</i>
Barbel	<i>Barbus Barbus</i>	Giant bellflower	<i>Campanula latifolia</i>
Barn owl	<i>Tyto alba</i>	Glow-worm	<i>Lampyrus noctiluca</i>
Bay willow	<i>Salix pentandre</i>	Goldilocks buttercup	<i>Ranunculus auricomus</i>
Beech	<i>Fagus sylvatica</i>	Great burnet	<i>Sanguisorba officinalis</i>
Bellflower picture-winged fly	<i>Platyparea discoidea</i>	Great crested newt	<i>Triturus cristatus</i>
Betony	<i>Stachys officinalis</i>	Great water dock	<i>Rumex orbiculatus</i>
Bilberry	<i>Baccinium myrtillus</i>	Greater butterfly orchid	<i>Platanthera chlorantha</i>
Birdseye primrose	<i>Primula farinose</i>	Greater knapweed	<i>Cenaurea scabiosa</i>
Birdsfoot	<i>Ornithopus perpusillus</i>	Greater tussock sedge	<i>Carex paniculata</i>
Birdsfoot trefoil	<i>Lotus corniculatus</i>	Greater water parsnip	<i>Sium latifolium</i>
Bitter vetch	<i>Lathyrus montanus</i>	Greater woodrush	<i>Luzula sylvatica</i>
Black bindweed	<i>Bilderdykia convolvulus</i>	Green tiger beetle	<i>Cicindela campestris</i>
Black grass	<i>Alopecurus myosuroides</i>	Green woodpecker	<i>Picus viridis</i>
Black poplar	<i>Populus nigra</i>	Green-winged orchid	<i>Orchis morio</i>
Bloody cranesbill	<i>Geranium sanguineum</i>	Grey partridge	<i>Perdix perdix</i>
Bogbean	<i>Menyanthes trifoliata</i>	Grey sallow	<i>Salix cinerea</i>
Bottle sedge	Cyperaceae rostrata	Hard fern	<i>Blechnum spicant</i>
Bracken	<i>Pteridium aquilinum</i>	Haresfoot clover	<i>Trifolium arvense</i>
Brook lamprey	<i>Lampetra pacifica</i>	Hawkweed oxtongue	<i>Picris hieracioides</i>
Brown argus	<i>Aricia agestis</i>	Hawthorn	<i>Crataegus monogyna</i>
Brown hare	<i>Lepus europaeus</i>	Hazel	<i>Corylus avellana</i>
Buckthorn	<i>Prunus spinosa</i>	Heath bedstraw	<i>Galium saxatile</i>
Bugloss	<i>Anchusa arvensis</i>	Heath cudweed	<i>Omalotheca sylvatica</i>
Chalk carpet	<i>Scotopteryx bipunctaria</i>	Heath milkwort	<i>Olygala serpyllifolia</i>
Cherry	<i>Prunus avium</i>	Heath speedwell	<i>Veronica officinalis</i>
Chickweed wintergreen	<i>Trientalis europaea</i>	Herb paris	<i>Paris quadrifolia</i>
Cistus forester	<i>Adscita geryon</i>	Himalayan balsam	<i>Impatiens grandiflora</i>
Common knapweed	<i>Centaurea nigra</i>	Hoary cinquefoil	<i>Potentilla argentea</i>
Common lime	<i>Tillia europaea</i>	Holly	<i>Ilex aquifolium</i>
Common oak	<i>Quercus robur</i>	Hop sedge	<i>Carex lupulina</i>
Common reed	<i>Phragmites australis</i>	House sparrow	<i>Passer domesticus</i>
Common spotted orchid	<i>Dactylorhiza fuchsii</i>	Knapweed broomrape	<i>Orobanche elatior</i>
Corn bunting	<i>Miliaria calandra</i>	Knotgrass	<i>Polygonum aviculare</i>
Corn marigold	<i>Chrysanthemum segetum</i>	Knotted clove	<i>Trifolium striatum</i>
Cornflower	<i>Centaurea cyanus</i>	Knotted hedge parley	<i>Torilis nodosa</i>
Couch grass	<i>Cynodon dactylon</i>	Lapwing	<i>Vanellus vanellus</i>
Cranefly	<i>Arctocoonopa melampodia</i>	Larch	<i>Larix deciduas</i>
Curly waterweed	<i>Lagarosiphon major</i>	Lesser stitchwort	<i>Stellaria graminea</i>
Daubenton's bat	<i>Myotis daubentonii</i>	Linnet	<i>Carduelis cannabina</i>
Dense silky bent	<i>Apera interrupta</i>	Little owl	<i>Athene noctua</i>
Depressed river mussel	<i>Pseudanodonta complanata</i>	Lousewort	<i>Pedicularis sylvatica</i>
Devilsbit scabious	<i>Succisa pratensis</i>	Maiden pink	<i>Dianthus deltoids</i>
Diving beetle	<i>Laccornis oblongus</i>	Marbled white butterfly	<i>Melanargia galathea</i>
Dog's mercury	<i>Mercurialis perenne</i>	Marsh cinquefoil	<i>Potentilla palustris</i>
Dogwood	<i>Cornus sanguinea</i>	Marsh hawksbeard	<i>Crepis paludosa</i>
Downy birch	<i>Betula pubescens</i>	Marsh tit	<i>Parus palustris</i>
Dwarf spurge	<i>Euphorbia exigua</i>	Marsh valerian	<i>Valeriana dioica</i>
Early dog violet	<i>Viola reichenbachiana</i>	Mayfly	<i>Electrogena affinis</i>
Early purple orchid	<i>Orchis mascula</i>	Meadow barley	<i>Hordeum secalinum</i>
English Elm	<i>Ulmus procera</i>	Meadowsweet	<i>Filipendula ulmaria</i>
False fox sedge	<i>Carex otrubae</i>	Mountain melick	<i>Melica nutans</i>
False oat grass	<i>Arrhenatherum elatius</i>	Mouse-ear hawkweed	<i>Hieracium pilosella</i>
Fan-leaved water crowfoot	<i>Ranunculus circinatus</i>	Narrow-fruited cornsalad	<i>Valerianella dentate</i>
Fen bedstraw	<i>Galium uliginosum</i>	New Zealand swamp stonecrop	<i>Crassula helmsii</i>
Field gentian	<i>Gentianella campestris</i>	Night-flowering catchfly	<i>Silene noctiflora</i>
Field maple	<i>Acer campestre</i>	Nightjar	<i>Caprimulgus europaeus</i>
Field scabious	<i>Knautia arvensis</i>	Noctule bat	<i>Nyctalus noctula</i>

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North American signal crayfish	<i>Pacifastacus leniusculus</i>	Water-crowfoot	<i>Ranunculus penicillatus</i>
Norway spruce	<i>Picea abies</i>	Wavy hair-grass	<i>Deschampsia flexuosa</i>
Otter	<i>Lutra lutra</i>	White-clawed crayfish	<i>Austropotamobius pallipes</i>
Parrot's feather	<i>Myriophyllum aquaticum</i>	Wild columbine	<i>Aquilegia vulgaris</i>
Perennial flax	<i>Linum perenne</i>	Willow tit	<i>Parus montanus</i>
Pignut	<i>Conopodium majus</i>	Wood barley	<i>Hordelymus europaeus</i>
Pipistrelle bat	<i>Pipistrellus pipistrellus</i>	Wood club-rush	<i>Scirpus sylvaticus</i>
Prickly poppy	<i>Legousia hybrida</i>	Wood sorrel	<i>Oxalis acetosella</i>
Purple moor grass	<i>Molinia caerulea</i>	Wood speedwell	<i>Veronica montana</i>
Purple small-reed sedge	<i>Calamagrostis canescens</i>	Wood warbler	<i>Phylloscopus sibilatrix</i>
Ragged robin	<i>Lychnis flos-cuculi</i>	Woodcock	<i>Scolopax rusticola</i>
Red fescue	<i>Festuca rubra</i>	Woodlark	<i>Lullula arborea</i>
Red hemp-nettle	<i>Galeopsis angustifolia</i>	Woolly thistle	<i>Cirsium eriophorum</i>
Redshank	<i>Tringa totanus</i>	Wych elm	<i>Ulmus glabra</i>
Reed bunting	<i>Emberiza schoeniclus</i>	Yellow pimpernel	<i>Lysimachia nemorum</i>
Reed canary grass	<i>Phalaris arundinacea</i>	Yellowhammer	<i>Emberiza citrinella</i>
Reed sweet grass	<i>Glyceria maxima</i>		
Rockrose (common)	<i>Helianthemum nummularium</i>		
Rough clover	<i>Trifolium scabrum</i>		
Rowan	<i>Sorbus aucuparia</i>		
Ruffe	<i>Gymnocephalus cernua</i>		
Sand leek	<i>Allium scorodoprasum</i>		
Saw-wort	<i>Serratula tinctoria</i>		
Sessile oak	<i>Quercus petraea</i>		
Sheep's sorrel	<i>Rumex acetosella</i>		
Shepherd's needle	<i>Scandix pecten-veneris</i>		
Silver hair-grass	<i>Aira caryophyllea</i>		
Six-spotted longhorn beetle	<i>Leptura sexguttata</i>		
Skylark	<i>Alauda arvensis</i>		
Small cudweed	<i>Logfia minima</i>		
Small eggar moth	<i>Eriogaster lanestris</i>		
Small pondweed	<i>Potamogeton pusillus</i>		
Small-flowered buttercup	<i>Ranunculus parviflorus</i>		
Small-flowered catchfly	<i>Silene gallica</i>		
Smooth catsear	<i>Hypochaeris maculata</i>		
Snail killing fly	<i>Antichaeta brevipennis</i>		
Snipe	<i>Gallinago gallinago</i>		
Soft rush	<i>Juncus effusus</i>		
Solomon's seal	<i>Polygonatum multiflorum</i>		
Song thrush	<i>Turdus philomelos</i>		
Spindle	<i>Euonymus europaeus</i>		
Spotted flycatcher	<i>Muscicapa striata</i>		
Square-spotted clay moth	<i>Xestia rhomboidea</i>		
Sterile brome	<i>Anisantha sterilis</i>		
Stinging nettle	<i>Urtica dioica</i>		
Stone bramble	<i>Rubus saxatilis</i>		
Storksbill (common)	<i>Erodium cicutarium</i>		
Sweet vernal grass	<i>Anthoxanthum odoratum</i>		
Sword-leaved helleborine	<i>Cephalanthera longifolia</i>		
Sycamore	<i>Acer pseudoplatanus</i>		
Thistle broomrape	<i>Orbanche reticulata</i>		
Thyme-leaved sandwort	<i>Arenaria serpyllifolia</i>		
Toothwort	<i>Lathraea squamaria</i>		
Tor grass	<i>Brachypodium pinnatum</i>		
Tormentil	<i>Potentilla erecta</i>		
Tree sparrow	<i>Passer montanus</i>		
True fox sedge	<i>Carex vulpina</i>		
Tufted sedge	<i>Carex elata</i>		
Turtle dove	<i>Streptopelia turtur</i>		
Upright brome	<i>Bromopsis erecta</i>		
Venus' looking-glass	<i>Legousia hybrida</i>		
Water violet	<i>Hottonia palustris</i>		
Water vole	<i>Arvicola terrestris</i>		

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